



**Australian
Communications
and Media Authority**

Expiring spectrum licences, stage 3

Consultation paper

APRIL 2025

Canberra

Level 3
40 Cameron Avenue
Belconnen ACT

PO Box 78
Belconnen ACT 2616

T +61 2 6219 5555
F +61 2 6219 5353

Melbourne

Level 32
Melbourne Central Tower
360 Elizabeth Street
Melbourne VIC

PO Box 13112
Law Courts
Melbourne VIC 8010

T +61 3 9963 6800
F +61 3 9963 6899

Sydney

Level 5
The Bay Centre
65 Pirrama Road
Pymont NSW

PO Box Q500
Queen Victoria Building
NSW 1230

T +61 2 9334 7700
F +61 2 9334 7799

Copyright notice

<https://creativecommons.org/licenses/by/4.0/>

Except for the Commonwealth Coat of Arms, logos, emblems, images, other third-party material or devices protected by a trademark, this content is made available under the terms of the Creative Commons Attribution 4.0 International (CC BY 4.0) licence.

All other rights are reserved.

The Australian Communications and Media Authority has undertaken reasonable enquiries to identify material owned by third parties and secure permission for its reproduction. Permission may need to be obtained from third parties to re-use their material.

We request attribution as © Commonwealth of Australia (Australian Communications and Media Authority) 2025.

Contents

Executive summary	1
Expiring spectrum licences stage 3 consultation	5
Introduction	6
Preliminary views on incumbent use-cases	11
Preliminary views on options for ESL frequency bands	20
Preliminary views on licence duration and renewal statements	24
Preliminary views on pricing	27
Invitation to comment	29
Appendix A: public interest criteria	30

Executive summary

We have assessed options for the future of licences that keep Australians connected

Mobile connectivity and other wireless communications services are key enablers of our economy, society and access to the digital world. Communications services keep us in touch, informed, entertained and they often keep us safe.

Wireless communication in Australia is made possible by spectrum licences issued by the ACMA. Many of the licences that Australians rely on for talk, text and data, and others used for rail and broadcasting services, are reaching the end of their term. What happens to them matters for the businesses and agencies that hold these licences, potential alternative users, and to all Australians using services they provide.

This consultation paper – and its accompanying preliminary views and supporting papers – outlines the ACMA’s initial set of options on what should happen to these licences. The views are offered for consultation and feedback.

These licences underpin the mobiles market, now and into the future

Most of the licences in this process underpin Australia’s 3 public mobile networks. These networks are operated by Optus, Telstra and TPG Telecom. Around 30 million mobile phone services in Australia make use of these and similar networks for business and personal use, with as much as 1.3 million terabytes of data downloaded within a 3-month period. Around 98% of people with a mobile service use it to place calls, 96% to text, and 95% to access the internet.¹ Most people in Australia can choose between these 3 network operators and from over 40 brands of mobile services, which compete on price, quality and other add-ons.² 4G and 5G services are key areas of competition and contribute billions to Australia’s economy.

A combination of highly flexible, nation-wide licences, and smaller-scale licences, issued by the ACMA have enabled between 96 and 99.5% of the Australian population to be covered by a mobile network.³ Some of the licences in this expiring licence process have taken Australia from 2G to 5G, and are now intended to be used for future 6G services and direct-to-device (D2D) satellite communications. D2D services are intended to work on consumer handsets, including in hard-to-connect parts of the country. Use of national and other licences in this way, as well as regionally focused investment and shared network agreements (such as the one between Optus and TPG), have the potential to boost choice for Australians.

¹ Number of mobile services estimated to be in operation as at 30 June 2024; data download figures relate to the 3-month period between 1 April and 30 June 2024. Call, text and internet access figures relate to the 6-month period to June 2024. See: Australian Communications and Media Authority, [Communications and media in Australia: How we communicate](#), December 2024, accessed 10 March 2025; Australian Competition and Consumer Commission, [Internet Activity Report to June 2024](#), December 2024, accessed 10 March 2025; Australian Communications and Media Authority, [Communications and media in Australia: Trends and developments in telecommunications 2023–24](#), December 2024, accessed 10 March 2025.

² These brands include the 3 mobile network operators and mobile virtual network operators (MVNOs) who obtain wholesale access to the network of an operator and sell retail services to end-users.

³ [Telstra claims 99.5% population coverage through its network, Optus 98.5%, TPG over 96%](#); 2022 figures reported by operators and based on predicted coverage.

Licences for mobile services should be renewed in most cases, and we want to do more for Australians in unserved areas

We have determined that these licences have promoted, and will likely continue to promote, the long-term public interest. We have also seen no evidence of alternative uses for this spectrum that would convince us that these licences should be returned to the market.

Where licences are being used for wide-area wireless broadband networks, our preliminary view is that they should be renewed. We seek further information in some cases where this might not be the case, or where other issues are present.

Australia's vast landmass and concentrated population can make delivering connectivity in regional areas economically and practically challenging. There is demand in this market from smaller players interested in providing localised wide-area wireless broadband services. While sharing spectrum is already permitted under national licences, it has generally not occurred in practice.

We want to retain the current and future benefits of the national licensing model, while also making better use of unused or under-utilised spectrum for place-based services in regional areas. We have provided initial [advice to government](#) on our ideas and will be exploring these further through a separate consultation process.

Licences delivering the wireless component of the NBN are especially important for regional Australians and our preliminary view is that they should be renewed

NBN Co provides wholesale access for broadband across Australia, mostly using wired connections to homes and businesses. Connecting these premises can be challenging, especially in regional areas, and fixed wireless connections are a solution, with around 400,000 of the total 8.8 million subscriptions to the NBN being fixed wireless. For some in regional, remote and rural Australia, this is their main or only form of connectivity.

NBN Co continues to upgrade its wireless capacity, and renewal of its licences will support its ongoing capacity to support Australians using these services.

Renewed mobile service and NBN licences should have durations of between 11 and 16 years

We propose to align expiry dates for the spectrum licences with those applying to spectrum licences in the 850 MHz, 900 MHz and 3.7 GHz bands that are outside this process. This means that all spectrum licences used for mobile and fixed wireless broadband by these operators will expire in 2044.⁴

This proposal provides licensees with investment confidence and reduces barriers to licence trading, which can lead to more efficient use of the spectrum and improved services for consumers. It will also allow us to assess outcomes for consumers delivered by deployment of D2D satellite services and the Optus/TPG network sharing agreement.

⁴ Spectrum licences held by Optus, Telstra and TPG in 26 GHz are not subject to the current process and will expire in 2036.

Train trips and free-to-air news keep us on-the-move and informed; the right framework can support these services and outcomes

Spectrum licences authorising rail communications in 5 Australian capital cities, and those facilitating breaking news coverage and other out-of-studio broadcasts are also expiring.⁵ State governments, free-to-air commercial television broadcasters and the ABC have invested in these services to the benefit of people across Australia.

However, changes in technology, service delivery and a range of factors relating to use of the spectrum, mean that different frameworks would be more appropriate. Our preliminary view is that apparatus licences will allow rail operators to continue to operate in their current spectrum, and transition to new 5G-based systems using different spectrum over the next decade. Similarly, apparatus licences will also allow more users to share spectrum with broadcasters, without adversely affecting services or consumers.

We are projecting listed price ranges of \$5.0–6.2 billion for NBN Co and mobile spectrum licences

Spectrum is a valuable public asset, and industry should pay a fair price for its use. We have conducted a direct benchmarking analysis to arrive at price ranges for spectrum used for wireless broadband services covered by expiring licences. This benchmarking analysis took into account relevant spectrum auction results in Australia and over 30 other countries.

Our preliminary view on price ranges result in a projected nominal sum of \$5.0–6.2 billion for expiring licences, which is less than the previous total nominal value of \$8.2 billion when these licences were originally acquired through various auctions, spectrum licence renewals and apparatus licence conversions.⁶ This is consistent with international trends, which has seen spectrum values decreasing over time and will support sustainable investment that benefits Australia.

In developing this approach, we drew on advice provided by spectrum valuation experts Plum Consulting, as well as Frontier Economics and Ian Martin Advisory.

Tax arrangements for rail and broadcasting apparatus licences should be based on similar prices

Our preliminary view is that taxes applicable to apparatus licences for rail services should be based on prices applying to the corresponding 1800 MHz band spectrum licences used for mobile broadband services⁷ or 1800 MHz band PMTS Class B licence taxes of \$0.01 per 'paired MHz' per head of population.⁸

Tax applicable to apparatus licences for the broadcasters should increase by \$28,502 (from \$214,218 to \$242,720, based on current apparatus licence tax rates) to reflect 10 MHz of additional usable spectrum in a television outside broadcast network licence.

Previous licence renewal processes have seen public interest discounts apply to some licences issued for rail communications services. The minister has the power to require, in addition to other matters, that prices reflect an amount that the minister considers appropriate.

⁵ Licences for rail services cover Adelaide, Brisbane, Melbourne, Perth and Sydney.

⁶ Nominal amounts mean they are not inflation-adjusted. These amounts also do not adjust for different licence durations.

⁷ Our preliminary view is that these should be valued between \$0.1895 and \$0.2356/M Hz/pop.

⁸ The use of 'paired MHz' (or 2 x 1 MHz) means that the price is for every 2 MHz, rather than every 1 MHz. When compared with \$/MHz/pop prices for spectrum access charges, the PMTS Class B tax rate is effectively \$0.005/MHz/pop.

In stage 3 of our 4-stage expiring spectrum licence process, we are seeking feedback from stakeholders on our preliminary views

We welcome feedback from stakeholders on our preliminary views, which are set out in a series of 4 papers with 3 detailed supporting papers. We will consider feedback in the development and refinement of preferred views in stage 4 of our process, which is expected to start in Q3 2025.

To achieve this timing, we ask that feedback be provided by **Wednesday, 25 June 2025**.

Expiring spectrum licences: stage 3 consultation

Our preliminary views on expiring spectrum licence (ESL) spectrum are set out in 4 papers, accompanied by 3 supporting papers. We recommend stakeholders read papers in the numbered order, as these papers contain analysis and supporting information that subsequent papers rely upon.

This paper summarises our preliminary views and provides information about the consultation.

Preliminary views papers

- 1. Preliminary view paper 1: Incumbent use-cases and the public interest**
Discusses our preliminary views on whether incumbent use-cases for ESL spectrum are currently, or likely to promote, the long-term public interest.
- 2. Preliminary view paper 2: Options for ESL frequency bands and the public interest**
Discusses our preliminary views on how different options (that is, renewal, partial renewal and non-renewal for each ESL frequency band) may affect the public interest.
- 3. Preliminary view paper 3: Licence duration and licence statements**
Discusses our preliminary views on licence duration and renewal statements for any spectrum licences that may be renewed as a result of this ESL process.
- 4. Preliminary view paper 4: Pricing for ESLs**
Discusses our preliminary views on pricing for each ESL frequency band, primarily in a 'dollars per MHz per pop' format.

Supporting papers

- 1. Supporting paper 1: Overview of expiring spectrum licences, incumbent holdings, use and the secondary market**
Provides an overview of the ESLs relevant to this process, incumbent spectrum-licensed holdings, the allocation history of each ESL frequency band, and secondary market activities (for example, spectrum licence trading and third-party authorisations) to provide context for how current arrangements have developed over time.
- 2. Supporting paper 2: Competing and complementary demand for ESL spectrum**
Provides analysis of competing and complementary demand for spectrum covered by ESLs and outlines the use-cases proposed by prospective alternative licensees and how these relate to the public interest
- 3. Supporting paper 3: Trends and developments in spectrum management, policy and technology, and markets**
Provides an overview of relevant trends and developments that have either informed our preliminary views, or may come to do so, depending on how they progress.

Questions for consultation

We welcome feedback from stakeholders on our preliminary views, broadly in relation to incumbent use-cases and promotion of the long-term public interest, options for ESL frequency bands and the public interest, licence duration and licence statements and pricing.

Introduction

Between June 2028 and October 2032, 69 of the 81 current spectrum licences will expire. These ESLs cover a range of bands and are used for wireless broadband (WBB), rail safety and control communications (rail communications) and television outside broadcast (TOB).

The ESLs, sometimes used in conjunction with other radiocommunications licences, are communication enablers of our economic, digital, and social lives. The spectrum to which they grant access is a scarce resource, and whether an ESL should be renewed is an important issue for licensees, prospective alternative users of the spectrum, the ACMA, the broader communications sector and portfolio, and for all Australians who are end-users of the services provided through use of the relevant spectrum.

The ACMA was recently empowered to consider applications for renewal of spectrum licences and the long-term public interest. The ESL process will be the first time the ACMA has used these powers.

We have consulted widely and designed the ESL process to be as transparent as possible in terms of decision making and the factors we have considered in assessing options for the future use of ESL spectrum.

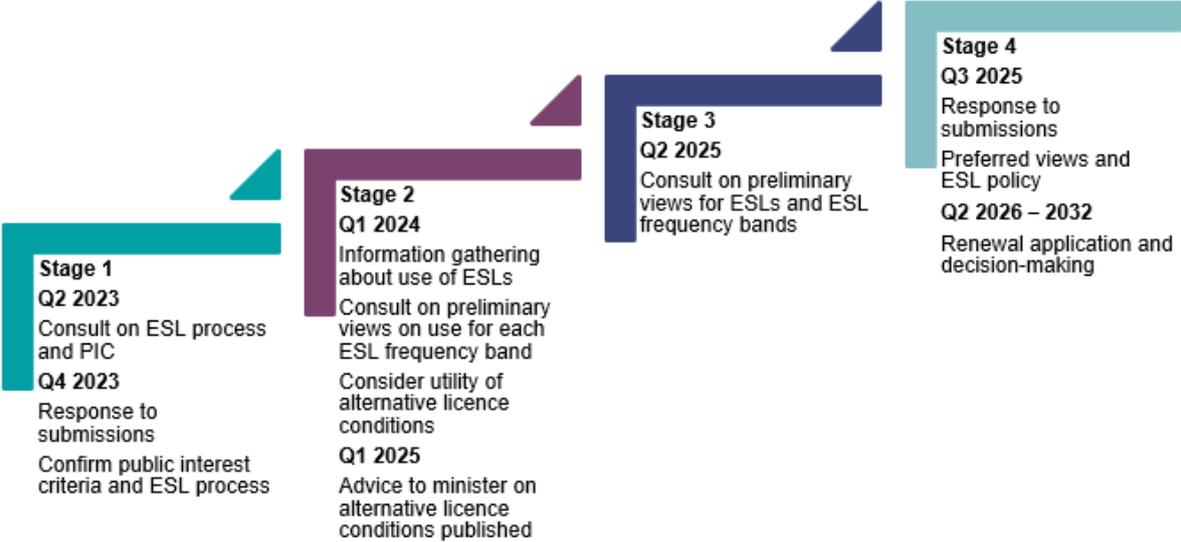
The ESL process

The outcomes of the ESL process will have significant impacts for stakeholders, downstream markets and end users. We have applied a 4-stage process to considerations of ESLs. This staged approach is intended to provide stakeholders with transparency and confidence about the matters we will consider when assessing the future use of ESL spectrum.

A key feature of our staged approach to ESLs is providing stakeholders with progressively greater levels of clarity and confidence (based on the best available information at the time) about the policy framework in which renewal applications will be considered.

The process is consultative, with multiple opportunities for stakeholders to provide feedback on and shape the public-interest-based policy and decision-making ESL framework.

Figure 1: ESL process



Stage 1 of the ESL process was completed in December 2023, which finalised the ESL framework and the 5 public interest criteria that underpin the progressive development of a policy and decision-making framework and our consideration of the long-term public interest.

Stage 2 was completed in Q1 2025 and principally focused on gathering information from stakeholders on how current and future use of spectrum covered by ESLs promotes, or could promote, the long-term public interest. Stage 2 also involved the development of advice to the Minister for Communications on the utility of alternative licensing conditions to achieve specified objectives including spectrum utilisation and mobile network coverage.

We provided the minister our advice in November 2024. In a letter dated 28 February 2025, the minister noted our considered views on alternative licensing conditions and proposal for a demand-driven localised secondary licensing framework and asked us to work with the Department of Infrastructure, Transport, Regional Development, Communications and the Arts in further exploring the merits of the proposal. We published [our advice](#), a [report we commissioned from PolicyTracker](#) and the [minister’s response](#) on 6 March 2025.

We are now commencing stage 3, which involves consulting on our preliminary views on a range of matters relating to ESLs, the spectrum covered by ESLs and the long-term public interest. Preliminary views are designed to be consultative, giving stakeholders an opportunity to provide comment and feedback, which we will consider in the development and refinement of preferred views as part of stage 4. Stage 4 is expected to start in Q3 2025. We will publish our preferred views, which constitute the ESL policy and decision-making framework. This will assist licensees to begin applying for the renewal of ESLs in the 850 MHz and 1800 MHz bands from 18 June 2026.

Public interest criteria

We have developed 5 public interest criteria to guide our consideration of the long-term public interest derived from the spectrum, and to assist stakeholders in framing their engagement with the ESL process (that is, in making submissions to consultations and, ultimately, in applying for renewal):

1. Facilitates efficiency
2. Promotes investment and innovation
3. Enhances competition
4. Balances public benefits and impacts
5. Supports relevant policy objectives and priorities.

We provided stakeholders information on how we may consider each of the criteria as part of [our finalised framework and response to submissions](#) in stage 1. This has been reproduced at Appendix A with some updates to reflect changes to policy priorities and objectives.⁹

Relevant policy objectives

Ministerial policy statement

The minister has made the [Radiocommunications \(Ministerial Policy Statement – Expiring Spectrum Licences\) Instrument 2024](#) (the ESL MPS), which specifies 5 Australian Government communications policy objectives that we must consider in designing and enacting the ESL process. These objectives, in no order of priority, are:

- Supporting service continuity for end users, particularly where no alternative service is available.
- Facilitating opportunities for new entrants and use cases, including for low Earth orbit satellites (LEOsats).
- Connectivity and investment in regional and remote areas to deliver improved services to end users.
- Promote competition.
- Capacity for sustained investment and innovation.

These policy objectives are specified in the ESL MPS to apply to ESLs used for mobile and fixed WBB, and which are held by the 3 mobile network operators (MNOs) and NBN Co. The objectives are not intended to apply to ESLs used for TOB in the 2.5 GHz mid-band gap, or in support of rail communications services in the 1800 MHz band.

Many of the considerations relevant to these objectives are also applicable to, or reinforce, the public interest criteria. We have therefore incorporated these objectives into the public interest criteria where relevant. We have updated some of the text at Appendix A to more directly identify how we have taken these policy objectives into consideration as part of the public interest criteria.

Where relevant, we expressly identify where we have had regard to specific objectives in the ESL MPS, and how these have informed our preliminary views. We do so in the tables below where we summarise our views on ESL use-cases and the public interest, and in preliminary paper 2, where specific objectives in the ESL MPS are identified as being relevant to our

⁹ This also includes minor changes to language to reflect other developments since the initial publication of the information in December 2023, such as updating references to the ESL MPS to indicate that it has now been made.

consideration of options on outcomes for each ESL band. This approach reflects the minister's expectations about how we should handle the policy objectives.¹⁰

We note that the [Radiocommunications \(Ministerial Policy Statement – 3.4–4.0 GHz\) Instrument 2022](#) (the 3.4 GHz MPS) is also currently in place. The minister has [previously stated](#) an intention to repeal this instrument following the conclusion of the allocation processes underway within that band.

Statement of Expectations

In December 2023, the [minister wrote to the Chair of the ACMA](#) expressing support for our public interest criteria. The minister identified several priorities contained with the ACMA's [2022 Statement of Expectations](#) (SoE) relevant to our consideration of ESLs, and of relevance to the 5th criterion, 'supports relevant policy objectives and priorities'.

In December 2024, the minister issued a new [SoE](#). While the 2024 SoE features several changes and updates from the 2022 SoE, the priorities identified by the minister as relevant to our ESL work remain broadly consistent.

We have therefore updated our public interest criteria at Appendix A to account for changes to the updated SoE priorities, which are:

- promoting technology neutral, simple and pragmatic frameworks that facilitate early adoption of new and emerging technologies, such as LEOsat enabled D2D technologies, while providing safeguards for consumers and small businesses
- supporting government policies related to regional, rural and remote Australia including by having regard to relevant ministerial policy statements in the planning and allocation of spectrum to support innovation and competition in these areas
- promoting the long-term public interest derived from spectrum, including the benefits of technological developments that improve spectrum use and efficiency.

Universal service obligation reform and universal outdoor mobile obligation

The government has announced proposals to reform the universal service obligation (USO) and introduce a [universal outdoor mobile obligation \(UOMO\)](#).

The proposed UOMO would require MNOs to provide access to mobile voice and SMS services on an Australia-wide basis. The objectives of the policy are to expand Triple Zero access for Australians across the nation, expand outdoor voice and SMS coverage into existing mobile black spots, and improve the availability of mobile signals during disasters and power outages. There is an expectation that this capability would be enabled by LEOsat D2D technology, which relies on access to a range of spectrum licences, some of which are subject to the ESL process.

ESLs with national footprints, that is, those in the 700 MHz, 850 MHz and 2.5 GHz bands, as well as spectrum licences in the 850/900 MHz band not subject to the ESL process, are likely to be the most conducive to facilitating initial deployments of LEOsat D2D services using MNO spectrum. Should the UOMO reforms be progressed and implemented, we will

¹⁰ In the ESL MPS, the minister notes that 'The order that the policy objectives are listed in this Ministerial policy statement do not denote an order of precedence. However, in delivering its decisions, views or positions, the ACMA should endeavour to explain how it took into consideration the different policy objectives as well as any other relevant considerations.'

consider any implications for our views on the long-term public interest and ESL decision-making.

Next steps: ESL stage 4 – preferred views

Throughout this consultation, we identify preliminary views on a range of matters relating to ESLs, the spectrum covered by ESLs, and the long-term public interest.¹¹ Feedback received will inform our final, preferred views that will be released as stage 4 of the ESL process.

Preferred views will constitute our ESL policy and decision-making framework. We will use this framework when considering renewal applications and the long-term public interest.

We must also consider matters specific to an individual licence when making decisions. This includes any relevant circumstances and considerations that warrant departing from the general policy framework. For example:

- where we have a preferred view for a band not to renew licences, but consider that a particular licence may be used for a different use-case that, on balance, promotes the long-term public interest and should be renewed, we may depart from our preferred view for that band and renew that particular licence
- where we have a preferred view for a band to renew licences but consider that a particular licence is unlikely to be used at all, we may depart from our preferred view for that band and refuse to renew that particular licence.

Preferred views will ultimately reflect information available at a point-in-time, and we may need to re-evaluate them over time. This may particularly be the case for bands due to expire in later tranches, such as ESLs in the 2 GHz band. To ensure that we give all licensees the same levels of confidence, we will update and consult on preferred views as necessary.

Preliminary views on incumbent use-cases

A key part of considering whether ESLs should be renewed is examining whether the spectrum is currently being used, and whether it will likely continue to be used in the future, in a way that promotes the long-term public interest. We have therefore considered each incumbent use-case in the context of the public interest criteria and formed a preliminary view on incumbent use-cases and the long-term public interest.

The incumbent use cases are wide-area wireless broadband (WA WBB), fixed wireless access (FWA), rail communications, and television outside broadcast (TOB).

Table 1 identifies our preliminary view on whether each incumbent use-case is promoting, and is likely to continue to promote, the long-term public interest.

Tables 2–5 summarise our analysis of each use-case against the public interest criteria. We also identify where one or more particular communications policy objectives specified in the ESL MPS is especially relevant for our assessment of that use-cases' promotion of the long-term public interest.¹²

We are aware of competing and complementary demand from localised WBB use-cases for ESL spectrum currently licensed to the MNOs and primarily used for WA WBB, and complementary demand from defence use-cases for ESL spectrum currently licensed to the broadcasters and primarily used for TOB.¹³ We have summarised how addressing this competing and complementary demand for ESL spectrum may promote the long-term public interest criteria compared to WA WBB and TOB in Tables 2 and 5.

We did not receive any specific expressions of competing or complementary demand for ESL spectrum used for FWA by NBN Co., and this is reflected in Table 3.

At this time, we consider that there is likely competing demand for 1800 MHz ESL spectrum used for rail communications from localised or WA WBB use-cases.¹⁴ Overall, though, we consider that the best long-term use for this spectrum is unclear. Table 4 therefore does not compare the long-term public interest derived from use of the spectrum for rail communications to the long-term public interest derived from WBB in this band.

¹² We have identified relevant policy objectives in tables 2 and 3 that relate to the WA WBB and FWA use-cases, but not in tables 4 and 5 as these relate to the rail communications and TOB use-cases to which the ESL MPS does not apply.

¹³ Competing demand is demand that relates to spectrum currently in use or planned for use and where satisfying the demand would result in denial or degradation of an existing service. Complementary demand is demand that relates to spectrum that is unused and where another service could be accommodated without impacting existing or planned services.

¹⁴ 1800 MHz rail ESLs cover capital cities, meaning that they are likely too small to accommodate complementary demand.

Table 1: Preliminary views on whether incumbent use-cases are promoting the long-term public interest

Use-case	Relevant licensees	Use-case definition	Preliminary view
WA WBB	Optus, Telstra, TPG	Wide-area wireless broadband networks, primarily to support national mobile voice and data services but also including complementary and related use-cases like fixed wireless, internet-of-things (IoT) and LEOsat D2D.	WA WBB promotes, and is likely to promote, the long-term public interest derived from the use of the spectrum.
FWA	NBN Co	Wide-area wireless broadband networks that primarily support wholesale internet access.	FWA promotes, and is likely to promote, the long-term public interest derived from the use of the spectrum.
Rail communications	Sydney Trains, VicTrack, Queensland Rail (QLD Rail), the Public Transport Authority of Western Australia (PTA), South Australian Department of Infrastructure and Transport (DIT)	Voice, signalling and other control communications relevant to the operation of rail networks.	Rail communications promote and are likely to promote, the public interest derived from the 1800 MHz band in the short-to-medium term. In the long-term, rail communications are expected to transition to arrangements in the 1900 MHz band. This will likely mean that other use-cases may be more conducive to promote the long-term public interest from the use the 1800 MHz band.
TOB	Australian Broadcasting Corporation (ABC), Channel Seven, Nine Network and Network Ten	Communications to facilitate production of television, such as coverage of live events outside of a production studio.	TOB promotes, and is likely to promote, the public interest derived from the 2.5 GHz mid-band gap in the short-to-medium term. In the long-term, there is uncertainty about how TOB will continue to be delivered and its spectrum requirements. This limits confidence in any views about long-term public derived by TOB from the mid-band gap.

Table 2: Summary of views on how the WA WBB use-case relates to the public interest criteria and the ESL MPS

Public interest criteria	Preliminary view
<p>Facilitates efficiency</p>	<p>WA WBB enables all mobile phone services in Australia. WA WBB use of ESL spectrum has delivered significant social and economic benefits for end-users across Australia over the past several decades and will likely continue to do so in the long-term. (ESL MPS: Capacity for sustained investment; Supporting service continuity)</p> <p>Continuous investment in, and deployment of, successive generations of increasingly efficient mobile technology across Australia has made spectrum more productive. This has facilitated more data intensive applications over mobile networks, delivering greater social connectivity and economic productivity in an increasingly digital society. (ESL MPS: Connectivity and investment, Capacity for sustained investment)</p> <p>Refarming spectrum for new generations of technology, equipment upgrades, defragmentation, consolidation, and market developments (like active sharing and LEOsat D2D services) will likely continue to increase benefits produced from spectrum, particularly in regional, rural and remote areas. (ESL MPS: Facilitating opportunities, Connectivity and investment, Capacity for sustained investment)</p> <p><i>Competing demand</i> Localised WBB services can make efficient use of spectrum but are unlikely to offer the broad economic and social benefits associated with WA WBB.</p> <p><i>Complementary demand</i> Facilitating localised WBB use cases that do not adversely affect WBB networks and end-users can increase efficient use of the spectrum. This is most likely to be possible in regional and remote areas where spectrum is unused, where localised WBB can provide opportunities for alternative forms of connectivity. (ESL MPS: Supporting service continuity, Facilitating opportunities, Connectivity and investment)</p>
<p>Promotes investment and innovation</p>	<p>WA WBB has been conducive to ongoing investment and innovation in the use of ESL spectrum over the past several decades and will likely continue to do so. Incumbents have invested in and deployed new generations of technologies and infrastructure; active sharing and LEOsat D2D services are likely to drive new investment and innovation.</p> <p>This investment and innovation in the use of the spectrum has benefited end-users by facilitating more efficient spectrum use and enhanced mobile service offerings, such as increased data speeds and data capacity. (ESL MPS: Connectivity and investment, Capacity for sustained investment)</p> <p>Developments like the Optus/TPG Multi-Operator Core Network agreements (MOCN) have the potential to accelerate investment in 5G services, particularly in regional areas, and expand consumer choice.</p> <p>LEOsat D2D services have the potential to expand service offerings, and to provide a connectivity to end-users in areas not currently served by terrestrial mobile networks.</p>

Public interest criteria	Preliminary view
	<p>(ESL MPS: Facilitating opportunities, Connectivity and investment, Capacity for sustained investment)</p> <p><i>Competing demand</i> Incumbents have demonstrated sustained investment in the use of ESL spectrum, including in newer and better generations of technology. Re-allocation of spectrum for competing localised WBB services would likely not promote greater investment or innovation.</p> <p><i>Complementary demand</i> Complementary demand for localised WBB in unused parts of ESL spectrum could promote targeted investment and innovation.</p> <p>(ESL MPS: Facilitating opportunities, Connectivity and investment, Capacity for sustained investment and innovation)</p>
Enhances competition	<p>The majority of the Australian population can choose between 3 public mobile networks, and over 40 brands. 5G rollout is progressing in regional areas, and LEOsat D2D developments and the Optus/TPG MOCN agreements have the potential to boost competition in regional areas. (ESL MPS: Promote competition; Connectivity and investment)</p> <p>The WA WBB use-case is enhancing retail and infrastructure competition, with competition strongest in metropolitan areas. Optus and Telstra exert competitive pressure on each other outside of metropolitan areas. (ESL MPS: Promote competition)</p> <p>There are large parts of Australia where only Telstra’s network is available and Telstra holds a dominant position in the broader Australian market. The Optus/TPG MOCN has the potential to accelerate Optus’s investment in regional areas, enhancing its competitive position and also enable TPG, and MVNOs carried over TPG’s network, to better participate and compete in regional areas.</p> <p>LEOsat D2D services have the potential to enhance competition between MNOs through enhanced product differentiation, for example, by expanding coverage and service availability in areas of low or no service. (ESL MPS: Facilitating opportunities, Connectivity and investment, Promote competition)</p> <p><i>Competing demand</i> National licensing offers most Australians a choice of 3 networks and a range of brands. Competing demand for localised WBB services would not offer these broad benefits, and re-allocation of ESL spectrum for this demand would be unlikely to enhance competition.</p> <p><i>Complementary demand</i> Satisfying complementary demand for ESL spectrum could enhance competition in downstream markets (for example, enterprise markets) by enabling greater access to spectrum and reducing barriers to entry for place-based and localised use-cases. (ESL MPS: Facilitating opportunities, Promote competition)</p>
Balances public	<p>WA WBB produce considerable social and economic benefit by providing end-users with access to communications services, internet connectivity, and public access to emergency services. Ongoing access to ESL spectrum where it is used to provide services will facilitate continuity of mobile services</p>

Public interest criteria	Preliminary view
<p>benefits and impacts</p>	<p>across and Australia, and the associated benefits to end-users. Certain bands in scope of the ESL process are candidates for LEOsat D2D services, which have the capacity to provide more connectivity to more Australians. (ESL MPS: Supporting service continuity, Facilitating opportunities, Connectivity and investment)</p> <p><i>Competing demand</i> Satisfying competing demand would necessitate re-allocation of ESL spectrum that is currently being used for WA WBB. This could undermine service continuity, degrade existing services and limit consumer choice.</p> <p><i>Complementary demand</i> Satisfying complementary demand could provide opportunities for new and innovative services where spectrum is unused, enabling the spectrum to be put to a productive use generating social or economic benefit for end-users. (ESL MPS: Supporting service continuity, Facilitating opportunities, Connectivity and investment)</p>
<p>Supports relevant policy objectives</p>	<p>ESL spectrum, particularly low-band, is used in the provision of all mobile services in regional, rural and remote areas. Ongoing access to ESL spectrum will facilitate continuity of service across regional, rural, and remote Australia, supporting end-users with limited alternative consumer choice. (ESL MPS: Supporting service continuity, Connectivity and investment)</p> <p>Optus and Telstra have supported, and will likely continue to support, policy objectives relating to regional, rural and remote Australia as evidenced by their historical participation within these areas.</p> <p>TPG does not currently participate extensively in regional areas but plans to increase its presence through the Optus/TPG MOCN. (ESL MPS: Connectivity and investment)</p> <p>There is broad consensus that the financial, regulatory and administrative costs versus potential returns associated with regional, rural and remote deployment disincentivise investment, competition and connectivity in regional Australia. WA WBB services in regional areas may be enhanced through innovations such as the Optus/TPG MOCN and complemented by LEOsat D2D services. (ESL MPS: Facilitating opportunities, Connectivity and investment)</p> <p><i>Competing demand</i> Satisfying competing demand for ESL spectrum currently used for WA WBB through re-allocation would likely not support relevant policy objectives as it could undermine service continuity and compound congestion issues experienced in regional, rural and remote areas.</p> <p><i>Complementary demand</i> Satisfying complementary demand for ESL spectrum could potentially support relevant policy objectives by providing alternative users with opportunities to deploy services in regional, rural and remote areas using unused spectrum. (ESL MPS: Supporting service continuity, Facilitating opportunities, Connectivity and investment)</p>

Table 3: Summary of views on how the FWA use-case relates to the public interest criteria and ESL MPS

Public interest criteria	Preliminary view
Facilitates efficiency	<p>ESL spectrum underpins all of NBN Co’s FWA services. FWA services produce considerable social and economic benefits spectrum by facilitating internet connectivity and downstream applications for end-users across Australia. (ESL MPS: Connectivity and investment)</p> <p>FWA is NBN Co’s selected solution, in connection with fibre and satellite broadband services, to fulfilling its requirements as the default Statutory Infrastructure Provider to provide wholesale internet access across Australia. FWA is generally deployed in peri-urban and regional areas where it is the most efficient and feasible solution for the environment.</p> <p>NBN Co has demonstrated ongoing commitment to expanding, optimising and upgrading deployed technologies, increasing spectral efficiency, utilisation and the benefits produced from the spectrum, enabling the provision of higher-speed and capacity services. (ESL MPS: Connectivity and investment, Capacity for sustained investment)</p> <p>NBN Co has also realised efficiencies for itself and the broader use of ESL spectrum by other licensees through participating in the secondary market, substantively changing how underutilised parts of the spectrum were used and engaging in defragmentation.</p>
Promotes investment and innovation	<p>NBN Co has invested heavily in the use of ESL spectrum, recently concluding a \$750 million upgrade and expansion program for its satellite and FWA networks.</p> <p>This has resulted in 120,000 premises previously within the Sky Muster footprint now being covered by the FWA footprint, with FWA services being made available to over 800,000 premises across Australia. These upgrades have also enabled NBN Co to uplift download speeds on some existing wholesale plans and offer new higher-speed broadband services over its FWA network to the benefit of end-users. (ESL MPS: Connectivity and investment, Capacity for sustained investment)</p>
Enhances competition	<p>NBN Co’s wholesale-only mandate enables competition in the provision of internet services amongst retail service providers.</p> <p>NBN Co likely exerts competitive pressure on services marketed as alternatives to the NBN, such as broadband services carried over mobile networks, other FWA networks, and satellite networks. (ESL MPS: Promote competition)</p>
Balances public benefits and impacts	<p>The NBN is a source of significant economic uplift, particularly in industries experiencing increasing digitisation, and positive social benefits across connectivity, employment, education, health, and First Nations inclusion outcomes.</p> <p>NBN FWA services are typically offered in peri-urban and regional areas, likely meaning that the social and economic benefits of attributable to FWA services are more pronounced for end-users in these areas. According to the 2024 Regional Telecommunications Review, the NBN has had a transformative impact on end-users in these areas.</p>

Public interest criteria	Preliminary view
	<p>(ESL MPS: Connectivity and investment)</p> <p>ESL spectrum is used in the provision of all FWA services on the NBN. Continued access to this spectrum for FWA will enable continuity of these services and the associated benefits for end-users.</p> <p>(ESL MPS: Supporting service continuity)</p>
Supports relevant policy objectives and priorities	<p>FWA is deployed and supports connectivity in peri-urban and regional areas, consistent with the geographic area of licences held by NBN Co.</p> <p>Ongoing access to ESL spectrum to provide FWA services in regional areas will enable continuity of internet services for end-users, and continue to support the social and economic benefits enabled by internet access.</p> <p>(ESL MPS: Supporting service continuity, Connectivity and investment)</p> <p>NBN Co investment in its FWA network has resulted in expanded availability and enhanced connectivity, and may impact competition from alternative services in the long-term.</p> <p>(ESL MPS: Connectivity and investment, Promote competition, Capacity for sustained investment)</p>

Table 4: Summary of views on how the rail communications use-case relates to the public interest criteria

Public interest criteria	Preliminary view
Facilitates efficiency	<p>Use of ESL spectrum for rail communications enables considerable economic and social benefit in some metropolitan areas through the safe and efficient operation of metropolitan rail networks underpinning both freight and passenger rail services.</p> <p>Use of ESL spectrum to deploy active services varies between licensees, meaning that allocative and productive efficiencies vary. There is currently clear evidence of use in Melbourne and Sydney, increasing or planned utilisation in Perth and Brisbane, and no identified or planned use in Adelaide.</p> <p>In the long-term, rail communications will likely continue to enable considerable economic and social benefit from the 1900 MHz band, rather than ESL spectrum, and it is unclear whether rail communications will remain an efficient use of 1800 MHz band spectrum.</p>
Promotes investment and innovation	<p>Rail licensees have invested, or are investing, in rail communications utilising ESL spectrum, consistent with the observations about where licensees have used or plan to use ESL spectrum.</p> <p>In the medium-term, following deployment of services in Brisbane and Perth, we expect that investment will focus on maintenance of existing networks utilising ESL spectrum, until it reaches end-of-life status.</p> <p>In the long-term, consistent with expectations around the transition to new rail communications technologies, we expect investment will be directed towards deploying and upgrading rail communications networks using the 1900 MHz band, rather than the 1800 MHz band. This will enable rail licensees and end-</p>

Public interest criteria	Preliminary view
	users to benefit from increased efficiencies enabled by new technologies, and to continue to promote the public interest effectively.
Enhances competition	Rail licensees have limited opportunities to enhance competition as the spectrum is not used to produce commercial retail products. Consequently, this criterion did not weigh heavily in our overall consideration of the public interest of the rail communications use case.
Balances public benefits and impacts	<p>The rail communications use-case produces significant public benefit through use of ESL spectrum, facilitating the safe operation of rail networks within metropolitan areas. Rail enables a broad range of economic activities with its services through freight and passenger transportation.</p> <p>In the long-term, we expect these benefits, and the public interest, will be facilitated by access to the 1900 MHz band to deploy new rail communications technologies.</p>
Supports relevant policy objectives and priorities	The rail communications use-case can promote outcomes in the ACMA's SoE identified by the minister as being relevant to this criterion – namely promoting of investment and innovation, and supporting the long-term public interest derived from spectrum. Rail communications use of the spectrum provides public benefit and enables efficiency as spectrum-supported services are provided by most licensees.

Table 5: Summary of views on how the TOB use-case relates to the public interest criteria

Public interest criteria	Preliminary view
Facilitates efficiency	<p>Broadcasters have demonstrated productive use of ESL spectrum, particularly in metropolitan areas, by TOB, producing social and economic benefit through the coverage of breaking news and live events. There is comparatively infrequent and sporadic use of ESL spectrum in regional and remote areas, reflecting that TOB in these areas largely provides coverage of planned regional events and breaking news.</p> <p>Licence conditions applicable to licences held by broadcasters limit use of licensed spectrum to TOB, preventing secondary market sharing or trading resulting in more intensive and efficient use.</p> <p>In the long-term, it is unclear whether TOB will remain an efficient use of ESL spectrum. The service's spectrum requirements may change as new technologies and delivery methods emerge.</p> <p><i>Complementary demand</i></p> <p>Defence has expressed an interest in utilising the 2.5 GHz mid-band gap on a shared basis with TOB users outside of metropolitan areas. Shared use could mean more efficient use of the 2.5 GHz mid-band gap.</p>

Public interest criteria	Preliminary view
<p>Promotes investment and innovation</p>	<p>Broadcasters have demonstrated historical investment in use of spectrum, particularly in metropolitan areas, through the deployment and maintenance of transmitter equipment and receiver sites.</p> <p>In the long-term, further major investment in TOB use of ESL spectrum is uncertain. Current technologies and equipment utilising are fit-for-purpose, and new TOB technologies and delivery methods may reduce use of the 2.5 GHz mid-band gap.</p> <p><i>Complementary demand</i> Satisfying complementary demand could increase use, investment and innovation in use of the 2.5 GHz mid-band gap.</p>
<p>Enhances competition</p>	<p>The TOB use-case is broadly non-competitive as it does not directly produce consumer-facing retail services and there is a degree of collaboration between licensees through sharing receiver sites around metropolitan areas.</p> <p>However, TOB contributes to the broadcasters' ability to compete in the media and content markets by facilitating coverage of news, live events and sports.</p>
<p>Balances public benefits and impacts</p>	<p>TOB facilitates coverage of news and events important to the public, such as coverage of bushfires. This contributes to an informed and entertained society.</p> <p>In the short-to-medium term, ongoing access to ESL spectrum for TOB will enable continued coverage of news, live events and sports, utilising existing equipment and infrastructure.</p> <p>In the longer-term, spectrum requirements for TOB are less clear.</p> <p><i>Complementary demand</i> Enabling shared use of the band with defence use-cases could contribute to public benefit derived from the use of the spectrum without impacting the benefit derived by TOB use-cases.</p>
<p>Supports relevant policy objectives and priorities</p>	<p>The TOB use-case aligns with policy priorities in the SoE relevant to ESL, including promoting the long-term public interest derived from the spectrum, outcomes in regional areas and safeguarding the interests of consumers.</p>

Preliminary views on options for ESL frequency bands

There are broadly 3 options available to us when dealing with ESLs:

- renewal
- partial renewal¹⁵
- non-renewal and re-allocation.

To identify a preliminary view on the option for each frequency band likely to promote the long-term public interest, we have considered how each frequency band has been used and is proposed to be used, in connection with our preliminary views on incumbent use-cases, and the public interest criteria.

Table 6 summarises our preliminary views on which option for ESLs is likely to promote the long-term public interest derived from each frequency band covered by ESLs, where the spectrum is used for a specified use-case.

Table 6: Our preliminary views on options for each ESL frequency band likely to promote the long-term public interest

Band	Primary use-cases	Favoured option
700 MHz	WA WBB (initial LEOsat D2D candidate band)	Renewal
850 MHz	WA WBB (initial LEOsat D2D candidate band)	Renewal
1800 MHz	WA WBB	Renewal
1800 MHz	Rail communications	Non-renewal and transition to apparatus licensing
2 GHz	WA WBB	Renewal
2.3 GHz	WA WBB and FWA	Renewal for licences used for WA WBB and FWA Further information is sought regarding Telstra's proposed use-case, particularly concerning any effects on enhancing competition
2.5 GHz	WA WBB (initial LEOsat D2D candidate band)	Renewal
2.5 GHz mid-band gap	TOB	Non-renewal and transition to apparatus licensing

¹⁵ Partial renewal is taken to mean renewal of a licence with reduced bandwidths of spectrum and/or geographic areas included in the renewed spectrum licence. For example, renewing an Australia-wide spectrum licence so that the renewed licence only applies to metropolitan and regional areas.

Band	Primary use-cases	Favoured option
3.4 GHz	WA WBB and FWA	Renewal Further information is sought about options to facilitate defragmentation

ESL frequency bands used for WA WBB and FWA

Low-band frequencies (700 MHz and 850 MHz)

Our preliminary view is that renewal of spectrum licences in the 700 MHz and 850 MHz bands, where they are used for WA WBB, is likely to promote the long-term public interest derived from the spectrum. Use of these frequency bands for WBB is well supported by international harmonisation and standardisation with extensive available equipment ecosystems. These bands, due to their propagation characteristics, are heavily relied upon by the MNOs to provide wide-area mobile coverage and in-building penetration.

While mobile coverage and competition remain key issues in regional, rural and remote Australia, continued rollout, the Optus/TPG MOCN and the development of LEOsat D2D services have the potential to improve coverage and service outcomes relating in these areas. We have therefore considered how each option relating to low-band spectrum affects the potential for each licensee to realise these outcomes.

There is a degree of competing and complementary demand for low-band spectrum, largely to support localised WBB solutions in regional, rural and remote Australia that may also support connectivity outcomes relating to these areas.¹⁶

We do not consider that non-renewal and re-allocation of spectrum currently used for WA WBB to satisfy competing demand from localised WBB use-cases would promote the long-term public interest. Rather, it could undermine the current and planned operation of mobile networks.

At this time, we also think satisfying complementary demand through partial renewal may undermine the long-term public interest. This is because partial renewal would result in fragmentation of nation-wide low-band licences, limiting their use to support provision of LEOsat D2D services on a national-basis, and potentially limiting a licensee's future optionality to deploy competitive services.¹⁷

We consider that the demand-driven secondary licensing framework set out in our [advice to the minister on alternative licensing conditions](#) could play a role in facilitating place-based access to licensed spectrum.

¹⁶ We have categorised alternative demand into 'competing' demand that would lead to denial or interference with an existing or planned, and 'complementary' demand that could be facilitated without impacting existing or planned services, such as where the spectrum is unused and likely to remain so by an incumbent licensee.

¹⁷ We note that TPG has indicated to us that it intends to use a mixture of low-band spectrum to facilitate D2D services in Australia. Telstra has also indicated to us that while it currently plans to use the 2.5 GHz band to enable D2D services, it may utilise additional or other bands in the future, including low-band spectrum, as these services continue to evolve.

Mid-band frequencies (1800 MHz, 2 GHz, 2.3 GHz, 2.5 GHz and 3.4 GHz)

Our preliminary view is that renewal of mid-band spectrum licences, where they are used for either WA WBB or FWA, is generally likely to promote the long-term public interest derived from the spectrum. These frequency bands are widely used by the MNOs to provide capacity and speed to their mobile services, and by NBN Co to provide internet connectivity in peri-urban and regional areas.

Use of these frequency bands for WBB and FWA is well supported by international harmonisation and standardisation with extensive available equipment ecosystems. These frequency bands will likely be used to continue to support data capacity over mobile and fixed wireless networks, including potential benefits associated with continued 5G rollout and the Optus/TPG MOCN. The 2.5 GHz band, which has been allocated on a national-basis, may also be used to initially support LEOsat D2D services on a national-basis and address regional and remote connectivity issues, with Optus and Telstra to commence testing D2D services in partnership with SpaceX using the 2.5 GHz band.¹⁸

While there is also likely competing and complementary demand for this spectrum from localised WBB use-cases, we did not receive express interest in this spectrum through Stage 2 of the ESL process. We have made spectrum available to facilitate localised use-cases, particularly in regional and remote areas, under apparatus and class licensing arrangements, which likely has satisfied demand in some of these areas.

While our preliminary view is that renewal of spectrum licences across mid-band frequencies will likely promote the long-term public interest, we are seeking further information regarding issues relating to 2 frequency bands.

2.3 GHz band

Telstra currently holds all available 2.3 GHz spectrum in remote areas and proposes to use the 2.3 GHz band for private networks, rather than to support its mobile network. Telstra has not indicated where and when it will use the band for this use-case, or the likely extent of its use.

Telstra's proposed use of the 2.3 GHz band raises different public interest considerations compared to the WA WBB use-case and proposed localised WBB use-cases from smaller operators.

We do not currently have sufficient information to fully consider whether renewal of these licences is likely to promote the long-term public interest and are seeking further information from stakeholders.

3.4 GHz band

The 3.4 GHz band is currently subject to a degree of fragmentation, with licensees having non-contiguous holdings which can undermine the efficient use of the spectrum. The ESL process presents options for facilitating defragmentation, including re-allocation of the band.

We are seeking stakeholder views on the extent to which fragmentation is impacting the efficient use of the band, the willingness of industry to undertake defragmentation and any barriers to achieving it, and the pros and cons of each option in achieving defragmentation.

¹⁸ SpaceX has notified the Federal Communications Commission about planned testing of LEOsat D2D services in Australia using spectrum including in 2.5 GHz ESLs held by Optus and Telstra.

ESL frequency bands used for rail communications and TOB

Our preliminary view for both the 1800 MHz band and 2.5 GHz mid band gap is to transition rail communications and TOB services to apparatus licensing frameworks, and continue to provide access to each band over the medium term. This would mean non-renewal of spectrum licences, and instead issuing new apparatus licences.

We are confident that both rail communications and TOB incumbents will continue to use these bands in a manner that promotes the public interest in the medium term:

- Rail communications enable sustainable, efficient and safe rail networks within metropolitan areas that provide significant social and economic value.
- TOB enables a connected, informed and entertained Australia through the production of broadcast television and coverage of breaking news, live events and sports.

Apparatus licensing and our broader planning arrangements will provide licensees with confidence that their investments are not stranded, and that services can continue to operate without disruption. These arrangements will also give licensees and us greater flexibility to consider and respond to future developments in spectrum management, equipment development and service delivery.

In the longer-term, technology and broader spectrum management developments are likely to mean that alternative uses and users will better promote the public interest derived from either frequency band. Alternative methods of service delivery, or alternative spectrum arrangements that align with international developments mean that these services will continue to be provided, but with different spectrum.

Specifically, there will be limited equipment support for rail communications technologies in the 1800 MHz band beyond the 2030s, with users expected to transition to a newer technology at around this time. Crucially, this newer generation of technology will utilise the 1900 MHz band rather than the 1800 MHz band.¹⁹

While TOB currently relies upon access to the 2.5 GHz mid band gap in connection with other frequencies in the 2 GHz and 2.2 GHz bands, how TOB is delivered may change in the future, altering requirements for the 2.5 GHz mid-band gap. Transitioning TOB arrangements in the 2.5 GHz mid band gap to apparatus licensing will also make licensing arrangements for TOB more consistent across all relevant bands.

¹⁹ We have taken steps to identify and plan part of the 1900 MHz frequency band for the rail communications use-case.

Preliminary views on licence duration and renewal statements

When renewing a spectrum licence, we must decide the duration of the new licence and include a statement specifying whether the licence can be renewed, renewed if specified circumstances exist, or must not be renewed (renewal statement).

If a renewal statement allows for renewal, the licence must also specify a period when a licensee can apply for renewal (renewal application period statement), and how long we have to decide whether to renew the licence in response to an application (renewal decision-making period statement). Licences that can be renewed may also include a statement to the effect that we will not renew the licence unless we are satisfied that it is in the public interest to do so (public interest statement).

Our broad preliminary view is that the future expiry processes for spectrum licences used for WA WBB or FWA that may be renewed through this ESL process should be aligned with the expiry processes for continuing spectrum licences in the 850/900 MHz and 3.7 GHz bands.

Tables 7 and 8 summarise the duration and licence statements that would be required to give effect to this view, with reasoning explored further below.

Our preliminary view is that the rail communications and TOB use-cases should be transitioned to apparatus licensing arrangements. This would require a separate consultation process to determine appropriate duration and licence statements (if any) under apparatus licensing arrangements.

Table 7: Our preliminary views on licence duration (WA WBB and FWA licences only)

Favoured option	Band	Duration of renewed licences
Renewed ESLs expire in 2044 (low-band: June 2044; mid-band: January 2044)	700 MHz	14.50 years
	850 MHz	16.03 years
	1800 MHz (excluding rail communications)	15.58 years
	2 GHz	11.27 years
	2.3 GHz	13.48 years
	2.5 GHz	14.30 years
	3.4 GHz	13.09 years

Table 8: Our preliminary view on licence statements (WA WBB and FWA licences only)

Licence statements	Favoured option
Renewal statement	Licences may be renewed
Renewal application period statement	6-month period beginning 5 years before licence expiry
Renewal decision-making period statement	2-year period beginning after application period
Public interest statement	Licence renewal must be in public interest We are also proposing to develop and maintain a separate renewal policy for spectrum licences to support public interest statements.

Licences used for WA WBB and FWA

Expiry of any renewed spectrum licences used for WA WBB or FWA should occur in 2044 in coordination with expiry timeframes for continuing spectrum licences

We have considered 2 broad options for the licence duration of any renewed ESLs used for WA WBB and FWA:

- Option 1:** 20 years (that is, the maximum duration allowed by the Act).
- Option 2:** between 11 and 16 years to align with the expiry of continuing spectrum licences in the 850 MHz, 900 MHz and 3.7 GHz bands (that is, those spectrum licences used for WBB that are not within the scope of this ESL process).

Option 2 is our favoured option, for these key reasons:

- Reduced barriers to trading.** Option 2 aligns the expiry of substitutable spectrum which can reduce barriers to trading through equalising the period in which licensees can extract value from spectrum.
- Facilitate a holistic and efficient future ESL process.** Option 2 avoids the staggered application and decision-making periods associated with Option 1 (and the current ESL process) making for a more efficient and holistic process for incumbents, stakeholders and the ACMA.
- Assess LEOsat D2D developments.** Option 2 allows us to make a timely assessment of outcomes achieved by deployment of LEOsat D2D technologies and business models, and their impacts upon spectrum licensed spectrum sooner than Option 1.
- Assess Optus/TPG MOCN outcomes.** Option 2 enables us to assess outcomes achieved by the Optus/TPG MOCN close to the time when the MOCN and associated agreements end.

Licence statements included in any renewed ESLs used for WA WBB or FWA should be aligned with those included in other spectrum licences used for WBB

Our preliminary view is that licence statements to be included in any renewed ESLs used for WA WBB or FWA are consistent with statements included in the 850/900 MHz spectrum

licences.²⁰ This would further support outcomes sought by aligning licence expiry, namely facilitating a holistic and efficient future ESL process and reducing barriers to trading. Our preliminary view is also to include public interest statements in these licences.

Proposed licence statements include:

- **Renewal statement:** licences may be renewed at the discretion of the ACMA
- **Renewal application period statement:** a 6-month period starting 5 years before the licence is due to expire
- **Renewal decision-making period statement:** a 2-year period starting after the renewal application period ends
- **Public interest statement:** the ACMA will not renew the licence unless satisfied that it is in the public interest to do so.

Stakeholder views on a renewal policy

We are also seeking views on whether stakeholders see benefits in developing a renewals policy that would set out public interest matters that we may have regard to when considering future applications for renewal of spectrum licences. This policy would provide transparency to licensees about how we are considering the long-term public interest and how licences may be treated in the future, evolving over time to reflect changes within the communications environment.

²⁰ As set out in our preliminary view paper 3, as part of this option, we have a preference to work with incumbent licensees on varying renewal application periods specified in 3.7 GHz spectrum licences so that they are aligned to this broader proposed process.

Preliminary views on pricing

Setting appropriate spectrum prices that encourage efficient allocation and use of spectrum is one of the ways we can promote the long-term public interest derived from spectrum.

Preliminary price ranges of ESL bands for WBB and FWA use

The preliminary price ranges for ESL frequency bands, assuming WBB or FWA use, are given in \$/MHz/pop terms in Table 9 below. These ranges are also informed by associated preliminary views, such as those on licence duration.

Table 9: Preliminary views on pricing for ESL frequency bands (WBB/FWA)

Band	Licence duration	Preliminary price range (\$/MHz/pop)
700 MHz	14.50 years	\$0.6055 – \$0.7405
850 MHz	16.03 years	\$0.6371 – \$0.7791
1800 MHz	15.58 years	\$0.1895 – \$0.2356
2 GHz	11.27 years	\$0.1583 – \$0.1968
2.3 GHz	13.48 years	\$0.0548 – \$0.0670
2.5 GHz	14.30 years	\$0.0566 – \$0.0692
3.4 GHz	13.09 years	\$0.1568 – \$0.1990

The preliminary \$/MHz/pop price ranges lead to a total nominal (not inflation-adjusted) price range for ESLs for WBB and FWA use of \$5.0–\$6.2 billion.²¹ This compares with previous nominal prices for these ESLs totalling around \$8.2 billion, which reflects a downward trajectory consistent with international trends in spectrum values.

The use of preliminary price ranges acknowledges the challenges involved in estimating the market value of spectrum, due to infrequent spectrum allocations and heterogeneity within the data used for our valuation methodology. We have presented preliminary price ranges with the intention to facilitate open and constructive stakeholder feedback that is not centred on specific \$/MHz/pop prices.

Preliminary views on prices for rail and TOB ESLs

We have separately considered our preliminary views on pricing for spectrum use that is not WBB or FWA, which includes rail communications services in the 1800 MHz band and TOB services in the 2.5 GHz mid-band gap. Our preliminary view for rail communications and TOB services is that the long-term public interest is likely best promoted by continued access over the mid-term to spectrum under apparatus licensing arrangements, rather than

²¹ To reach the preliminary price range of \$5.0–\$6.2 billion, for each ESL we have multiplied applicable \$/MHz/pop renewal prices and licence bandwidths with future population estimates. The population estimates take population figures from the 2021 Census date in our 'Hierarchical Cell Identification Scheme (HCIS) - List of Population Data' (available on the [ACMA website](#)) and carry them forward to renewal timing for the applicable ESL frequency band using national population growth projections.

spectrum licences. Consequently, we present pricing options consistent with the apparatus licence framework.

Table 10: Preliminary view on pricing for rail communications and TOB ESLs

Band	Preliminary views on pricing
1800 MHz (rail)	<p>Apparatus licensing arrangements to support rail communications in the 1800 MHz band have yet to be developed and would be subject to consultation. Our preliminary view is that pricing be based on the 1800 MHz band price for renewed spectrum licences (potentially with a discount applied) or the transmitter licence tax rate for 1800 MHz band PMTS Class B licences of \$0.01 per 'paired MHz' (2 x 1 MHz) per head of population.</p> <p>If spectrum licences are renewed, our preliminary pricing view is that prices should be based on the 1800 MHz band price in Table 9, which is \$0.1895/MHz/pop–\$0.2356/MHz/pop for 15.58 years. This may require adjustments for licence duration, and we note that public interest discounts were provided for these services in the previous ESL process.</p>
2.5 GHz mid-band gap (TOB)	<p>The proposed increase to the TOB network (TOBN) annual apparatus licence tax rate, assuming 10 MHz of usable spectrum in the 2.5 GHz mid-band gap is added to each TOBN licence, is \$28,502. As such:</p> <ul style="list-style-type: none"> • If spectrum licences are renewed, the price should be \$28,502 annually, or an equivalent value for a longer-term licence. • If a transition to apparatus licensing occurs, the TOBN annual apparatus licence tax rate should be increased by \$28,502 to reflect the additional spectrum available in the licence.

Pricing methodology

We have chosen a direct benchmarking methodology to estimate the market value of spectrum in ESL bands used by WBB and FWA, which has informed our preliminary views on renewal prices. We decided to use this method instead of other methods (econometrics, avoided cost modelling, iterated cost modelling and enterprise valuation modelling) because:

- it can determine a useful approximation of market value for each ESL frequency band, which aligns with our intent to apply opportunity cost pricing principles
- we have access to relevant auction data and country specific data required for the analysis
- it is relatively transparent and easy to understand, as each data point reflects the actual amount paid by operators for spectrum and is verifiable because it is based on publicly available data
- it is the simplest and most time-efficient of all the methodologies considered.

We have constructed the preliminary price ranges for each ESL frequency band based on relevant domestic and international spectrum auction results (110 benchmark valuations in 36 different countries). A detailed explanation of the preliminary pricing analysis is in our preliminary views paper 4 on pricing.

Invitation to comment

Making a submission

We invite comments on the issues set out in this consultation package.

- [Online submissions](#) can be made by uploading a document. Submissions in PDF, Microsoft Word or Rich Text Format are preferred.
- Submissions by post can be sent to:
The Manager
Expiring Spectrum Licences
Australian Communications and Media Authority
PO Box 13112
Law Courts
Melbourne VIC 8010

The closing date for submissions is COB, **Wednesday 25 June 2025**.

Consultation enquiries can be emailed to ESL@acma.gov.au.

Publication of submissions

We publish submissions on our website, including personal information (such as names and contact details), except for information that you have claimed (and we have accepted) is confidential.

Confidential information will not be published or otherwise released unless required or authorised by law.

Privacy

View information about our policy on the publication of submissions, including collection of personal information during consultation and how we handle that information.

Information on the *Privacy Act 1988*, how to access or correct personal information, how to make a privacy complaint and how we will deal with any complaints, is available in our [privacy policy](#).

Appendix A: Public interest criteria

Criterion 1: facilitates efficiency

This criterion is closely tied to the object of the Act, part of which is to promote the long-term public interest derived from the use of the spectrum in a manner that facilitates the efficient planning, allocation and use of the spectrum.

The SoE contains policy priorities we consider relevant to this criterion, specifically:

- promoting the long-term public interest derived from spectrum, including the benefits of technological developments that improve spectrum utilisation and efficiency
- promoting technology neutral, simple and pragmatic frameworks that facilitate early adoption of new and emerging technologies, such as LEOsat-enabled direct to device technologies while providing safeguards for consumers and small businesses (new technologies, in our view, are typically more efficient at using the spectrum resource).

The minister has also specified in ESL MPS that we consider ‘facilitating opportunities for new entrants and use cases, including for LEOsats’ when designing and undertaking the ESL process. We have incorporated this into our consideration of this criterion as there may be new entrants and use-cases that could use spectrum covered by ESLs in ways that are efficient and generate economic value and social benefits.

We will frame our consideration of efficiency around the concepts of productive, allocative and dynamic efficiency.²²

We also note, with closer reference to spectrum in particular, that efficient use of the spectrum involves maximising the value of outputs produced from the available spectrum, including those that are ‘public outputs’ provided by non-commercial operators.²³

Together, these concepts will allow stakeholders and the ACMA to consider technical elements of spectrum use and management, the societal benefit, and an overall long-term view on whether changes in technologies, users and uses are optimising use of the spectrum.

We consider providing a service within a geographic area covered by an ESL should be considered as a matter of efficiency. Unlike other natural resources, spectrum is a non-depletable, infinitely renewable resource, and so there is an in-principle argument that unused spectrum forgoes potential value generated in the economy.²⁴ There may be instances where unused or under-utilised spectrum is efficient or in the public interest (for example, the licensee may have future plans for that spectrum, or its limited use could be an interference-management strategy). However, we are interested in patterns of long-term unused or under-utilised spectrum – either by the licensee or considering the absence of any

²² These 3 concepts are considered to constitute Pareto or economic efficiency, whereby resources are allocated in a way that does not better one consumer or firm to the detriment of another. See Martin Cave, Chris Doyle and William Webb, *Essentials of Modern Spectrum Management*, Cambridge University Press, 2007, p. 88 and p. 169.

²³ See Mazar, *Radio Spectrum Management*, p. 128.

²⁴ Mazar, *Radio Spectrum Management*, p. 133. Similarly, the design of licences should be guided by economic efficiency, whereby a licence is considered an input and that, as an input, it should be used in a way that does not restrict the economy’s potential – see Cave, Doyle and Webb, *Modern Spectrum Management*, p. 124.

trades or third-party authorisations, as spectrum may not be being put to its most economically efficient and productive use.

We note that much of the sub-1 GHz spectrum subject to Australia-wide licensing arrangements covered by ESLs has been re-farmed for multiple generations of technology to support Australian business and consumers. This would be a positive indication of efficient use of the spectrum: the essential physical properties of the spectrum are fixed, and its productive capacity greatly depends on the type of technology used.²⁵

However, we also note that this spectrum is almost entirely allocated, and the ESL process could shape how that spectrum is used over the next 20 years. The Act provides for licensees to subdivide and trade their spectrum licences, and this arrangement can facilitate allocatively and dynamically efficient outcomes. If there is alternative demand for allocated, but underutilised, spectrum, we will consider if the current arrangements are allocatively and dynamically efficient and whether changes can facilitate efficiency through opportunities for new entrants and use-cases to use the spectrum.

Criterion 2: promotes investment and innovation

Investment and innovation are related to, and can encourage, efficient use of the spectrum.

Spectrum licences are typically optimised to support major technology milestones, such as the next generation of wireless broadband (WBB), but are also designed to be technology flexible, meaning that licensees have fewer regulatory barriers to adapt their business strategies to invest and innovate for the long-term, and quickly respond to new developments. They also provide licensees with considerable flexibility to deploy and operate equipment as necessary, subject to the technical framework, throughout the licensed spectrum space, enabling licensees to change and adapt their use over time without acquiring new licences.

Promoting investment, innovation and the adoption of new and emerging technologies, while continuing to safeguard the interests of consumers and small businesses, is a priority contained in the SoE that the minister identified as being relevant to ESLs.

The minister has specified in the ESL MPS that we should consider ‘capacity for sustained investment and innovation’ a relevant policy priority when designing and undertaking the ESL process. Demonstrated capacity for investment is relevant to our consideration of whether arrangements promote this priority as significant investment can be required to deploy and maintain an effective service by both incumbents and prospective licensees.

We have also considered ‘facilitating opportunities for new entrants and use cases, including LEOsats’ in this criterion. These opportunities can promote investment and innovation in use of the spectrum through new users and use-cases and their impact on other users.

Supporting the deployment of new and innovative technology, including 5G in the 3.4–4 GHz band, is also a policy objective of the [2022 Ministerial Policy Statement \(MPS\) for the 3.4 – 4.0 GHz spectrum band](#) (the 3.4 GHz MPS)(although we note that the minister has signalled an intention to repeal this instrument once allocations across the band have concluded).

²⁵ See Martin Cave and William Webb, *Spectrum Management: Using the Airwaves for Maximum Social and Economic Benefit*, Cambridge University Press, 2015, p. 42.

Advanced radiofrequency communications, including 5G and 6G, are considered to be [critical technologies](#) that can impact Australia’s national interest, including economic prosperity, national security and social cohesion. Encouraging uptake of these technologies across the economy, and encouraging local and international investment, would likely be conducive to the public interest.

Technological and digital transformation is one of the 5 major domestic and global forces that the [Intergenerational report 2023](#) considers will continue to shape Australia’s future path of economic growth and the composition of the economy. The public mobile network service market, for example, was worth \$12.4 billion in 2021, and is expected to grow to \$14.7 billion over the next 5 years.²⁶

Increasing demand for mobile data has implications for Australian networks, requiring increased capacity, and investment and innovation in how spectrum is used.

Our consideration of innovation is not confined to new technology. New or proposed business or deployment models (for example, passive and other sharing models), investment strategies, partnerships, and novel use of established technologies, are also examples of innovation.

For example, we note in our [private wireless networks market study](#) that private 4G and 5G networks typically rely on the same technology as public WBB networks; the main difference is access to spectrum and control over network performance. According to some industry analysts and experts, private wireless networks will induce a fourth industrial revolution of highly automated and efficient production. Governments are monitoring progress of the deployment of private networks and funding trials that include deploying private networks to encourage innovation.²⁷ The Australian private wireless network market was valued at \$130 million in 2021. It is predicted that the market will grow nearly 30% annually over the next 5 years to be worth \$695 million by 2027.²⁸ However, the rate of deployment will depend on both business demand for automation and – relevantly for ESL considerations – access to spectrum.

Mid-band spectrum is often highly desirable for private wireless networks, due to equipment availability and the types of localised business cases. However, we have received feedback that low, or certain mid-band (1800–2100 MHz and parts of 3.4–4.0 GHz) spectrum is preferable in many cases, and that much of this spectrum is covered by ESLs. Some governments around the world have reserved spectrum for private industrial applications.²⁹ And there is a strong, positive correlation between private wireless network deployment and governments making spectrum available for industrial purposes or private wireless networks.³⁰ In Australia, we have made apparatus- and class-licensing arrangements available in several bands that could be used to support private networks and industrial applications. This includes the allocation of area-wide licences (AWLs) in 3.4–4.0 GHz in remote areas and the 3.8 GHz band in metropolitan and regional areas, and the review of

²⁶ GlobalData, *Australian Mobile Operator KPI Forecast for Australia* [database], March 2023, accessed March 28, 2023. Forecast excludes device sales.

²⁷ See our [Market study: private wireless networks using 4G and 5G](#).

²⁸ Mordor Intelligence, *Australian Private wireless network Landscape (2022-2027)*.

²⁹ For example, the United States has reserved spectrum available at 3.5–3.7 GHz, Germany at 3.7–3.8 GHz and Japan at 1.9 GHz and between 4.6 GHz and 4.9 GHz.

³⁰ GSA, *Private Mobile Networks: May 2023 Member Report*, GSA, 2023. p.10, accessed 14 June 2023. As part of our broader spectrum allocation activities, we support private network use cases through licensing arrangements for local area wireless broadband. The ACMA introduced area-wide licences in response to changes in technology and requests from spectrum users for additional flexibility within the apparatus licensing system - see [Area-wide licensing: ACMA approach to introducing area-wide licences](#).

apparatus licensing arrangements in the 1800 MHz and 2 GHz bands outside of spectrum licensed areas.

Criterion 3: enhances competition

Through the 2024 SoE, the minister identified ‘supporting government policies related to regional, rural and remote Australia including by having regard to relevant ministerial policy statements in the planning and allocation of spectrum to support innovation and competition, in these areas’ as being relevant to our ESL process.

We have considered 2 policy objectives identified in the ESL MPS as part of this criterion and the long-term public interest: ‘facilitating opportunities for new entrants and use cases, including for LEOsats’ and ‘promote competition’. We also note the ‘supporting a range of use cases and users’ and ‘promoting competitive markets’ objectives identified in the 3.4 GHz MPS and is relevant to ESLs within the 3.4–4.0 GHz band.

Spectrum holdings directly influence an operator’s network capacity and service quality, and the potential for entry into new geographic markets, making them a significant determinant in an operator’s competitive ability. The management and allocation of scarce spectrum resources can have a significant impact on the nature of competition in downstream markets that rely on spectrum.

The *Intergenerational Report 2023* notes that:

...a dynamic and competitive economy can amplify the benefits of new technologies. Competitive pressures accelerate the flow of good ideas and resources between firms and foster continued innovation, adoption, and improvement.

Reduced competition – and its flow-on effects of market concentration and reduced economic dynamism – have contributed to Australia’s slowed productivity growth.³¹

Competitive markets, and how spectrum holdings underpin those markets, can enhance productivity and the overall public benefit by putting pressure on licensees to seek innovation and efficiencies to introduce new or rival services. A lack of access to spectrum can lessen or eliminate the threat of competition, removing incentives for incumbents to be competitive, such as where a lack of spectrum acts as a barrier to new entrants offering competing services in downstream markets (for example, mobile, enterprise and fixed wireless markets). Flexible and tradable licences are recognised as means to facilitate innovation and competition, after an initial allocation (typically via auction).³²

Imbalances in spectrum holdings and unused or underutilised spectrum can also reduce competitive pressures.³³

A relevant consideration of the public interest is circumstances where spectrum holdings across ESLs are not creating or incentivising a competitive environment, or where there is entrenched end-user demand that the market is not addressing.

³¹ See [A more dynamic and competitive economy](#).

³² Cave, Doyle and Webb, *Modern Spectrum Management*, p. 85.

³³ Additionally, the economic efficiency gains intended to be realised by tradable and technology-flexible licences, and low transaction costs imposed by regulation, can go unrealised where the behaviour of market players is not competitive – see Cave, Doyle and Webb, *Modern Spectrum Management*, p. 39.

Criterion 4: balances public benefits and impacts

Spectrum is used to enable a broad range of economic activities, as well as outcomes such as social connectivity, public safety and security, and enabling critical services.

Including this criterion within the public interest framework reflects the Explanatory Memorandum associated with the *Radiocommunications Legislation Amendment (Reform and Modernisation) Act 2020*, which notes – in relation to the inclusion of a renewal statement in a spectrum licence that allows the ACMA to renew the licence unless the ACMA is satisfied that it is in the public interest to do so – that:

... some of the matters ACMA may consider in making a decision regarding the public interest of renewing a spectrum licence include: if the licence is used to supply essential public services and there is the potential that a change in licensees may put at risk delivery of services to a significant number of people, whether the incumbent can demonstrate substantial investment and past long-term use of the licensed spectrum, and considerations of the highest value use of the spectrum.

This criterion aligns with the objective in the SoE of promoting technology neutral, simple and pragmatic frameworks that facilitate early adoption of new and emerging technologies, such as LEOsat-enabled D2D technologies while providing safeguards for consumers and small businesses, which the minister has identified as being relevant to ESLs.

We have considered the objectives of ‘facilitating opportunities for new entrants and use-cases, including LEOsats’, and ‘supporting continuity of service to consumers, particularly where no alternative service is available’, specified in the ESL MPS as part of this criterion. Different options for facilitating opportunities for new entrants and use-cases may have different impacts upon service quality, such as where loss of spectrum degrades existing services or limits capacity for new services like LEOsats, while other options may provide public benefits in addition to those provided by existing services.

Including this criterion, and aligning it with the relevant policy priorities, is intended to ensure that the ACMA considers the net benefits and costs associated with different options for future uses and users of the spectrum, and to expressly acknowledge that there may be trade-offs for licensees and the overall public interest associated with decisions on ESLs and on future use of the spectrum.

This criterion also provides us with an avenue to consider that the public interest considerations for certain spectrum uses may differ. Not all ESL incumbents operate commercial services, and some operations might not be as sensitive to competitive pressures as others. However, their services may contribute to the overall public benefit by, for example, facilitating social cohesion, an informed society, or mobility of goods and people. In cases where the service does not operate in a market with substitutable products or services, loss of that service could have an adverse effect on the public interest.

Commercial services also deliver more than economic outcomes: WBB facilitate social connections and broader societal benefits.³⁴ For ESL incumbents that provide services in a competitive market, this criterion acknowledges that those outcomes depend on access to spectrum, and the impact on consumers arising from loss of that spectrum could be significant, either on a short- or long-term basis. This criterion can take account of consumer welfare and choice, and inform assessments of options that provide for service continuity.

³⁴ See [Venture Insights State of the Australian Telecommunications Industry](#).

Criterion 5: supports relevant policy objectives and priorities

We have incorporated relevant policy objectives and priorities throughout the public interest criteria where there are clear linkages between objectives and the criteria. We also have regard to these policy priorities and objectives under this separate criterion, with a specific focus on regional and remote Australia, reflecting the SoE.

Supporting government policies related to regional, rural and remote Australia, including by having regard to relevant ministerial policy statements in the planning and allocation of spectrum to support innovation and competition in these areas, is an objective in the SoE that the minister has identified as relevant for ESLs.

The minister has specified 'connectivity and investment in regional and remote areas' as a policy objective relevant to the ESL process in the ESL MPS. The objective of 'supporting service continuity for consumers, particularly where no alternative service is available' is also particularly relevant in certain regional and remote areas where end-users have no or few choices of service provider. We have considered both of these objectives as part of this criterion. However, more broadly, we consider that all the objectives specified in the ESL MPS are relevant to our consideration of the long-term public interest as it relates to ESL spectrum in regional and remote areas.

For the 3.4–4.0 GHz band, supporting digital connectivity and investment in regional Australia is a policy objective specified in the 3.4 GHz MPS. In our Statement of Intent, we indicate that we will address government policies and priorities by supporting opportunities for better telecommunications services in regional and remote Australia through our spectrum and licensing allocation processes and innovations to improve service delivery – including by the rapidly emerging satellite sector.

Regional, rural, and remote connectivity, investment and competition

Recent inquiries and reports have highlighted that regional, rural and remote connectivity is a complex, multi-dimensional issue. The ACCC's 2023 [Regional mobile infrastructure inquiry – Final report](#) (the RMII) identifies a wide range of interconnected issues relating to regional coverage, as well as policy paths to address them. Issues identified include those relating to non-radiocommunications regulation, infrastructure and land access costs, incentives and practicalities of co-location and sharing models for active and passive infrastructure, broader competition issues and inefficiencies, and lack of commercial returns associated with building mobile infrastructure in regional and remote areas.³⁵

The November 2023 report arising from the House of Representatives Standing Committee on Communications and Arts' inquiry into co-investment in multi-carrier regional mobile infrastructure made a range of recommendations relating to management and regulation of

³⁵ Recommendations arising from the [2021 Regional Telecommunications Review](#) do not specifically focus on spectrum management, but do recommend, among other things, new or continued funding for new mobile coverage and shared network access models (including neutral hosting models). Telstra has noted that 'Because of the challenging economics, there are likely to be few new economically viable sites in regional and remote areas, without support from government co-funding'; and that 'Difficult terrain and low population density means there will always be large parts of Australia's land mass that will not get terrestrial based mobile coverage, even with co-funding initiatives.' See Telstra's [submission](#) to the Inquiry into Co-Investment in Multi-carrier Regional Mobile Infrastructure (the Inquiry into Co-Investment). The ACCC noted similar stakeholder views in its RMII. Similarly, the [Australian Broadband Advisory Council has commented](#) that 'It is not reasonable to expect that the national carrier business models, even with the stepped up "push-pull" approaches from government, will solve what is essentially a local problem;' and that "While carrier fixed and mobile broadband networks can "do everything", they are over-engineered for many agri-tech applications, and still won't necessary resolve' coverage problems. The Council cites a range of technologies and approaches that are being deployed, and notes that access to fibre backhaul and access to spectrum – including potential allocation and licensing [options for the 6 GHz](#) band being considered by the ACMA – are critical inputs into developing a robust and multi-tiered market for services in these regions.

telecommunications infrastructure to improve coverage and competition for end-users in regional, remote and First Nations Australian communities. The report discusses the feasibility of multi-carrier models, such as active sharing and neutral hosting alongside the application of new technologies. The committee also considered weak commercial incentives for network operators to expand their networks in a mature market. Recommendations 1 and 2 of the report would be relevant to the ACMA's spectrum management functions and the minister has drawn attention to the Committee's views about access to low-band spectrum in regional, remote and First Nations Australian communities.³⁶

Since the finalised framework was originally published in December 2023 as part of stage 1, the Regional Telecommunications Independent Review Committee (RTIRC) has delivered the [2024 Regional Telecommunications Review](#). RTIRC noted that while mobile networks have improved significantly over time, further expansion of mobile coverage in regional, rural and remote areas is increasingly becoming less commercially viable due to lower and more dispersed populations in those areas and the costs associated with deploying and maintain infrastructure. Capacity and congestion issues were identified as a recurring concern among end-users in these areas, particularly during busier periods, with more data-intensive applications also a contributing factor.

We note that this policy priority could realise outcomes for First Nations Australians.³⁷ Regional, rural, and remote connectivity and Closing the Gap for First Nations peoples are not in all cases synonymous, but there are very strong links between them. Approximately 2.8 million, or 11%, of Australians experience digital exclusion – an experience that is more pronounced in regional and remote areas. While the number of 5G sites in regional and remote areas has increased of late,³⁸ the experience of communications services in regional areas, including that of First Nations peoples, can involve poor coverage, congestion, and limited choice, compared to cities and more populous areas of Australia.³⁹ Digital inclusion⁴⁰ decreases with remoteness for both First Nations and non-First Nations peoples; but 62.9% of First Nations Australians live outside of capital cities, and the gap in their digital inclusion is greater for First Nations peoples in remote and very remote areas.⁴¹

Spectrum, along with communications technologies, is an enabler of digital inclusion. Considering how incumbent or alternative uses for and users of the spectrum can facilitate opportunities for regional, rural and remote connectivity is a way that we, as the spectrum manager, can contribute to these objectives.⁴²

Some stakeholders have expressed views that there is unused or underutilised spectrum in ESLs that could be used to provide better connectivity in the regions. In the absence of an active secondary market, long-term Australia-wide licensing arrangements would preclude

³⁶ See the House of Representatives Standing Committee on Communications and the Arts' 2023 report [Connecting the country: Mission critical Inquiry into co-investment in multi-carrier regional mobile infrastructure](#).

³⁷ In the ACMA's Statement of Intent, we also indicate that we will have regard to and contribute, where we are able, to broader policy priorities, including First Nations Australians and Closing the Gap targets.

³⁸ See the ACCC's [Mobile Infrastructure Report 2022](#).

³⁹ See the ACCC's 2023 [Regional mobile infrastructure inquiry – Final report](#), pp.1, 5.

⁴⁰ In this context, we understand digital inclusion, and the digital gap (that is, the 'difference in levels of digital inclusion between First Nations people and other Australians') as considering the availability and affordability of communications options, as well as a range of social factors. This understanding is consistent with the [Mapping the Digital Gap 2023 Outcomes Report](#).

⁴¹ [2023 First Nations Digital Inclusion Advisory Group Initial Report](#), pp. 8, 11–12. These findings are echoed in the Mapping the Digital Gap 2023 Outcomes Report and First Nations Digital Inclusion Roadmap.

⁴² Outcome 17 of the [National Partnership Agreement on Closing the Gap](#) is 'Aboriginal and Torres Strait Islander people have access to information and services enabling participation in informed decision-making regarding their own lives.' The [target](#) associated with Outcome 17 is 'By 2026, Aboriginal and Torres Strait Islander people have equal levels of digital inclusion.' We note that the timeframes for ESLs are not necessarily conducive to achieving that target by 2026, and we propose to have regard to the outcome.

alternative users from addressing these public interest issues.⁴³ Low-band spectrum, which can provide coverage in regional and remote areas, is considered particularly desirable by a range of different interests, and we are aware of calls to make unused parts of this spectrum covered by ESLs available for mobile and/or public safety services in these areas.

In terms of First Nations Australians' digital inclusion – largely in regional and remote areas – the [2023 First Nations Digital Inclusion Advisory Group Initial Report](#) encourages further examination of competition issues and new technologies. It notes the potential benefits that could be realised by rolling out mesh wi-fi and LEOsats. Similar views were expressed in the recommendations made in the [First Nations Digital Inclusion Roadmap: 2026 and beyond](#).

Given that supporting competition in regional areas is an objective of the SoE relevant to ESLs and supporting connectivity and investment in regional and remote areas and promoting competition more broadly are objectives of the ESL MPS, we will consider whether existing arrangements are facilitating competitive outcomes.

We and other stakeholders have noted that spectrum availability and access is not necessarily a barrier to terrestrial mobile network expansion in regional, rural, and remote areas, or to digital inclusion for First Nations Australians. The spectrum management framework and spectrum licences are designed to facilitate trading and sharing in the secondary market, which is intended to facilitate movement of spectrum to the most economically efficient and productive ends. Whether that secondary market is realising those outcomes may be a relevant consideration for the public interest. We have also noted⁴⁴ that sharing models and other incentives could be conducive to increasing spectrum utilisation in areas that lack connectivity.

Recent technology trends might also be relevant to our consideration of how ESLs and the spectrum overall can contribute to this policy priority. We are aware of increasing interest in provision of satellite direct-to-mobile services, and that some stakeholders consider that such services could be used to provide regional, rural and remote connectivity. These services are in their early stages of development, and different models have different licensing and regulatory requirements. One of the emerging models, International Mobile Telephony (IMT) satellite direct-to-mobile, is being proposed for use in parts of the spectrum allocated to mobile network operators (MNOs) under spectrum licences, including ESLs. WBB stakeholders have recently announced their plans to offer services using LEOsats.⁴⁵

In our FYSO 2023-28, and more recently in our [Regulatory guide: Operation of an IMT satellite direct-to-mobile service](#), we have signalled that, given the broad coverage provided by satellite services, and the requirements of the new interference management profile associated with providing satellite services in these bands, operation of IMT satellite direct-

⁴³ The ACCC finding was that 'To the extent that regional-focused operators can develop alternative means of providing mobile coverage in regional Australia, there may be benefit in providing those operators with access to [currently allocated, and particularly low-band] spectrum, particularly where the spectrum may be not currently used.' The ACCC also noted that, while it had 'not been provided with more detailed information on the proposed alternative use cases, the ACCC understands that some international jurisdictions have a "use it or lose it" licence obligation on spectrum licences. "Use it or lose it" provisions could potentially promote more efficient use of spectrum including by incentivising licensees to share spectrum that they do not use. However, "use it or lose it" obligations may lead to inefficiencies where there are, for example, legitimate reasons for a company to delay rolling out services.'

⁴⁴ See our [submission](#) to the Inquiry into Co-Investment. The Department of Infrastructure, Transport, Regional Development, Communications and the Arts, in its submission to the Inquiry into Co-Investment similarly observed that 'There is no clear evidence that spectrum access is a barrier to expanding coverage in regional and remote areas for the major mobile carriers. All the major mobile carriers own national spectrum licences for low band and have holdings of medium and high band spectrum.' The ACCC's RMI report notes that it 'consider[s] that Telstra, Optus and TPG Telecom all currently have sufficient spectrum to supply mobile network services in rural, regional, remote and peri-urban areas,' p. 80.

⁴⁵ See the government's 2023 [Better delivery of universal services discussion paper](#).

to-mobile in Australia would likely only be practical under an Australia-wide spectrum licence, including ESLs in 700 MHz, 850 MHz, and 2.5 GHz. The extent to which IMT satellite direct-to-mobile, as well as mobile-satellite service direct-to-mobile, could address long-standing issues relating to regional, rural and remote coverage, may be a relevant factor in our consideration of long-term arrangements for the spectrum that best serve the public interest.