



Spectrum Management in Radio Licensing Regime

Industry Workshop

Ministry of Economic
Development



Manatū Ōhanga

Agenda

- 10:00 am – 10:45 am Discussion Document
- 10:45 am – 11:00 am Morning Tea
- 11:00 am – 11:45 am Technical Report
- 11:45 am – 12:00 pm Q&A



Overview

- Very early stage of policy development
- No changes are proposed at this stage
- The main objective is to gather better evidence and test the Ministry's thinking
- Primarily an economic analysis



Background

The Radio Licensing Regime has not been subject to major reviews since 1989.

MED (2005) Review of Radio Spectrum Policy in New Zealand

- does not recognise economic values
- no competitive pressure
- potentially inefficient



Scope

Excluded:

- Existing Management Rights Regime
- GURLs
- Frequency bands below 50 MHz and above 30 GHz



Objectives of the RLR

Efficiency

Maximising economic, not just technical, efficiency

Effectiveness

Ensuring allocated spectrum is fit for purpose

Equity

Providing for public service, international obligations and other social/cultural objectives

Fairness and transparency among users (e.g. between commercial and non-commercial users)



Problem & Status Quo

Limits of Economics:

Spectrum is not a typical commodity

For example: demand is often determined by the availability of equipment and technology produced overseas.



Status Quo

First-come-first-served administrative regime

80% of spectrum below 30 GHz is still in radio licensing regime

Currently 29,819 licences issued under the RLR*, which support a wide range of commercial and non-commercial services

* Total number of spectrum and radio licences is 39,939



Problems?

Initial scan by Hugh Railton Ltd. More detailed studies will be needed later

Identification of problem requires reliable data on the *nature* and *size* of the problem, as well as *future* trend, in terms of

- Excess demand

- Barrier to Entry

- Technical Innovation/Efficiency

There are potential issues but little conclusive evidence of problems, nor the scale of such problems, if any.



Excess Demand

Economic reasoning depends on the assumption of excess demand (and thus scarce resources). This assumption may not hold in the Radio Licensing Regime because

- difficulty in estimating future demand based on currently available data
- no indication of widespread problems of excess demand across the spectrum
- potential for decreasing use of spectrum in some bands, but estimates are highly uncertain
- Public safety users are moving to digital platform, which frees up spectrum
- no evidence of ‘spill-over’ use (excess demand in other comparable spectrum)
- possibility of increasing supply through natural technological evolution/technical planning



Excess Demand

Specific problems are identified in

- K band fixed links for some areas (being considered as part of 800/900 MHz band re-planning)
- F band land mobile (public safety users migrating to ESC band)



Barrier to Entry

No barriers have been identified; new entrants can usually be accommodated given the excess supply of spectrum

A number of bands have a limited number of users, but may be due to limited demand for those parts of the spectrum, or the market structure of related markets, rather than competition problems (e.g. limited number of users in fixed service bands)



Technical Innovation/Efficiency

Estimating economic efficiency is very difficult at this stage

Technical efficiency is also difficult to measure:

- some indication of low technical efficiency, e.g. the use of 25kHz channels instead of 12.5 kHz channels in LMR bands
- administrative regime provides few incentive to upgrade equipment
- no reliable evidence as to the magnitude or cause.

However there is a trade-off between technical efficiency/innovation and the need for certainty in spectrum investment.



Summary 1

In short, no conclusive evidence of substantive problem in the radio licensing regime. It appears to be working reasonably well in satisfying demand



Remedial Options

Summarising MED's current thinking on the pros and cons of main options, not government policy

- Common considerations
- Status Quo (administrative licensing)
- Management Rights
- Administrative Incentive Pricing



Common Considerations

Local Issues e.g. Auckland specific regulation?

Competition safeguards e.g. hoarding?

Transitional issues and existing uses e.g. band re-planning and migration of licences



Option 1: Status Quo

Main feature: first-come-first- served

	pros	cons
Efficiency (inefficient if there is a shortage of supply)	simple; administrative cost only; certainty for existing users	inflexible; risk of “hoarding”
Effectiveness	high level of certainty; preserving scope for future change	inflexible
Equity	cost effective mechanism to meet non-commercial needs	no particular concerns



Option 1 Status Quo

Potential improvements:

- Devolution of some licensing functions (from MED to other agencies/organisations)
- Technical planning to expand capacity/implement more innovative and efficient technology
- “Access seeker” regime (negotiate/arbitrate for competing uses)



Option 1 Status Quo – Potential Improvements

	Benefits	Costs
Devolution	more flexibility; efficiency incentives; reduce administrative costs to the Govt.	voluntary vs. compulsory membership; difficulty of coordination and quality; potential competition concerns;
Technical Planning	expand supply at a relatively low cost; better coordination; wider perspective	Costs of re-planning/migration; The Government might not be the best party to make decisions about efficiency and innovation
“Access seeker”	more flexibility; innovative solutions/collaboration; potentially introduce some market efficiency	potentially high transaction costs; uncertainty/not practical when the market is complex or volatile



Option 2 Management Rights

Main feature: tradable property rights

Original intention of the 1989 reform was to move all spectrum to MRR, but RLR was retained because

- Some public interest use of spectrum does not fit easily with a market mechanism
- Costs of conversion to property rights and re-engineering would be too high compared with potential efficiency gain
- Supply exceeds demand and is likely to be adequate for future growth

Do these reasons still hold?



Option 2 Management Rights

Design issues to consider

- Defining property rights (packaging of spectrum to ensure it has commercial value to potential buyers)
- Determining method of allocation (auction/pricing etc.)
- Providing for non-commercial use
- Safeguarding competition
- Ensuring adequate transition planning for existing users

Timing issues: when current supply exceeds demand, low market price might encourage “hoarding”.



Option 2 Management Rights

	pros	cons
Efficiency	Efficient by definition in a well-designed market	Costs of market design; Costs of ensuring market is competitive over time; lack of secondary market activity
Effectiveness	Potentially more effective given the incentives for right holders	Problems of interference protection at the boundary of property rights
Equity	More “transparent” in an economic sense; preventing abuse of non-commercial spectrum	Difficulty of quantifying or commercialising non-commercial use (Crown MR as a potential remedy)



Option 3 Administrative Incentive Pricing

Main feature

- Substitute for a market when a real market is not feasible
- Licences are still administratively assigned but with a price
- Price calculated to reflect market price
- The Government or an independent regulator sets the price
- Apply across the public and private sectors

UK AIP scheme



Option 3 Administrative Incentive Pricing

	pros	cons
Efficiency	<p>Potential improvement of efficiency, especially technical efficiency</p> <p>Potential indirect market trading (inefficient players excluded from the market)*</p> <p>* This can be counter-productive if a market is actually viable</p>	<p>Practical difficulty to target economic efficiency (over-emphasizing technical efficiency/productive efficiency);</p> <p>reliance on regulators to guess market price (regulatory failure);</p> <p>current methodology (least cost alternative) too simplistic;</p> <p>rationale of AIP unclear when there is excess supply;</p> <p>costs of calculating/adjusting the price</p>



Option 3 Administrative Incentive Pricing

	pros	cons
Effectiveness	Stronger incentives to maximise value of spectrum, (but still administratively allocated in the first place)	Emphasis on technical efficiency might conflict with other business needs (upgrading spectrum equipment vs. improving service)
Equity	Increase transparency by better reflecting economic value of spectrum	Over-simplified methodology not necessarily “transparent”; unfair to existing users if there is no alternative use/competition; application to public sector problematic



Summary 2

Options have both costs and benefits. The relative weight depends on particular circumstances. Evaluation is difficult at this stage without evidence of potential problem.



Next Steps:

Submissions on the discussion document by **19 May**

Reporting back to Minister **end of June**

Further work if there is strong evidence of potential problem; possibility for focusing on particular bands/issues in the time period of **2009-2012**

