



Australian Government

Department of Communications and the Arts

Spectrum pricing—review

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Summary of recommendations

Allocation decisions

1. The ACMA should publish guidelines on how it approaches its spectrum pricing decisions.
2. To ensure efficient use of spectrum, the Government and the ACMA should endeavour to charge users of similar spectrum at the same rate.
3. Bespoke pricing arrangements will sometimes be necessary. Where spectrum fees are determined other than by auction or by the administered pricing formula, the ACMA, or the Government where it directs the ACMA on pricing, should publish the reasons for this decision.

Market-based allocations

4. The ACMA should further identify bands to transition from administratively set fees to competitive market-based allocations in its annual work program.
5. In setting reserve prices, the ACMA and the Government should consider the influence of the reserve price on competitive behaviour, and the scope for price discovery through upward movement toward the market value of the spectrum.
6. For spectrum access charges determined by auction, the ACMA should generally require upfront lump-sum payments. There may be circumstances where instalment payments are warranted shortly after the beginning of a licence term. In considering use of instalments, the ACMA should assess the risks to the state of default and the potential impact on competition.

Administered allocations

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.
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.

Legislative and cost recovery framework

9. The Government should consolidate the three existing spectrum tax Acts into one tax Act. The ACMA should continue to have the power to make determinations on the amount of tax under this Act. There should be no changes to the direct charges framework. In addition to the consolidation of the tax Acts, provisions of the separate *Radiocommunications Taxes Collection Act 1983* and the Radiocommunications Taxes Collection Regulations 1985 should be consolidated with the remaining legislation.
10. The apparatus licence taxes and spectrum access charges for spectrum licences should be combined into a single spectrum access charge. This existing apparatus licence tax formula should become the administered incentive pricing formula and should dictate the price paid for administered prices under the spectrum access charge. This formula would be adjusted to remove the minimum tax constraint.
11. The spectrum licence tax and the minimum tax constraint of the apparatus licence taxes should be subsumed into one radiocommunications licence tax. The ACMA should continue to recover direct costs through charges. The ACMA should explore if there are any additional costs that should be recovered through the direct cost mechanisms. The use of charges should be consistent with the Australian Government Charging Framework.



Pricing review principles

In August 2015 the Government asked for a review of spectrum pricing to ensure consistent and transparent arrangements to support the efficient use of spectrum and secondary markets. Clear pricing principles allow Government decisions to be transparent, predictable and accountable. The following principles are the foundation to this review and the proposals. The principles below build on the existing principles that govern the ACMA's general spectrum management activities¹ and provide further context for the ACMA's pricing framework.

Efficiency

The primary economic objective for management of any resource is to maximise the benefits that resource provides to society. This occurs when spectrum is allocated and used efficiently. As a general rule, this objective is more likely achieved if spectrum allocations are made by spectrum users through market mechanisms, rather than administrative allocations by Government. Spectrum is allocated and used efficiently where an equilibrium between supply and demand is met. An excess of demand over supply of spectrum in an area can give rise to congestion. This decreases the quality of services provided, and means that new users aren't able to introduce innovative products and services. In a well-functioning market, prices will adjust upwards to reflect increases in demand, rationing spectrum to those who will put it to the highest value use. Similarly, an excess of supply will mean spectrum isn't being put to use, so prices will adjust down. Prices respond flexibly and ensure that inputs move to their highest value use.

Access to secondary markets can help reduce inefficiencies of spectrum prices. Secondary markets, where spectrum is traded directly between users, is a vital mechanism in allowing spectrum to move to its highest value use over time. Secondary trading is generally regarded as a tool in conjunction with other tools like pricing and auctions for achieving efficient spectrum allocation as the highest value use of spectrum may vary over time.² The proposed Radiocommunications Bill will facilitate this by eliminating hard legislative barriers between different licence systems and types, making the majority of licences freely tradable without approval by the ACMA, and providing greater certainty around end-of-licence arrangements.

Though secondary markets are desirable, such markets take time to develop and may not always be practicable due to technical specifications or the depth and liquidity of the market. Government intervention may be necessary to ensure spectrum is efficiently allocated whether by administered prices or periodic spectrum auctions.

A resource pricing model is consistent with the Australian Government Charging Framework³. Guided by correct price signals, spectrum will tend towards those users who can use it most effectively.

Where there is enough spectrum to satisfy the demand of all interested parties if prices were to be zero, charges should be limited to recovering the ACMA's direct and indirect costs of managing the spectrum. Otherwise, charges should reflect the market value of the spectrum. Charging according to the price a market could have reached enables the Government to send important price signals to spectrum users about the value of the resource being used. The fee can be set via market mechanisms such as auctions, or via Government administratively setting the fees.

¹ ACMA (2016) *Principles for spectrum management* <<http://www.acma.gov.au/Industry/Spectrum/Spectrum-planning/About-spectrum-planning/australian-spectrum-management-principles-spectrum-planning-acma>>

² Plum Consulting (2012) *Spectrum trading in Australia*, report for the Department of Broadband, Communications and the Digital Economy.

³ Department of Finance, *Australian Government Charging Framework—Resource Management Guide No. 302* (July 2016).



This is consistent with international practice. For example, Industry Canada noted in 2010 that the Government's objective in conducting auctions is not to raise revenue, rather it is to award licences fairly, efficiently and effectively so as to ensure that the Canadian public derives the maximum possible benefit from the spectrum resource. The Government should be cautious when setting prices to ensure that unnecessarily high or low prices do not lead to unintended market outcomes.

Cost recovery

The ACMA incurs costs for spectrum regulatory activities such as planning, interference management and coordination, and these costs should be recovered from those using spectrum. Costs are important to identify as the Government should only provide goods where the benefits exceed their costs. If the price received for the spectrum is less than the cost incurred to manage that spectrum, then the Australian taxpayer is worse off in the absence of other public policy benefits. Generally, spectrum's management costs are low compared to its value, and are not prohibitive to spectrum access.

Consistency and simplicity

Under current arrangements there are separate rules, processes and outcomes dependent on the licensing type. The move to a single licensing system under the proposed Radiocommunications Bill enables greater consistency between spectrum users.

A simplified framework should enable licensees to understand and navigate their regulatory requirements, thereby minimising the regulatory burden. It should use the least restrictive approach to reduce regulatory burdens, allowing licensees to focus on optimising their use of spectrum.

Transparency

To efficiently use spectrum, licensees and investors need clear information on how the regulator makes its pricing decisions. This allows businesses to make informed decisions and anticipate Government administrative outcomes. The transparency of pricing frameworks also increases the accountability for the ACMA, who regulates spectrum, and the Australian Government, which provides the broad policy direction for spectrum management.

Australian Government Charging Framework

In April 2015, the Australian Government agreed to implement a whole-of-Government charging framework to apply across the general Government sector. The new spectrum framework principles align with the charging principles of the Australian Government Charging Framework (AGCF) which are transparency, efficiency, performance, equity, simplicity, policy consistency.

The Framework provides that where an individual or organisation creates the demand for a Government activity, they should generally be charged for it, unless the Government has decided to fund the activity. Under this framework (and to ensure transparency), the ACMA would note the cost of management separate to the spectrum access charge. This does not necessarily mean the overall amount paid for spectrum will increase, but rather the management cost and the resource charge are more clearly identified.



Recommendations

Allocation decisions

Publish guidance on spectrum allocation mechanisms

Recommendation 1

The ACMA should publish guidelines on how it approaches its spectrum pricing decisions.

To enable transparency, certainty, and consistency the ACMA should publish clear guidelines and pricing policies.

Bespoke pricing arrangements

Recommendation 2

To ensure efficient use of spectrum, the Government and the ACMA should endeavour to charge users of similar spectrum at the same rate.

Discounted rates introduce allocative and pricing distortions into the market. Charging some users less than other spectrum users means there may be a reduced incentive for the discounted users to use spectrum efficiently. Other subsidy mechanisms like federal and state Government grants or existing taxation policy measures may be better placed to provide financial support directly to non-profit community service organisations not already on the concessions or exemptions lists.

Feedback from consultation

Not all stakeholders supported this recommendation. One stakeholder noted that charging in this way may be problematic for Government providers of public services. In addition, some stakeholders wanted more clarity on the phrase “users of similar spectrum” and what that means (for example are users of similar spectrum those that use spectrum for the same application, within the same allocated band in a similar geographic setting?).

Recommendation 3

Bespoke pricing arrangements will sometimes be necessary. Where spectrum fees are determined other than by auction or by the administered pricing formula, the ACMA, or the Government where it directs the ACMA on pricing, should publish the reasons for this decision.

At times Government policy or the physical limitations of spectrum may create a need for bespoke pricing arrangements (i.e. mechanisms other than market-based and administered pricing allocations). Where bespoke pricing arrangements are used, the reasons for this decision should be published. For example, when the Commercial Broadcasting (Tax) Bill 2017 was introduced into Parliament in June 2017 (and later passed in September 2017), the Minister’s second reading speech noted that the package provided certainty for five years on the taxation arrangements, and that beyond this timeframe the Government did not expect large increases in taxes for broadcast spectrum.



Market-based allocations

Transition to market-based allocations

Recommendation 4

The ACMA should further identify bands to transition from administratively set fees to competitive market-based allocations in its annual work program.

There are a number of spectrum bands that may warrant a transition from administratively set prices to auctions. The ACMA's should consider which bands would be appropriate to move to a market-based allocation process.

Feedback from consultation

Not all stakeholders supported this recommendation, the main reason being that market-based allocations may be inappropriate for public sector agencies to participate in. Note that issue is addressed by recommendation 3.

Reserve prices

Recommendation 5

In setting reserve prices, the ACMA and the Government should consider the influence of the reserve price on competitive behaviour, and the scope for price discovery through upward movement toward the market value of the spectrum.

At a minimum, a reserve price should reflect what the Government is willing to forgo to hold the spectrum instead of allowing it to be allocated to a spectrum user. This is generally quite low as the Government has little use for unused spectrum. Often, reserve prices are set at a higher level to reduce the incentive for anti-competitive behaviour. This is particularly relevant in auctions with a limited number of bidders, where the lack of competition may limit price rises.

Reserve prices should be set at a level that dissuades anti-competitive behaviour, but still allows for price discovery through upwards movement to the market value of the spectrum. Price discovery allows bidders to gauge the value of the spectrum by the bids of others, and adapt their bidding strategies accordingly. If values are not allowed to rise from the reserve price, price discovery doesn't occur. In a scenario where demand for spectrum exceeds supply, rising traffic demand and a competitive market environment, spectrum users should have sufficient incentives to bid prices up to their most efficient point.

Feedback from consultation

The majority of stakeholders agree with this recommendation. However, one stakeholder argued that the reserve price may not be an appropriate mechanism for targeting anti-competitive behaviour as there are already existing mechanisms to do so. For example, major spectrum auctions have been accompanied by an 'associates' disclosure process.



Payment terms

Recommendation 6

For spectrum access charges determined by auction, the ACMA should generally require upfront lump-sum payments. There may be circumstances where instalment payments are warranted shortly after the beginning of a licence term. In considering use of instalments, the ACMA should assess the risks to the state of default and the potential impact on competition.

The ACMA should generally receive upfront payments before the licence period begins because it protects against the risk of payment default. It reduces the complexity and increases the certainty of spectrum auction outcomes. Upfront payments also help to reduce speculative bidding.

However, the Government recognises that long term licences require a large amount of capital. Therefore, there may be circumstances where Government or the ACMA approves short term deferrals. In considering these circumstances, the Government or the ACMA should take into account the risks to competition of payment deferrals (including the role the competition limits are playing), the number and type of bidders at an auction, and the risk to the Government of unpaid licence payments. In these circumstances, requirements such as a bank guarantee over a portion of outstanding funds are appropriate to reduce risk to Government.

Feedback from consultation

Stakeholders were supportive of this recommendation and reiterated that whether upfront or in instalments, payment structure should be consistently applied across all bidders.

Administered allocations

Pricing formula

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.

In circumstances where administrative pricing is applied, the use of a formula provides consistency, transparent calculations, clear guidelines, and the flexibility to adjust for individual situations. Noting that the current formula dates back to 1992, it would be timely for the ACMA to undertake a detailed review of the formula, including consideration of how the parameters used can be more responsive to the underlying value of the spectrum.

Opportunity cost

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.

Opportunity cost is a more sophisticated form of administered pricing. It reflects that in using spectrum, users deny spectrum for others, and that alternative use has value. Opportunity cost approaches set the price at that foregone value. This generally mimics the price a market would have reached, as it means the company who purchases the spectrum likely values it somewhat more than the opportunity cost (leading to profits), and the person who misses out would prefer to put their dollars to another use. If



the use of spectrum isn't denying anybody else (in the case where supply of spectrum exceeds its demand), then its opportunity cost is zero. However, if it does deny use of the spectrum (where demand exceeds supply), then the opportunity cost increases with the value of the spectrum.

Feedback from consultation

Some stakeholders, including broadcasters and public sector agencies opposed this recommendation. The predominant reason for this was their view that the opportunity cost pricing may not necessarily take into account the positive externalities associated with a service, such as scientific discovery or broadcasting. While the Department recognises these positive externalities, opportunity cost pricing enables the Government to assess the relative value of the spectrum. Recommendation 3 recognises that bespoke pricing arrangements may be necessary.

Legislative and cost-recovery framework

Legislative framework

Recommendation 9

The Government should consolidate the three existing spectrum tax Acts into one tax Act. The ACMA should continue to have the power to make determinations on the amount of tax under this Act. There should be no changes to the direct charges framework. In addition to the consolidation of the tax Acts, provisions of the separate *Radiocommunications Taxes Collection Act 1983* and the *Radiocommunications Taxes Collection Regulations 1985* should be consolidated with the remaining legislation.

The power to charge for spectrum is through a complex hierarchy of legislative arrangements. There are six Acts and many legislative instruments that enable the current pricing framework. The single licensing system offers the opportunity to reduce the volume of enabling legislation and simplify pricing. The number of Acts has been halved (from six to three) and the number of instruments required is therefore also reduced. Moving to a uniform pricing structure would increase transparency for licensees and differentiate between cost recovery and value-based fees.

Using this framework, the ACMA will set cost-recovery taxes (reflecting the costs of managing that spectrum) and also set value-based charges (reflecting the value of the spectrum). A spectrum user will pay both charges.

Value-based fee framework

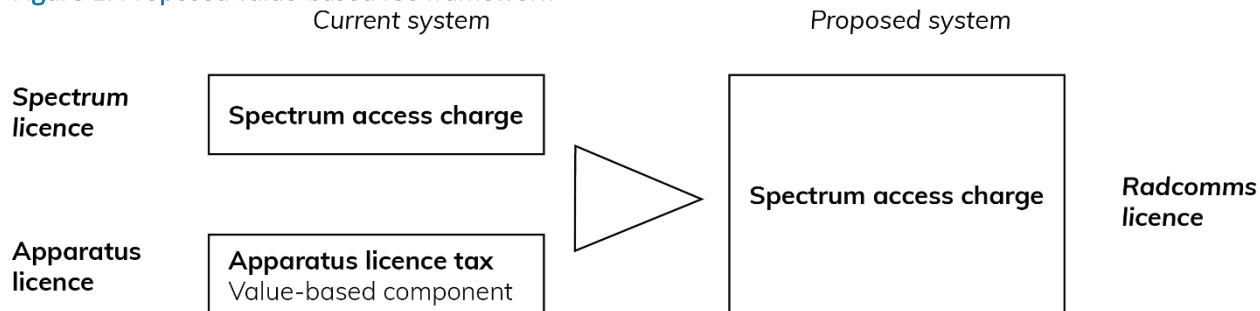
Recommendation 10

The apparatus licence taxes and spectrum access charges for spectrum licences should be combined into a single spectrum access charge. This existing apparatus licence tax formula should become the administered incentive pricing formula and should dictate the price paid for administered prices under the spectrum access charge. This formula would be adjusted to remove the minimum tax constraint.

A value-based fee reflects that spectrum has considerable value. Setting the price at the level the market would have reached drives the efficiency of spectrum allocations. The merging of two licensing systems into one creates the need for one resource charge.



Figure 1: Proposed value-based fee framework



Cost recovery framework

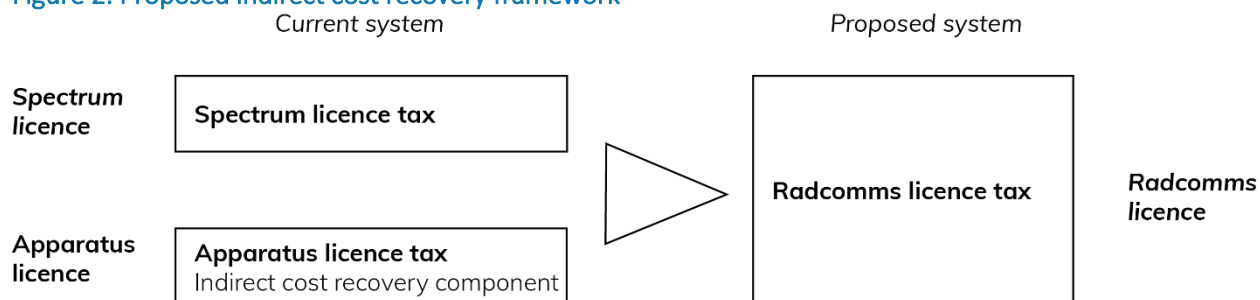
Recommendation 11

The spectrum licence tax and the minimum tax constraint of the apparatus licence taxes should be subsumed into one radiocommunications licence tax. The ACMA should continue to recover direct costs through charges. The ACMA should explore if there are any additional costs that should be recovered through the direct cost mechanisms. The use of charges should be consistent with the Australian Government Charging Framework.

The Australian Government’s Charging Framework recommends that both direct and indirect costs should be recovered through fees.⁴ As a general rule, the ACMA should set charges to recover its regulatory costs in full. Spectrum users who receive a direct benefit from the services provided by the ACMA should pay for these services. Spectrum users who receive an indirect benefit from general regulatory activities should be apportioned a reasonable share of costs.

Given there will no longer be a clear division between two licensing systems, a consistent approach to cost recovery in setting taxes and charges is required. Unlike direct costs, indirect costs can only be recovered through a tax. A new radiocommunications tax will replace the existing spectrum licence tax and the indirect cost recovery component (i.e. the minimum tax which is currently around \$40) of the apparatus licence tax.

Figure 2: Proposed indirect cost recovery framework



⁴ Department of Finance, *Australian Government Charging Framework—Resource Management Guide No. 302* (July 2016).

