Australian Government | acma

Australian Communications and Media Authority

Outcomes of the implementation of the Spectrum Pricing Review

Response to submissions and final reforms

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Executive summary

In February 2018, the then Australian Government endorsed the recommendations of the Spectrum Pricing Review. The Spectrum Pricing Review made 11 recommendations around allocation decisions, market-based allocations, administered allocations, and the legislative and cost recovery framework for spectrum pricing and management. The ACMA has implemented the recommendations of the review in 2 tranches, the second of which concludes our implementation process.

This outcomes paper summarises the reforms we are implementing as part of the second tranche, following consideration of views expressed in response to our paper, *Response to implementation of the Spectrum Pricing Review (part 2)*.

The ACMA's implementation of the Spectrum Pricing Review process has focused on the implementation of 3 of the 11 recommendations relevant to our spectrum management capabilities:

> **Recommendation 1**: The ACMA should publish guidelines on how it approaches its spectrum pricing decisions.

> **Recommendation 7**: The ACMA should undertake a detailed review of the administrative pricing formula's parameters including density areas, the number of pricing bands and the number of power categories. The ACMA should implement regular updates to the location and band weightings to reflect changes in density, demography and demand.

> **Recommendation 8**: The ACMA should apply opportunity cost pricing to a greater number of spectrum bands, especially where it is impractical to competitively allocate spectrum. This work should be identified in the ACMA's annual work program. The ACMA should consider more time effective approaches to implement these, and review fees as market conditions change over time.

Implementation of the Spectrum Pricing Review
In March 2020, we began the implementation of the Spectrum Pricing Review with the release of our first consultation paper, the *Implementation of the Spectrum Pricing Review*.

The paper stated our intent to implement recommendations 1, 7, and 8 of the Spectrum Pricing Review and outlined our role in implementing the other recommendations. We also published our draft spectrum pricing guidelines for consultation.

To help identify issues and developments relevant to the review of apparatus licence taxes and the tax formula, we proposed 6 focus areas for comment:

1. large bandwidth and multiple (networked devices) requirements
2. sharing and low interference potential devices
3. defined approach to considering changes in taxes and opportunity cost pricing
4. consistency of pricing approach across geographic areas and bands
5. new technologies and trials
6. transparency and ease of calculating taxes.

We received 27 submissions to the *Implementation of the Spectrum Pricing Review* paper.

Response to implementation of the Spectrum Pricing Review
In December 2020, we released the *Response to implementation of the Spectrum Pricing Review*.

The paper considered the submissions received to the initial consultation paper. We then developed an initial set of proposed reforms – the first tranche of reforms – that included:

> a reduction in taxes based on the tax formula for services above 5 GHz, ranging from 25% to 90% depending on the frequency range and the service
> the introduction of a 'systems price' for earth stations with multiple antennas, with prices more commensurate with the spectrum denial of those systems
> the introduction of an additional price discount to encourage more use of the land-mobile 'micro' service model.

The paper also detailed the finalised spectrum pricing guidelines after considering feedback from submitters. The draft spectrum pricing guidelines were updated to include references to opportunity cost and flexibility to technological changes.

We received 15 submissions to the *Response to Implementation of the Spectrum Pricing Review* paper.

After considering submissions, the initial proposed reduction in taxes based on the tax formula for services above 5 GHz was further refined. Frequencies that initially had a proposed discount of 25% were increased to 50%, and frequencies that initially had a proposed discount of 50% were increased to 90%. The first tranche of reforms came into effect in July 2021.

Response to implementation of the Spectrum Pricing Review (part 2)
In October 2021, we released a second response paper, the *Response to implementation of the Spectrum Pricing Review (part 2)*. This paper outlined a second tranche of reform proposals, which included:

> simplifying the location weightings tables by consolidating the >30 to 403 MHz frequency range into a single band
> increasing weightings for the >2,690 to 5,000 MHz spectrum location band for high- and medium-density geographic areas to reflect the relatively large increase in demand for this spectrum in these areas and the general increase in prices for similar spectrum
> adding a new spectrum location band >100 GHz where licences will generally incur the minimum tax (currently $41.37), reflecting the lower potential for interference at these higher frequencies, and facilitating the use of services expected to require very large bandwidths
> stopping annual consumer price index (CPI) updates to taxes, and instead regularly updating taxes based on population growth specific to density areas
> updating the medium-density area definitions for Perth and Adelaide
> reducing tax rates for transmitter licences used to provide high-power open narrowcasting (HPON) services.

We received 10 submissions to the *Response to Implementation of the Spectrum Pricing Review (part 2)* paper.

After considering submissions received, we will not proceed with the initial proposal to increase location weightings for >2,690 to 5,000 MHz spectrum location band. We will also delay the introduction of the new medium-density area definitions for Perth and Adelaide by approximately 3 years.

We intend to consult on updated taxes based on the new population growth methodology in Q4 2022, for updated taxes to be implemented in April. The consultation will provide licensees with more details about the intended approach. Stakeholders are accustomed to this timeframe, consistent with CPI-based annual tax updates in previous years.

After these reforms are implemented, we will also conduct periodic reviews of bands to ensure that price levels remain appropriate over time. For example, we have not proceeded with the proposed price rise in >2690 to 5000 MHz frequency range, but it may be prudent to conduct a review of the band following the outcomes of the planned 3.4–4.0 GHz allocation. We will outline our proposed work plan for these band reviews in the *Five-year spectrum outlook 2022–27* (FYSO).

Outcomes of the implementation of the Spectrum Pricing Review
This outcomes paper signals the end of the ACMA's implementation of the Spectrum Pricing Review process. We thank all submitters who provided submissions to the ACMA.

This paper also details the next steps for future reform work regarding apparatus licences and how stakeholders can continue to keep engaged with us throughout this process.

Response to latest submissions

We received 10 submissions to the *Response to Implementation of the Spectrum Pricing Review (part 2)* paper from various industry sectors such as the satellite industry, mobile network operators, narrowcasters, and other interested bodies. The paper and a list of individual submissions can be viewed on the ACMA website.

The paper invited comment on 10 questions relating to the proposed second tranche of reforms, amendments to the first tranche of reforms, and any other pricing issues that submitters may wish to comment on. We considered the submissions received, altered some initial proposals accordingly, and have provided responses to submitters' comments in this section.

Amalgamate the >30 to 403 MHz range into a single band

An assessment of current total assignments within each location classification showed that the total number of assignments in the >30 to 70 MHz range and the >399.9 to 403 MHz range were much lower than neighbouring bands. Furthermore, the weightings for these bands differed only marginally from the location weightings for the >70 to 399.9 MHz range. A summary of the affected location weightings before the changes is shown in Table 1.

Table 1: Current location weightings for the >30 to 403 MHz spectrum location

	Geographic location				
Spectrum location	**Australia-wide**	**High**	**Medium**	**Low**	**Remote**
>30 to 70 MHz	9.7470	3.8070	2.0250	0.4370	0.2180
>70 to 399.9 MHz	10.0000	4.1040	1.8780	0.4210	0.2100
>399.9 to 403 MHz	10.0000	5.6000	2.5620	0.4370	0.2180

Consequently, we proposed to simplify the table by amalgamating the 3 spectrum locations >30 to 70 MHz, >70 to 399.9 MHz, and >399.9 to 403 MHz into a single spectrum location. This was proposed to be done by taking the lowest location weighting from the 3 original spectrum locations for each geographic location as the location weighting for the new amalgamated spectrum location. A summary of the location weightings resulting from the proposed changes is shown in Table 2.

Table 2: Proposed location weightings for the >30 to 403 MHz spectrum location

	Geographic location				
Spectrum location	**Australia-wide**	**High**	**Medium**	**Low**	**Remote**
>30 to 403 MHz	9.7470	3.8070	1.8780	0.4210	0.2100

Submitters were asked the following question about the proposed reform:

> **Question 1**
> Do you have any comments on the proposal to amalgamate the >30 to 403 MHz range for the tax formula?

We received 2 submissions to this question, both of which were supportive.

Response to submitters

As there were no objections or issues raised by submitters, we have implemented these reforms as proposed.

Increase weightings for the >2,690 to 5,000 MHz spectrum location

Looking at trends in assignments for each location weighting over time, the period from 2005 to 2020 saw a marked relative increase of new assignments in the >2,690 to 5,000 MHz spectrum location for high- and medium-density geographic areas. A summary of the affected location weightings before the proposed changes is shown in Table 3.

Table 3: Current location weightings for the >2,690 to 5,000 MHz spectrum location

	Geographic location				
Spectrum location	Australia-wide	High	Medium	Low	Remote
>2,690 to 5,000 MHz	9.9740	1.8530	0.7510	0.6220	0.3110

Consequently, we proposed to increase the location weightings for high- and medium-density areas in the >2,690 to 5,000 MHz spectrum location to better reflect contemporary spectrum uses and values. A summary of the location weightings resulting from the proposed changes is shown in Table 4.

Table 4: Proposed location weightings for the >2,690 to 5,000 MHz spectrum location

	Geographic location				
Spectrum location	Australia-wide	High	Medium	Low	Remote
>2,690 to 5,000 MHz	9.9740	2.6892	1.2432	0.6220	0.3110

Submitters were asked the following question about the proposed reform:

> **Question 2**
> Do you have any comments on the proposal to increase location weightings for the high and medium-density areas in the >2,690 to 5,000 MHz range?

We received 2 submissions to this question, one of which was supportive and another unsupportive. One submitter argued that the proposed increase would cause an unbalanced additional cost for satellite services provided to remote areas. They further argued that the ACMA should instead consider applying the same fees established for low-density areas to high- and medium-density areas for satellite services in the >2,690 to 5,000 MHz range or at least the same fees as established for above 5,000 MHz.

Another submitter noted their support for changes that seek to optimise the use of spectrum in high-demand frequency ranges. They considered that the proposed changes should assist in reducing the potential for congestion in the >2,690 to 5,000 MHz range and ultimately support any reallocation of key spectrum to maximise use for 5G services.

Response to submitters

Noting issues raised by submitters, we have decided to not proceed with the proposed increases and instead keep the location weightings at their current value. We will instead commit to periodic band reviews, including of these frequency ranges. Further information of this band review and other bands will be included in the FYSO.

Introduce new spectrum location band for services above 100 GHz

Submissions to the Spectrum Pricing Review process have demonstrated that there are innovative services emerging in high frequency ranges with very large bandwidths but a limited geographic spectrum denial footprint. An example of this is optical communications for satellite services. Even with the tax reductions of 90% implemented as a part of the first tranche of reforms, services with bandwidths in the tens or hundreds of GHz have the potential for licence taxes to be prohibitive and stifle innovation. A summary of the affected location weightings before the proposed changes is shown in Table 5.

Table 5: Current location weightings for the above 51.4 GHz spectrum location

	Geographic location				
Spectrum location	Australia-wide	High	Medium	Low	Remote
Above 51.4 GHz	0.1000	0.0100	0.0100	0.0010	0.0010

We proposed to create a new band above 100 GHz and set tax rates for these services at the minimum tax (currently $41.37). A breakpoint of 100 GHz was identified as a relevant consideration, noting recent activity in other jurisdictions including the United Kingdom and United States to facilitate greater access to frequencies above this range. Charging the minimum tax in this band also acknowledges the lower potential for interference in this range. A summary of the location weightings resulting from the proposed changes is shown in Table 6.

Table 6: Proposed location weightings for the >51.4 GHz to 100 GHz and above 100 GHz spectrum locations

	Geographic location				
Spectrum location	Australia-wide	High	Medium	Low	Remote
>51.4 to 100 GHz	0.0100	0.0010	0.0010	0.0001	0.0001
Above 100 GHz	0.0000	0.0000	0.0000	0.0000	0.0000

Submitters were asked the following 2 questions about the proposed reform:

> **Question 3**
>
> Do you have any comments on the appropriateness of the proposed spectrum location weighting for frequencies above 100 GHz?
>
> **Question 4**
>
> The minimum tax in this band is intended for services exhibiting limited interference potential to other services. Should the ACMA restrict the minimum tax above 100 GHz to services, such as optical communications, with known limited interference potential?

We received 4 submissions that commented on the proposal to set services above 100 GHz at minimum tax, all of which were supportive. One submitter noted that given

the limited communications distances that would apply to services above 100 GHz and the greater scope for frequency re-use, it would be appropriate to set the licence tax at the minimum level for these services. Another submitter noted that 100 GHz is at such a high frequency that antenna performance would be excellent and propagation losses high.

For the question of whether the ACMA should restrict the minimum tax above 100 GHz to services with known limited interference potential, no submitters considered that limiting the minimum tax to be applicable to certain services or technologies was required. For example, one submitter commented that providing some power limits are adopted that would allow economic use of the band, there is no reason to limit the minimum tax to optical devices.

In terms of higher frequency ranges in general, one submitter wanted to note the disparity between the ACMA's treatment of optical communications spectrum compared to that of other countries and the International Telecommunication Union (ITU). They noted that the ACMA regulates and taxes spectrum up to 420 THz, whereas the ITU only regulates for frequencies up to 3 THz. An argument was made that the requirement to apply for a licence still places a burden on companies and universities wanting to establish optical ground stations in Australia that is not present in other countries.

Response to submitters

As there was consensus support from submitters for the introduction of a minimum tax for services above 100 GHz with no further restrictions on services or technologies, we have implemented this reform as proposed.

Stop annual CPI updates to taxes, and instead regularly update taxes based on annual population data updates

We currently update all apparatus licence taxes uniformly each year in line with changes in the Consumer Price Index (CPI). This policy setting aims to keep licence taxes constant in real terms. The total percentage change in licence tax levels for each geographic area from 2010 to 2020 is shown in Table 7.

Table 7: Total percentage change in licence tax levels by geographic area given annual updates using changes to CPI (2010 to 2020)

Geographic location				
Australia-wide	High	Medium	Low	Remote
19.35%	19.35%	19.35%	19.35%	19.35%

One of the issues with this approach to updating taxes is that it treats all licences equally, regardless of the different demand for spectrum in different areas. This was highlighted by stakeholders in low- and remote-density areas continuing to face increases in their licence taxes despite spectrum availability remaining high and limited or no change to the spectrum denial characteristics of their spectrum use.

In addressing these concerns, we proposed to stop updating apparatus licence taxes uniformly each year based on changes in CPI, and instead update taxes each year based on geography-specific population changes. The hypothetical total percentage change in licence tax levels for each geographic area from 2010 to 2020, if the proposed mechanism had been used, is shown in Table 8.

Table 8: Hypothetical total percentage change in licence tax levels by geographic area given annual updates using population changes (2010 to 2020)

Geographic location				
Australia-wide	High	Medium	Low	Remote
16.64%	21.69%	14.68%	12.20%	6.58%

Submitters were asked the following question about the proposed reform:

> **Question 5**
> Do you have any comments on the proposed method to update taxes by reference to population change, rather than annual adjustments based on the CPI?

We received 7 submissions that commented on this question; 5 were supportive and 2 were unsupportive.

In the five submissions that expressed support for the proposal, there was general agreement that the proposal was appropriate and should assist in promoting the efficient use of spectrum. One submission noted their support was based on the broad alignment with a $/MHz/pop fee structure. Another submission noted that its support was conditional on the ACMA providing greater transparency over what the new normalisation factors would be and how the annual adjustments may be made and communicated. Two submissions expressed strong reservations about the proposed changes. One argued that the demand for spectrum for land-mobile services and the like could not be easily correlated to changes in population density. They submitted that linking licence tax increases to population changes had the potential to significantly increase licence fee costs in high-density areas, which could begin to significantly impact the economic viability of these businesses. Another submission posited that the proposed change had been designed by the ACMA to generate greater income from spectrum. They noted that population density is not a factor in many, if any, other relevant calculations. They also argued that references to CPI is utilised in almost every commercial contract and is a reference that is easily available.

Response to submitters

While there was majority support for the introduction of the proposed changes, we note the concerns expressed by some submitters.

In response to the comment made that demand for spectrum for land-mobile services could not be easily correlated to changes in population density, we acknowledge that demand for various technologies will each have their own degree of correlation with population density. However, general demand for spectrum correlates strongly with population as assignments are generally deployed to service areas of activity in populated areas. Furthermore, one of the key recommendations of the Spectrum Pricing Review was that spectrum pricing should principally not be technology specific and that users of similar spectrum should be charged similar taxes. For this reason, we do not consider it necessary to adjust our initial proposal based on this line of argument.

Regarding the argument that the proposal has the potential to significantly increase licence fee costs in high-density areas, we acknowledge that we cannot guarantee future population or CPI figures, but assess the risk of this scenario as highly unlikely.

As per Figure 1 and Figure 2 below, the historical rate of change in CPI has been consistently higher than that of population changes, even in the fastest growing cities

of Sydney, Melbourne, and Brisbane. Furthermore, given some of the physical constraints limiting population growth, such as housing stock and other infrastructure, annual changes in CPI have also been demonstrably more volatile than annual changes in population. We expect that the proposed reform will not only lead to lower taxes for licensees in the long term, but less volatile changes to tax rates year-on-year. For example, CPI rose by 5.1% in the 12 months to March 2022, but only 1.1% in the 12 months to March 2021. During the same period, population figures remained largely stable.

Figure 1: Annual percentage changes in population for Sydney, Melbourne, and Brisbane mapped against annual percentage changes in CPI (1976 to 2016)

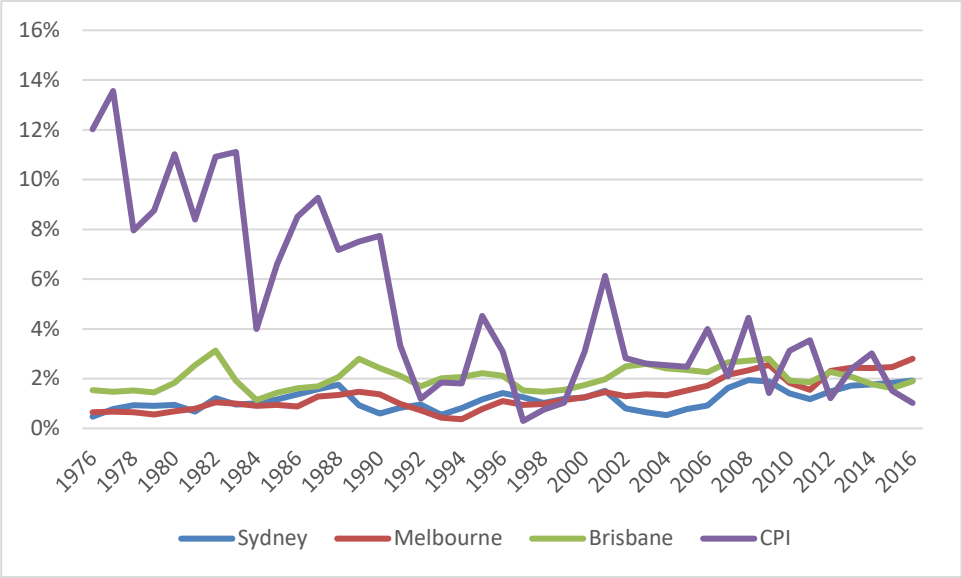
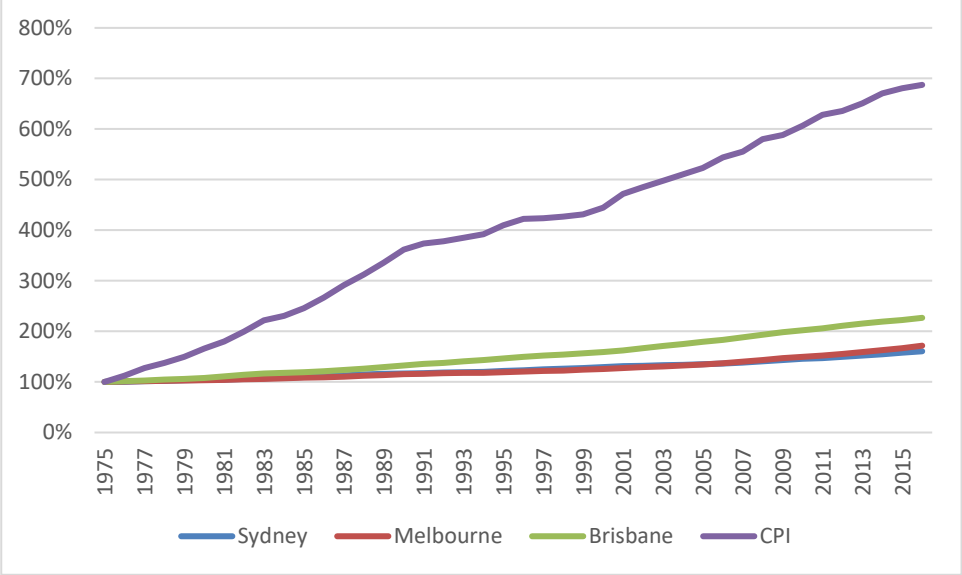


Figure 2: Cumulative percentage changes in population for Sydney, Melbourne, and Brisbane mapped against cumulative percentage changes in CPI normalised to 1975 (1976 to 2016)



In response to the comment that population density is not a factor in many, if any, other relevant calculations while references to CPI are utilised in almost every

commercial contract, we note that population and, by extension, population density has long been used as a basis for informing spectrum pricing. For example, the starting price of spectrum auctions has generally used the $/MHz/pop framework as guidance, as too do area-wide licences. Regarding the comment that references to CPI are prolific in commercial contracts, we do not consider this to be a material point in informing the mechanism by which pricing can be used to enable efficient use of spectrum. The current use of CPI in spectrum pricing matters stands as an anomaly compared to the use of population, which is far more common.

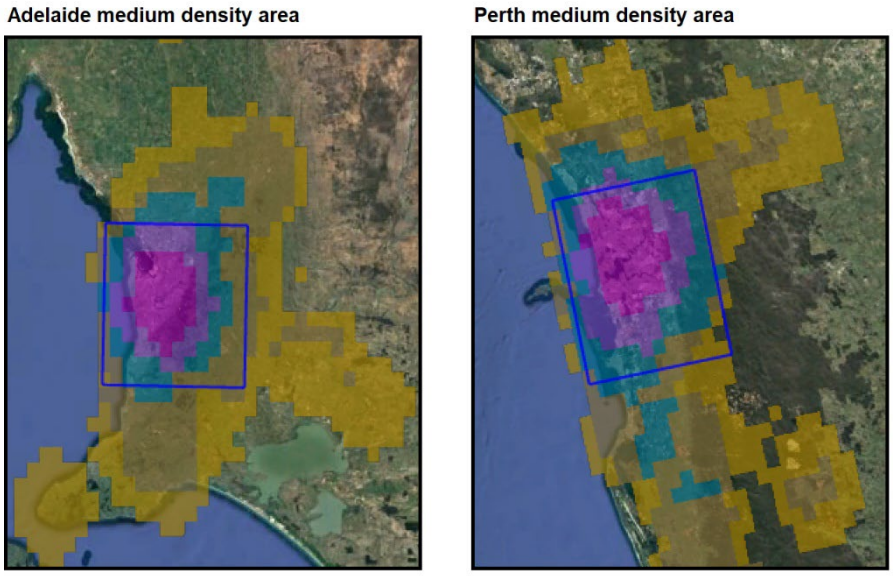
For these reasons, we intend to proceed with the reforms as proposed. However, we acknowledge that submitters have provided support conditional on greater transparency over the new normalisation factors and the exact mechanism by which annual adjustments are made and communicated. As such, we intend to consult further on the implementation of the reform before proceeding with the proposal. We intends to consult on updated taxes based on the new population growth methodology in Q4 2022, for updated taxes to be implemented in April. The consultation will provide licensees with more details about the intended approach. Stakeholders are accustomed to this timeframe as it is consistent with CPI-based annual tax updates in previous years.

Update area definitions for Perth and Adelaide

Geographic density area classifications are used in tandem with location weightings to determine the tax for apparatus licences. Each geographic location in Australia is assigned a density of either high, medium, low, or remote, reflecting their spectrum and population densities, which then informs which location weighting is applicable when calculating taxes due.

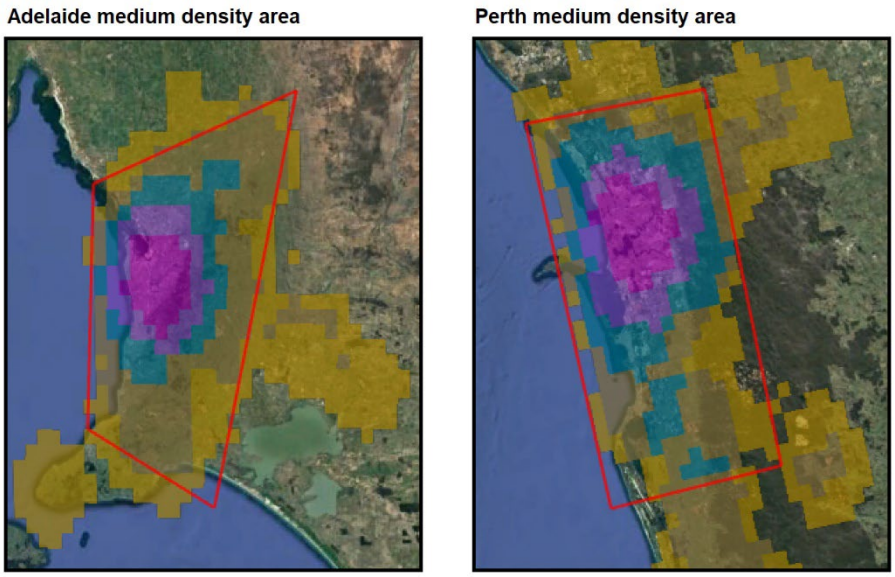
The current Perth and Adelaide medium-density areas are drawn relatively close to their suburban boundaries and do not capture the urban growth and increased density that has occurred in these cities in recent years. This is in stark contrast to the Melbourne, Sydney, and Brisbane high-density areas. As such, currently both the Perth and Adelaide medium-density areas have a higher population density and assignment density when compared against the Melbourne, Sydney, and Brisbane high-density areas. The current boundaries for Perth and Adelaide medium-density areas, outlined in blue, are shown in Figure 3. The shaded graduation from purple to yellow highlights assignment density for each geographic area, with purple being more dense and yellow less dense.

Figure 3: Current boundaries for Adelaide and Perth medium-density areas



In order to better align the densities of each of the areas and provide more coherent tax relativities, we proposed to increase the geographic area for Perth and Adelaide medium-density areas. The proposed boundaries would cover an area more comparable to Melbourne, Sydney, and Brisbane, and remove their current status as anomalies when mapped against population density and assignment density. The proposed boundaries for Perth and Adelaide medium-density areas, outlined in red, are shown in Figure 4. The shaded graduation from purple to yellow highlights assignment density for each geographic area, with purple being more dense and yellow less dense.

Figure 4: Proposed boundaries for Adelaide and Perth medium-density areas



We also published proposed guidelines for each of the geographic areas using the population density and assignment density metrics as a proxy to underlying spectrum demand and potential spectrum denial. These guidelines, together with the

assignment density map, helped to guide the updated boundaries for Perth and Adelaide medium-density areas. The proposed guidelines were:

> high-density areas were defined as an area with a population density of greater than 220 people per km^2 and an assignment density of greater than 70 per km^2 (red area in Figure 4)

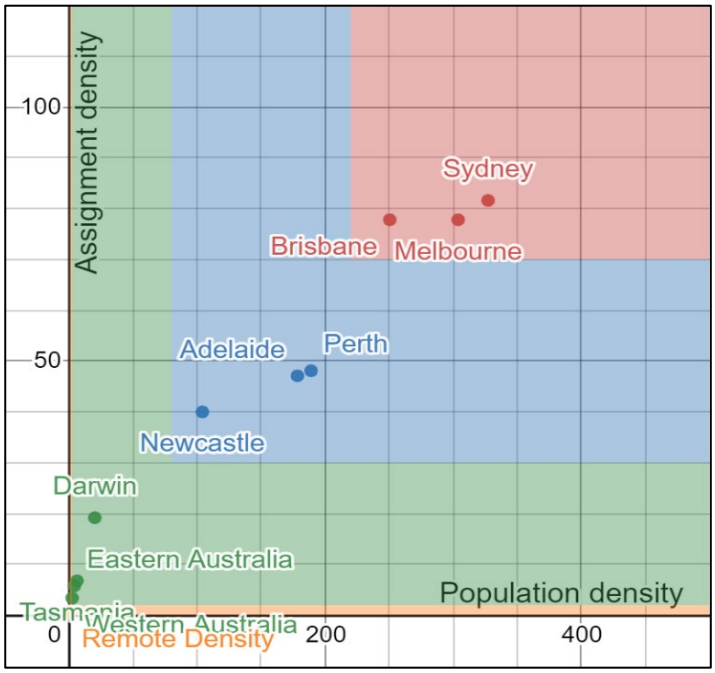
> medium-density areas were defined as an area with a population density greater than 70 people per km^2 and an assignment density of greater than 30 per km^2, that does not meet the definition of a high-density area (blue area in Figure 4)

> low-density areas were defined as an area with a population density greater than 2 people per km^2 and an assignment density of greater than 2 per km^2, that does not meet the definition of either medium- or high-density area (green area in Figure 4).

> remote-density areas were defined as areas that do not meet the definition of low-, medium-, or high-density areas (orange area of Figure 4).

A graph of the proposed density area guidelines, and how each proposed geographic area would fall within these guidelines, is shown in Figure 5.

Figure 5: Proposed density area definitions mapped against geographic areas



Submitters were asked the following question about the proposed reform:

> **Question 6**
> Do you have any comments on the density area framework, proposed density area definitions, or proposed changes to the Perth and Adelaide medium-density areas?

We received 5 submissions that commented on this question, one of which was supportive and 4 of which were neutral. One submission noted its support of the proposed density area framework, density area definitions, and changes to the Perth and Adelaide medium-density areas.

Four submissions noted that the reasoning and framework for the proposal was understood but argued that the ACMA should give further consideration to its

implementation to minimise the impact of price rises for affected licensees. One submission also noted that further information about the density area classifications would be welcome. Another noted that density areas as a concept are a very coarse measurement of spectrum denial and that a more granular approach should be investigated and utilised.

There were 2 submissions that provided explicit recommendations about when the proposals should be introduced. One recommended that the changes be phased in over a 2-to-3-year period to minimise the impact of the changes on affected licensees. Another submission emphasised the importance of looking at longer-term impacts on existing licensees that have services in the affected area. They suggested that the fee increase for existing licensees should be phased in over a 5-year period, with equal increases in each renewal over that time.

Response to submitters

We note that while there is a general understanding and acknowledgement of the reasons for this proposal, submitters would like further information about some definitions and changes to be phased in over a period of time.

We intend to proceed with the proposed changes to update the Perth and Adelaide medium-density areas. However, we have decided to delay the introduction of the boundary changes by approximately 3 years to mid-2025. We note that this is in line with the recommendation of one submission to phase in the change over a 2-to-3-year period, and also has a similar effect to another submission's recommendation for a gradual increase over a 5-year period.

For the comment received that further information regarding density area classifications would be welcome, we would like to clarify that we have no intention for the framework to be used to reclassify geographic areas. The intention in publishing definitions was to provide greater transparency about why certain areas received a certain classification. However, we acknowledge that there may be ambiguity and concern around the publication of definitions for each geographic area. Therefore, we have decided not to proceed with the publication of the strict definitions for each density area and will instead update the fee schedule to explain that geographic areas have been classified and grouped according to comparable assignment density and population density.

Proposal for reduced tax rates for HPON licences

Most HPON licences are currently subject to fixed tax rates depending on where the HPON is located. We adjust tax rates annually in line with changes to the CPI and apply the same tax rate, regardless if services are FM or AM.

Several submissions commented on the discrepancy in tax rates between HPON licences and comparable commercial broadcasting services using similar spectrum. One of the key recommendations of the Spectrum Pricing Review was that services using similar spectrum should be charged a similar tax rate. Currently, some HPON licence tax rates are significantly higher than those charged for commercial broadcasting services. The current HPON licence taxes are shown in Table 9.

Table 9: Current HPON licence taxes

Location	HPON tax
Sydney	$41,134
Melbourne	$41,134
Brisbane	$14,930
Adelaide	$14,930
Perth	$14,930
Perth city	$14,930
Newcastle	$3,809
Canberra	$3,809
Wollongong	$3,809
Gold Coast	$3,809
Gosford	$3,809
Penrith	$3,809
Hobart	$1,677
Geelong	$1,677
Nambour	$1,677
Townsville	$1,677
Cairns	$1,677
Elsewhere	$989

To address the discrepancy between HPON licence tax rates and comparable commercial broadcasting services, we proposed a new set of taxes for HPON licences. The proposed taxes make an additional distinction between FM/TV services and AM services, given that the largest discrepancies were between commercial broadcasting services and AM HPON services. Furthermore, the locations defined for HPON taxes were reconfigured to feature the top urban areas by population. Tax rates were set using a $0.077/MHz/pop price as guidance, an approximation of current commercial broadcast tax price levels. The proposed HPON licence taxes is shown in Table 10.

Table 10: Proposed HPON licence taxes

Location	FM/TV	AM
Melbourne	$7,653	$689
Sydney	$7,649	$688
Brisbane	$3,813	$343
Perth	$3,209	$289
Adelaide	$2,091	$188
Gold Coast - Tweed Heads	$1,093	$98
Newcastle - Maitland	$767	$69
Canberra - Queanbeyan	$716	$64
Sunshine Coast	$536	$48
Central Coast	$519	$47
Wollongong	$476	$43
Geelong	$435	$41

Location	FM/TV	AM
Hobart	$337	$41
Townsville	$282	$41
Cairns	$239	$41
Elsewhere	$41	$41

Submitters were asked the following question about the proposed reform:

> **Question 7**
> Do you have any comments on these tax reform proposals for HPON licences?

We received 2 submissions that commented on this question, both of which were supportive of reduced tax rates for HPON licences to bring them closer in line with commercial broadcasting taxes.

Response to submitters

As there was consensus support from submitters, we have implemented these reforms as proposed.

Proposal to adjust tranche one reforms

The first tranche of reforms, with minor amendments from their initial proposals, came into effect in July 2021. These reforms included:

- a reduction in taxes based on the tax formula for services above 5 GHz, ranging from 50% to 90% and depending on the frequency range and the service
- the introduction of a 'systems price' for earth stations with multiple antennas, with prices commensurate with the spectrum denial of those systems
- the introduction of an additional price discount to encourage more use of the land-mobile 'micro' service model.

Following stakeholder feedback we subsequently proposed some revised definitions for both the earth stations proposal and the land-mobile proposal. For the earth stations proposal, we proposed to remove a clause that required co-located earth stations to have the same centre frequency in order to be eligible for the discount. We expect this change to accommodate a greater range of earth station system configurations. For the land-mobile proposal, we proposed some revised definitions to provide greater clarity around eligible spectrum accesses.

Submitters were asked the following question about the first tranche of reforms:

> **Question 8**
> Do you have any comments on these proposed adjustments to the tranche one reforms?

We received several submissions commenting on adjustments to the first tranche of Spectrum Pricing Review reforms that have been implemented.

Several submissions reiterated support for the introduction of a 'systems price' for earth stations but requested additional changes to definitions and eligibility. One submission questioned whether the pricing rule was consistent with licensing practice and the Spectra licence management system. Two submissions commented that, in addition to the 'micro' power discount, the minimum tax should apply to HPON services with an output power of 10 Watts or less regardless of location. One submission requested that the definition of the 'micro' power discount be revisited.

Response to submitters

We note that there were no issues raised with the intent of the first tranche of reforms implemented. We agree that the current pricing rule for the earth station system discount is not currently consistent with licensing practice and the Spectra licence management system and have amended the rule to conform to our licence management system and licensing practice. In response to the argument for a minimum tax to some HPON services, we do not believe that such a proposal is congruent with the new tax table for HPON services introduced as a part of the second tranche of reforms.

In response to the request to revisit the definition of the 'micro' power discount, we believe that the definition is fit-for-purpose and that the submission had slightly misinterpreted how the micro power factor is applied. To reiterate, the micro power factor is only eligible for enclosed and short-range land mobile services that permit the operation of one or more devices.

Other pricing issues

There were several issues that were initially identified in the Spectrum Pricing Review work program that the ACMA later considered to be more appropriated addressed in other ACMA processes outlined in the FYSO. These included:

> a review of pricing arrangements for scientific licences that can be aligned with the ACMA's consideration of scientific licensing arrangements.

> differences in pricing arrangements for mobile satellite services, television outside broadcasting services, and point-to-multipoint services in the 2 GHz band that can be considered as a part of that replanning process.

We also noted our consideration of ways to promote varying levels of interference protection through pricing. The assigned licence tax formula currently accommodates this idea to some degree; however, we are interested in exploring this idea at a more granular level and for more services.

Submitters were asked the following questions about other pricing issues:

Question 9
Do you have suggestions for any additional pricing measures the ACMA could consider to encourage spectrally efficient technology deployments?

Question 10
Are there any other comments that you would like to give relating to the proposals in this paper or other aspects of the apparatus licence tax regime?

We received several submissions commenting on other aspects of spectrum management and pricing, not all of which were directly related to pricing or the apparatus licence tax regime.

One submission raised the issue of fixed point-to-point 900 MHz studio-to-transmitter link licences, noting that the current pricing is disproportionate to the pricing of the actual licence under which the service operates. Another argued that licence tax changes are not the most effective way of encouraging the uptake of more spectrally-efficient technologies. One submission encouraged the ACMA to investigate area-wide licensing for fixed satellite service gateways in the 18 GHz band and MSS feeders in 7 GHz. Another reiterated their position that spectrum pricing should have no role other than to ensure the efficient allocation and use of spectrum, and to recover the cost of spectrum management. A submission also suggested that spectrum pricing

considerations for private LTE/5G services should not be gauged in direct comparison with the spectrum prices paid at auction by public carriers.

Response to submitters

We acknowledge the general comments relating to licence taxes, efficient allocation and use of spectrum, and cost recovery of spectrum management. For the comment on fixed point-to-point 900 MHz studio-to-transmitter link licences, the underlying technology and spectrum use differ substantially from narrowcast licences, so we do not deem it necessary to benchmark these licence fees against each other. Unfortunately, the other issues raised are beyond the scope of the implementation of the Spectrum Pricing Review. However, they are useful in helping to inform our broader agenda for reform and future considerations. For example, as noted in the FYSO, we will consider the pricing implications for the band and licensing reviews.

Further reforms

We would like to thank all the submitters who have taken the time and effort to engage with the implementation of the Spectrum Pricing Review process. The submissions received have played a pivotal role in informing the policy proposals put forward and eventual outcomes of the review.

We would like to explicitly note that, although the publication of this outcomes paper marks the formal end of the Spectrum Pricing Review process, our pricing reform agenda is ongoing. As such, we always welcome comments on pricing issues for consideration, and we will continue to engage with stakeholders to seek views on proposed changes as appropriate.

Apparatus licence fee calculator

We proposed to develop a new apparatus licence fee calculator in March 2020 in our initial consultation paper to assist existing and prospective licensees to calculate the taxes and charges due on apparatus licences. All submissions received to the proposal were supportive of the initiative and agreed that it would assist in both calculating taxes and charges due on apparatus licences and providing transparency in how these fees are calculated.

While we initially developed an Excel-based calculator, feedback from internal and external stakeholders resulted in the development of a web-based calculator. This calendar launched in May 2022 and is available on the ACMA website.

Using the calculator

The calculator has been developed to help users estimate the annual cost of apparatus licence fees. The calculator should be used in conjunction with the apparatus licence fee schedule, which contains information about how fees are set, examples of how fees are calculated, and additional help in determining which licence is most appropriate for each setting.

Users will first be asked to select the licence type and sub-type that they wish to estimate the taxes and charges for. Depending on the licence type and sub-type chosen, the calculator will work out which division the licence belongs to. This determines the cost structure that applies to each licence and further information such as frequency, geographic area, bandwidth, and power factor that may be required.

Once all applicable factors have been entered into the calculator, it will display the annual tax, issue charge, renewal charge, and instalment charge for the selected licence. If applicable, further information on the interim factors used in the calculation will also be displayed, such as the location weighting, normalisation factor, and the adjustment factor. These are displayed to help provide transparency around how fees are calculated.

Pricing for varying levels of interference protection

As part of our general spectrum management practices, we have been considering ways to promote varying levels of interference protection through pricing. The assigned licence tax formula accommodates this idea to some degree. For example, the ‘low-power’ and ‘micro-power’ discounts relate to specific service models that involve specific notional service areas beyond which licensees acknowledge that the ACMA will generally not protect the service against interference.

We are interested in exploring this idea at a more granular level and for more services, and will publish a consultation paper in Q4 2022 with some broad ideas.

Implementation and next steps

We have implemented the following changes from the second tranche of reforms:

> Simplifying the location weighting tables by consolidating the >30–403 MHz frequency range into a single band.

> Adding a new spectrum location band >100 GHz where licences will generally incur the minimum tax (currently $41.37), reflecting the lower potential for interference at these higher frequencies, and facilitating the use of services expected to require very large bandwidths.

> Reducing tax rates for transmitter licences used to provide HPON services.

The changes are made in the amendment determinations and explanatory statements below:

> Radiocommunications (Transmitter Licence Tax) Amendment Determination 2022 (No. 2)

> Explanatory statement to the Radiocommunications (Transmitter Licence Tax) Amendment Determination 2022 (No. 2)

> Radiocommunications (Receiver Licence Tax) Amendment Determination 2022 (No. 2)

> Explanatory statement to the Radiocommunications (Receiver Licence Tax) Amendment Determination 2022 (No. 2).

The expansion of the Perth and Adelaide medium-density areas will be implemented in mid-2025. We will inform stakeholders again closer to when the changes are due to come into effect.

We also intend to consult further on stopping annual updates to taxes in line with changes to CPI and instead updating taxes based on changes in geography-specific population. We will publish a consultation paper in the near-term providing further details about the proposal and inviting comments from stakeholders.