



***DRAFT***

**Pricing Principles for Declared Transmission  
Capacity Services — a guide**

**June 2004**

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## Glossary

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Access provider	Carrier or carriage service provider who supplies declared services to itself or other persons — see s. 152AR of the Act.
Access seeker	Service provider who makes, or proposes to make, a request for access to a declared service under s. 152AR of the Act.
Carrier	Holder of a carrier license granted under the Telecommunications Act 1997
CSP	A carriage service provider as defined under the Telecommunications Act 1997
Declared service	An eligible service declared by the Commission under s. 152AL of the Act. Once an eligible service is declared, access providers are required to supply the service to service providers upon request (access seekers) — see s. 152AR of the Act.
Eligible service	This term is defined in s. 152AL of the Act. An eligible service is a carriage service between two or more points (at least one of which is in Australia), or a service that facilitates the supply of such a carriage service.
Optical fibre	Cable made of glass fibres through which signals are transmitted as pulses of light.
Service provider	Defined in s. 86 of the <i>Telecommunications Act 1997</i> . The term refers to a carriage service provider or a content service provider.



# 1. Introduction

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Under Part XIC of the *Trade Practices Act 1974* (“the Act”), the Australian Competition and Consumer Commission (“the Commission”) is responsible for arbitrating disputes about access to particular declared services and also for assessing access undertakings relating to access to such declared services. One of the prime issues that arise under these processes is the determination of an appropriate access price.

The transmission capacity service was deemed declared in 1997. The Commission has never had to issue an arbitrate decision in relation to this service, albeit that two disputes have been notified these were subsequently withdrawn. Consequently, the Commission has not developed pricing principles for the transmission capacity service.

However, with the Commission’s recent review of the transmission capacity service declaration now complete, and the scope of the declaration varied, it is now required under section 152AQA of the Act to develop pricing principles for elements of the transmission capacity service that are subject to ongoing declaration.

In July 1997, the Commission published *Access Pricing Principles: Telecommunications — a Guide* (“the Guide”). The purpose of the Guide was to advise the telecommunications industry and other interested parties about the principles that are likely to be relevant in assessing undertakings or in arbitrating access disputes. It set out the following broad principles:

- the access price should be based on the cost of providing the service;
- the access price should not discriminate in a way which reduces efficient competition;
- the access price should not be inflated to reduce competition in dependent markets; and
- the access price should not be predatory.

In its Guide, the Commission noted that when determining a cost-based price, it would generally seek to determine the Total Service Long-Run Incremental Cost (TSLRIC) of providing the service. However, it also noted that the applicable approach would be assessed on a case-by-case basis for each service.

Since the Guide was released, the Commission has developed pricing principles for the following declared services:

- Unconditional Local Loop Service (ULLS);
- Non-dominant Public Switched Telephone Network (PSTN);
- GSM and CDMA Mobile Services;
- Local Carriage Services (LCS); and
- PSTN Originating and Terminating Services.

With the exception of GSM and CDMA Mobile Services and LCS, the Commission has employed some sort of TSLRIC pricing methodology to determine and access price.

## **1.1. Purpose**

The purpose of this guide is to inform industry, government and other interested parties of the pricing principles the Commission will apply, in the usual case, when considering an access dispute or assessing an undertaking in relation to pricing for the declared transmission capacity service.

Although the principles are not intended to unreasonably limit the outcomes of commercial negotiations, an indication of the approach the Commission is inclined to take if required to arbitrate a dispute or assessing an undertaking may assist parties in narrowing the boundaries for those negotiations. For the same reason, these principles may also be a useful tool in alternative dispute resolution processes.

In summary, the Commission recommends that a TSLRIC approach should be adopted when determining an appropriate access prices for the transmission capacity service.

The Commission's power to make available general information on the carrying out of its functions or the exercise of its powers under the Act is provided for under Section 28(1). However, the pricing principles are not binding on the Commission and parties to arbitrations are still able to address the Commission on the relevance and applicability of the principles having regards to the circumstance of their dispute.

## **1.2. Timetable and submissions**

The Commission encourages industry participants, other stakeholders and the public more generally to consider the pricing principles for the declared transmission capacity services set out in this guide, and make submissions to the Commission by cob 30 July 2004.

To foster an informed and robust consultative process, the Commission proposes to treat all submissions as non-confidential, unless the submissions indicate otherwise. Unless the author of a submission requests that the submission be kept confidential, written submissions given to the Commission will be made available to interested parties upon request.

Submissions should be addressed to:

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In addition to a hard copy, people making submissions are encouraged to provide an electronic copy of the submission to [grant.young@acc.gov.au](mailto:grant.young@acc.gov.au)

Enquiries can be made to Grant Young on (03) 9290 1854.

## 2. Legislative Criteria

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### 2.1. Background

The object of Part XIC of the Act is to promote the long-term interests of end-users (LTIE) of carriage services or of services provided by means of carriage services.<sup>1</sup> The LTIE will generally be promoted by lower prices (that are sustainable), higher quality of service and greater choice of products. The outcomes will be promoted by:

- competition in markets for telecommunications services;
- any-to-any connectivity; and
- encouraging the economically efficient use of, and investment in, telecommunications infrastructure.<sup>2</sup>

This will be achieved, in part, through establishing the rights of third parties to gain access to services which are necessary for the competitive supply of services to end-users. Such services are termed declared services. Declaration means that an access provider supplying transmission capacity to itself or another person must also supply the service, upon request, to carriers or carriage service providers (CSPs) in accordance with the standard access obligations in section 152AR of the Act.

If an access seeker is unable to agree with the access provider about the terms and conditions on which the access provider is to comply with its standard access obligations, and no approved undertaking applies to the service in question, the access seeker or the access provider may notify the Commission in writing that an access dispute exists.<sup>3</sup>

Access prices are determined:

- in the context of the Commission arbitrating an access dispute between the provider of the declared service (the access provider) and the service provider seeking access to the declared service (the access seeker) — Division 8 of Part XIC of the Act; and
- in the context of the Commission approving an access undertaking proposed by a carrier or CSP — Division 5 of Part XIC of the Act.

In the absence of a Ministerial pricing determination, the Commission seeks to develop an appropriate methodology for the pricing of declared transmission capacity services which the Commission can apply both in arbitrating an access dispute, and in assessing an access undertaking.

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<sup>1</sup> Section 152AB(1) of the Act.

<sup>2</sup> Section 152AB(2) of the Act.

<sup>3</sup> Subsection 152CM(1) of the Act.

## 2.2. Reasonableness criteria

Under Part XIC of the Act, the Commission cannot accept an undertaking unless satisfied that the terms and conditions specified are reasonable. In determining whether terms and conditions are 'reasonable', regard must be had to the following matters<sup>4</sup>:

- whether the terms and conditions promote the LTIE of carriage services or of services supplied by means of carriage services;
- the legitimate business interests of the carrier or CSP concerned, and the carrier's or provider's investment in facilities used to supply the declared service concerned;
- the interests of persons who have rights to use the declared service concerned;
- the direct costs of providing access to the declared service concerned;
- the operational and technical requirements necessary for the safe and reliable operation of a carriage service, a telecommunications network or a facility; and
- the economically efficient operation of a carriage service, a telecommunications network or a facility.<sup>5</sup>

When arbitrating access disputes the Commission must have regard to the same matters as those set out above. In addition, in making a determination, the Commission must take into account the value to a party of extensions, or enhancement of capability, whose cost is borne by someone else.<sup>6</sup>

Access prices and the processes of competition, which Part XIC is intended to facilitate, should encourage suppliers to produce the kinds of services most highly valued by end-users, improve customer choice of services and service quality, and supply services in the least-cost way. The discussion below briefly interprets these legislative criteria from the perspective of access pricing. A more detailed discussion is in the Commission's 1997 *Access Pricing Principles* paper<sup>7</sup>.

### 2.2.1. Long-term interests of end-users

The LTIE will, in general, be promoted by lower prices (that are sustainable), higher quality of service and greater choice of products. These outcomes will be promoted by:

- competition in markets for telecommunications services;
- any-to-any connectivity; and

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<sup>4</sup> This does not, by implication, limit the matters to which regard may be had - Section 152AH(2)

<sup>5</sup> Section 152AH(1) of the Act.

<sup>6</sup> Section 152CR(1)(e) of the Act. It should also be noted that in making an interim determination, the Commission may have regard to at least some of these criteria but is not obligated to have regard to all such matters (s. 152CPA).

<sup>7</sup> ACCC *Access pricing principles, telecommunications - a guide*, July 1997, Canberra.



- encouraging the economically efficient use of, and investment in, telecommunications infrastructure.

### ***Promoting competition in markets for telecommunications services***

Part XIC is concerned with opening up to competition potentially competitive markets that are dependent on the services of telecommunications infrastructure (dependent markets). Where existing conditions do not already provide for the competitive supply of these services, Part XIC (including the pricing of access) aims to facilitate access to these services to encourage the efficient entry of firms and efficient competition in dependent upstream or downstream markets.

### ***Any-to-any connectivity***

Any-to-any connectivity is the ability of end-users of different networks to communicate. It benefits users by allowing users of one network to communicate with users of other networks.

### ***Encouraging economically efficient use of, and investment in, telecommunications infrastructure***

The economically efficient use of, and investment in, infrastructure comprises three (interdependent) elements:

- dynamic efficiency — firms have the appropriate incentives to invest, innovate, improve the range and quality of services, increase productivity and lower costs through time;
- productive efficiency — firms have the appropriate incentives to produce services at least cost, and production activities are distributed between firms such that industry-wide costs are minimised; and
- allocative efficiency — firms employ resources to produce goods and services that provide the maximum benefit to society. An important condition for allocative efficiency is that prices for services at least reflect the value society places on the next best alternative use of the resources used to produce the service.

Dynamic efficiency will be promoted by an access price that provides a normal (risk-adjusted) commercial return on investments and does not distort the ‘build or buy’ decision. To encourage efficient investment in infrastructure (in the long-term), an access price should be generally sufficient to cover the prudently incurred costs of providing infrastructure including a normal commercial return on investment commensurate with the risks of that investment.

Productive efficiency will be promoted by an access price that allows for the more efficient sources of supply to displace the less efficient. An access price which encourages the entry of lower-cost (or higher quality) firms within these potentially competitive markets will promote productive efficiency throughout these integrated production chains.

Allocative efficiency consists of a number of components. First, infrastructure should not be under- or over-utilised. Services to end-users should be produced so long as the value of society’s resources used to provide those services does not exceed the value of the services to

the users. Second, an access price should minimise distortions in the use of infrastructure. An access price should not artificially bias the use of one technology over another in the provision of a service or the production of a particular service over another.

### **2.2.2. Legitimate business interests of the carrier or CSP**

Regard to the legitimate business interests of access providers requires an access price that at least provides a normal commercial return on prudent investment.<sup>8</sup> The services to which Part XIC will mostly apply are provided using highly capital intensive and specialised infrastructure, the costs of which are largely sunk before the service is provided. It is legitimate for the carrier or CSP to seek to recover the costs of prudent investment from its commercial activities, including the provision of access services from other service providers.

However, it is unlikely the legitimate business interests extend to achieving a higher than normal commercial return through the use of market power, such as that over transmission capacity services by a network - whether large or small. For example, an access price should not be artificially inflated by the lack of competition in the supply of infrastructure services.

### **2.2.3. Interests of persons who have rights to use the declared service**

The ability of an access seeker to compete in the supply of a service in a dependent market should be based on the cost and quality of its service relative to its competitors. For example, an access price should not artificially protect a vertically-integrated access provider from being displaced by a more efficient access seeker in a downstream market.

### **2.2.4. The direct costs of providing access**

Direct costs are those costs necessarily incurred (caused by) the provision of access. An access price should not be inflated to recover any profits the access provider (or any other party) may lose in a dependent market as a result of the provision of access. As stated in the explanatory memorandum to the Trade Practices Amendment Act:<sup>9</sup>

... 'direct' costs of providing access are intended to preclude arguments that the provider should be reimbursed by the third party seeking access for consequential costs which the provider may incur as a result of increased competition in an upstream or downstream market.

### **2.2.5. Operational and technical requirements necessary for the safe and reliable operation of a carriage service, a telecommunications network or a facility**

An access price should not lead to arrangements between access providers and access seekers that will encourage the unsafe or unreliable operation of a carriage service, telecommunications network or facility.

### **2.2.6. The economically efficient operation of a carriage service, a telecommunications network or facility**

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<sup>8</sup> The Commission may also take into account access providers' obligations to shareholders and other stakeholders.

<sup>9</sup> *Trade Practices Amendment (Telecommunications) Bill 1996 Explanatory Memorandum*, at p. 44.

This criterion is similar to the productive and allocative efficiency elements described above. An access price should encourage access providers to select the least-cost method of providing the service and provide those services most highly valued by access seekers.

These criteria are interdependent. In some cases promoting one criterion will promote another. In other cases, however, the criteria are conflicting. For example, telecommunications is an industry where the delivery of many services is characterised by economies of scale and scope. Therefore, a central dilemma which must be confronted is that an access price that promotes the economically efficient use of infrastructure in the short-term may, in some cases, not encourage efficient investment in infrastructure and therefore may not be consistent with the legitimate business interests of the access provider nor in the LTIE.

## **3. The declared service**

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### **3.1. Transmission capacity services**

Transmission capacity is a generic service that can be used for the carriage of voice, data or other communications using wideband or broadband carriage (the minimum bandwidth in the current declaration is 2 Mbps). Carriers/CSPs can use transmission capacity to set up their own networks for aggregated voice or data channels, or for integrated data traffic (such as voice, video, and data).

There are a number of types of transmission capacity services, including:

- intercapital transmission;
- ‘other’ transmission;
- inter-exchange local transmission; and
- tail-end transmission.

Intercapital transmission refers to transmission between transmission points located in different capital cities. Under the service description of the existing transmission capacity service declaration, this includes transmission between the cities of Melbourne, Sydney, Canberra, Brisbane, Adelaide and Perth.

‘Other’ transmission refers to transmission between transmission points located in different call charge areas, except for those between the capital cities listed in the previous paragraph. For example, it includes transmission between Adelaide-Darwin, Perth-Darwin and Melbourne-Hobart, as well as transmission along capital-regional (e.g. Sydney-Albury) and regional-regional (e.g. Geelong-Ballarat) routes.

Inter-exchange local transmission refers to transmission between transmission points located at or virtually co-located with an access provider’s local exchanges, that are within a single call charge area. In functional terms, these transmission links, together with switching and network management functions constitute the inter-exchange network, which carries traffic within a call charge area, but where the transmission points are not linked to the same local exchange.

Tail-end transmission refers to transmission between a point at a customer location and some point on the access seeker’s network (such as a point of interconnection or “POI”). For example, in the case of a customer whose premises are located near an access provider’s local exchange where there is a transmission POI, the transmission of traffic from that customer premise to the access provider’s local exchange, and hence to the transmission POI, would constitute tail-end transmission.

### **3.2. Review of transmission declaration**

In 2003, the Commission commenced a public inquiry to review the transmission capacity service declaration. The review, which was required under the section 152ALA of the Act, was to determine, having regard to the LTIE, whether to:

- allow the declaration to expire without making a new declaration;
- extend the current expiry date of the existing declaration by a period of up to five years; or
- introduce a new declaration different to the current one.

On 5 September 2003, the Commission released a discussion paper seeking comment on various aspects of the market(s) within which transmission services are supplied. The Commission received five submissions in response to this discussion paper.

On 23 December 2003, the Commission released its draft view (“the draft report”) that the declaration should be varied to exclude nominated capital-regional transmission routes, and potentially CBD inter-exchange transmission in the major capital cities. The draft report also recommended that the existing intercapital monitoring program be curtailed to focus on the Melbourne-Adelaide and Adelaide-Perth (“east-west”) routes for 12 months. The Commission received four submissions in response to its draft report.

On 1 April 2004, after considering all submissions received during the public inquiry and following further market inquiries, the Commission released its final decision that the transmission capacity service declaration should be allowed to expire and replaced with a new declaration that took affect from 1 April 2004. Specifically, the new declaration:

- leaves intercapital transmission (i.e. transmission between Adelaide, Brisbane, Canberra, Melbourne and Perth) outside the scope of declaration;
- leaves inter-exchange and tail-end transmission within the scope of declaration; and
- excludes 14 nominated capital-regional routes from declaration.

The capital-regional routes that have been removed from declaration are listed below in Table 1.

**Table 1: Capital-regional routes removed from declaration**

NSW	Victoria	QLD	SA
Sydney-Albury	Melbourne-Ballarat	Brisbane-Toowoomba	Adelaide-Murray Bridge
Sydney-Lismore	Melbourne-Bendigo	Brisbane-Gold Coast	
Sydney-Newcastle	Melbourne-Geelong		
Sydney-Grafton	Melbourne-Shepparton		
Sydney-Wollongong			
Sydney-Taree			
Sydney-Dubbo			

Under section 152AQA, the Commission is now required to develop pricing principles for the elements of the transmission capacity service that are subject to ongoing declaration as soon as practicable.

### 3.3. Declared elements

Following the recent declaration decision, the service description for the transmission capacity declaration (**Appendix 1**) includes all the transmission capacity services outlined in section 3.1 except for transmission between:

- one customer transmission point and another customer transmission point;
- one access seeker network location and another access seeker network location;
- a transmission point in one exempt capital city (i.e. Adelaide, Brisbane, Canberra, Melbourne, Perth and Sydney) and a transmission point in another exempt capital city;
- a transmission point in Sydney and a transmission point in any of the following regional centres; Albury, Lismore, Newcastle, Grafton, Wollongong, Taree and Dubbo;
- a transmission point in Melbourne and a transmission point in any of the following regional centres; Ballarat, Bendigo, Geelong and Shepparton;
- a transmission point in Brisbane and a transmission point in any of the following regional centres; Toowoomba and the Gold Coast; and
- a transmission point in Adelaide and a transmission point in Murray Bridge.

In this context, a **customer transmission point** is a point located at customer equipment at a service provider customer's premises in Australia (for the avoidance of doubt, a customer in this context may be another service provider) and an **access seeker network location** is a point in a network operated by a service provider that is not a point of interconnection or a customer transmission point.

The declaration provides for transmission at the designated rates of 2.048 Megabits per second, 4.096 Megabits per second, 6.144 Megabits per second, 8.192 Megabits per second, 34 to 45 Megabits per second, 140/155 Megabits per second, or higher orders.



## 4. Industry views on appropriate pricing principles for the transmission capacity service

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During the recent public inquiry the Commission received information from a number of submitters on the appropriate method for developing pricing principles for transmission capacity services. The majority of submitters focussed on TSLRIC as the appropriate method for developing pricing principles.

Optus identified two options that may well be suited to developing pricing principles for the transmission capacity service, namely:

- the TSLRIC pricing methodology based on forward-looking costs structured in such a manner that recognises many of the declared routes have been funded by the USO; and
- parity between the price reduction on competitive routes and price reductions on Telstra's monopoly routes.<sup>10</sup>

Optus noted that TSLRIC based on forward-looking costs would comprise an appropriate pricing principle for transmission capacity services because:

- the methodology ensures that asset owners have the ability and incentive to maintain their assets, as TSLRIC enables access providers to recover their legitimate costs of service provision;
- it seeks to establish what infrastructure has been prudently incurred by the asset owner, which goes some way to encouraging dynamic efficiency; and
- it promotes long-run allocative efficiency by providing price signals that reflect the long-term value of resources embodied in the service.

In Optus's view, TSLRIC is not an appropriate tool for sending the correct investment "build-buy" signals.

This is because it is the access seekers' perceived *average* cost of build that forms the relevant basis for build-buy decisions. To the extent that the access seekers' average costs may be completely unrelated to the access providers' incremental costs, TSLRIC does not have the capacity to promote efficiency in this respect, despite often being cited as doing so.<sup>11</sup>

Nevertheless, for the declared routes which are by definition not potentially competitive, Optus considers TSLRIC appropriate as access prices do not need to provide incentives for efficient build, because build will always be an inefficient option.

If the Commission decides to adopt TSLRIC as a pricing principle, when attempting to estimate the TSLRIC, Optus noted that the Commission must bear in mind that a large portion of the costs of transmission have been funded not by Telstra per se, but by the USO. Elaborating on this, Optus claimed that because the USO provides for the provision of certain

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<sup>10</sup> *Optus submission to September 2003 discussion paper, pp 12-14.*

<sup>11</sup> *Ibid, p. 14.*



telephony services to net cost areas (NCAs), it has necessitated the building of network infrastructure to NCAs. Therefore, the costs of the USO incorporate the costs of building and maintaining that infrastructure. To the extent that many of Telstra's monopoly transmission routes fall within NCAs, the network costs of transmission over those routes should not be recoverable by Telstra.

Optus notes that the provision of non-USO services over the USO funded transmission routes will have required additional investment by Telstra in capacity over and above the capacity required to fulfil the USO. These costs should be recoverable by Telstra through access prices. However, the level of recoverable costs must be limited to the costs incurred by Telstra of expanding capacity over the existing USO funded transmission infrastructure. Access prices should not reflect any of the initial infrastructure roll-out costs. This is because in the absence of the USO, by definition, the transmission routes would not have been built.

The second pricing principle option raised by Optus is the parity in price reductions between the competitive intercapital routes and Telstra's monopoly routes. As discussed earlier, competition provides incentives for carriers to reduce prices where possible. The significant price reductions experienced in the intercapital transmission market provide tangible evidence of the strength of these incentives. On the other hand, the absence of competition over many of the declared routes means that the access provider has few incentives to reduce prices.

Optus considers that tying transmission price reductions on the declared routes to the price reductions experienced in the competitive market will provide an efficient, market-based means for imposing downwards pressure on access prices in a manner that mimics competitive outcomes.

PowerTel submitted that the appropriate pricing principle for transmission services is TSLRIC as it will best promote the LTIE in the supply of downstream services.<sup>12</sup>

AAPT submitted that TSLRIC pricing principles are theoretically the most appropriate pricing principles for the transmission capacity service. However, AAPT acknowledges that there are a number of characteristics of transmission capacity that would make application of such an approach difficult – most notably that fact that the majority of the long-run costs are fixed costs. In addition it is likely that cases the Commission would be called upon to arbitrate will be the cases where there are no established demand characteristics. The Commission has noted that the use of TSLRIC is appropriate where:

The service [is] well developed in the market and has established demand characteristics. The pricing principles may not be appropriate for new services which are not well developed or for which there is a high degree of risk associated with uncertainty about demand.<sup>13</sup>

In these circumstances, AAPT noted that until the relevant markets mature, it may be preferable for the Commission to first approach pricing issues using its observation of prices

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<sup>12</sup> PowerTel submission to the September 2003 discussion paper, p. 7.

<sup>13</sup> ACCC, Access pricing principles: telecommunications guide, July 1997, p. 13.

the access provider charges itself, and comparisons of pricing of similar transmission services within Australia.<sup>14</sup>

In its *Competition in Data Markets* report, the Commission flagged the use of TSLRIC for pricing of 'inter-city' transmission.<sup>15</sup> While this service is not within the scope of the new declaration, some of the issues raised by submitters to the 1998 inquiry were considered by the Commission to be relevant in the regulatory context, namely:

- appropriate pricing where excess capacity is present;
- pricing which reflected differing economies of scale and scope;
- pricing which reflected differing risk/return profiles between suppliers; and
- the development of pricing structures reflecting length of commitment, volumes purchased and a 'whole of business' approach.<sup>16</sup>

These issues have been considered in the development of the pricing principles for transmission services outlined in this guide.

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<sup>14</sup> AAPT submission to the September 2003 discussion paper, p. 6.

<sup>15</sup> ACCC, *Competition in Data Markets*, November 1998, p. 66.

<sup>16</sup> *ibid*, p. 67.

## **5. Comparison of pricing methodologies**

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The Commission considers that there are two possible pricing methodologies which are appropriate to assess the effects of against the legislative criteria outlined in Chapter 2. These are:

- total service long-run incremental cost; and
- benchmarking of the access prices.

The Commission considers that a retail-minus approach may not be suitable, in this instance, as the majority of transmission capacity is unlikely to be sold as a retail service – with the possible exception of leased lines. As such, there often will not be retail prices to rely on for price setting purposes. In addition, there does not appear to be any obvious distortions at the retail level (e.g. capped or uniform pricing) that would warrant pricing on this basis.

### **5.1. Total service long-run incremental cost (TSLRIC)**

Long-run incremental cost pricing determines the change in cost given that all factors of production are variable. It has a number of interpretations according to the circumstances. The Commission has in the past determined access prices based on the TSLRIC necessary to recover efficient forward-looking network costs. It has previously considered such an approach to be consistent with the reasonableness criteria under section 152AH of Part XIC of the Act in circumstances where the declared service is well-developed, necessary for competition in dependent markets, and the forces of competition work poorly in constraining prices to efficient levels.

The concept of TSLRIC can be understood by breaking it up into its components:

- ‘Total service’ – it measures the cost of production of an entire service (or a production element) rather than the cost of a particular unit. However, TSLRIC usually expressed on a per-unit (i.e. average cost) basis by dividing total costs by the total number of units supplied.
- ‘Long-run’ – it measures costs in the long-run. In the short-run the amount of at least one factor of production (usually capital equipment) is fixed, while in the long-run all factors of production can be varied.
- ‘Incremental cost’ – refers to the change in cost from the two alternatives of producing or not producing at all.

It is also an ‘attributable cost’ concept as it refers only to those costs that can be attributed to the production of the service. However, in practice TSLRIC is usually defined to include a contribution to indirect or organisational-level costs (TSLRIC+).

Given these attributes TSLRIC can be defined as the total cost (on an annual basis) the firm would avoid in the long-run if it ceased to provide the service as a whole.

The TSLRIC of supplying a service can also be expressed as the sum of the operating and maintenance costs, and the capital costs that the firm incurs in providing the service as a whole. Operating costs are the continuing operational costs of providing the service, including the labour and materials costs that are causally related to the provision of the service. Capital costs comprise the cost of capital (i.e. the opportunity cost of debt and equity used to finance the firm) and depreciation (i.e. the decline in economic value of the assets) of capital that is specific to the production of the service.

### ***Indirect costs***

As noted above, in practice, TSLRIC has been interpreted to include a contribution to indirect costs (TSLRIC+). As indirect costs are not directly attributable to the production of any one service, the allocation of these costs across services is somewhat arbitrary and there is a range of possible methods of allocating them. One commonly used approach is the ‘equi-proportionate mark-up over directly attributable costs’. This involves measuring the directly attributable costs of each service within the group and allocating the common costs based on each service’s proportion of the total directly attributable costs.

Another option for allocating common costs is the use of Ramsey pricing. Under a Ramsey pricing approach, the common costs would be allocated in inverse proportion to the elasticity of demand for the services over which the common costs relate. That is, a greater proportional mark-up is allocated towards the service which is relatively price inelastic, and a lesser proportional mark-up towards the service which is relatively price elastic. This ensures that the distortions to demand for these services are minimised and that common cost contribution can be achieved with the least overall cost to economic efficiency. In practice there are substantial informational difficulties with applying Ramsey pricing, as elasticity estimates would need to be developed. Furthermore, getting the allocation wrong under a Ramsey pricing approach could be worse than using the equi-proportionate mark-up method.

### ***Use of forward looking costs***

Where there are different production technologies and network configurations – either available or in use – there are alternative ways of evaluating the cost components of TSLRIC. Costs could broadly be based on the actual technology in use, the best-in-use technology or on forward-looking technology (as if the most efficient technology commercially available we used).

A long-run incremental cost pricing approach, and TSLRIC in particular, is generally preferred by the Commission for a variety of reasons. Essentially, an access price based on TSLRIC would be consistent with the price that would prevail if the access provider faced effective competition, and would usually best promote the LTIE. It would:

- promote efficient entry and exit in dependent markets since prices are based on long-term costs;
- encourage economically efficient investment in infrastructure by providing for a normal commercial return on efficient investments in infrastructure;
- provide for the efficient use of infrastructure as access prices are based on the long-term value of the resources embodied in that service;

- provide incentives for access providers to minimise the costs of providing access by using best-in-use technology compatible with existing network design to measure cost;
- allow efficient access providers to fully recover the costs of producing the service, and promote the legitimate business interests of the access provider; and
- inhibit the access provider discriminating in favour of one access seeker over another (unless the discrimination is based on differences in costs).<sup>17</sup>

The Commission's view, expressed in its 1997 *Access Pricing Principles*, is that in general access prices should be based on the TSLRIC of providing a declared service, although whether this principle applies to a particular service will be determined on a case-by-case basis.<sup>18</sup> In general, it considers TSLRIC to be appropriate for services:

- that are well developed in a market and have established demand characteristics;
- that are necessary for competition in dependent (upstream or downstream) markets; and
- where the forces of competition or the threat of competition work poorly in constraining prices to efficient levels.<sup>19</sup>

Since releasing its *Access Pricing Principles*, the Commission has considered the application of its preferred TSLRIC pricing approach on a case-by-case basis. For example, in the context of determining efficient costs for the Domestic PSTN Originating and Terminating Access Services the Commission considered it appropriate to use TSLRIC pricing. However, in the context of determining pricing principles for the Local Carriage Service, the Commission concluded that a retail-minus approach was more appropriate than TSLRIC given distortions that existed in pricing at the retail level.

In this context, the declared transmission markets appear to have the characteristics listed in the three dot points above. That is,

- wholesale transmission services have been supplied by Telstra and its predecessors and other carriers since competition has been introduced in Australian telecommunications markets;
- the relevant downstream markets for the transmission capacity service are national long-distance, international call, data and IP-related markets, mobile and local call markets; and
- there are not yet the conditions conducive for effective competition in the declared transmission markets as indicated in the recent review leading up to the new declaration.

As such, the Commission considers that these markets are suitable to the application of TSLRIC.

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<sup>17</sup> *Access Pricing Principles, Telecommunications – a guide*, Australian Competition and Consumer Commission, July 1997, p. 28-30.

<sup>18</sup> *ibid.*, p. 27-30.

<sup>19</sup> *ibid.*, p. 27-28.

## 5.2. Benchmarking of access prices

### 5.2.1. International benchmarking

An alternative pricing approach is to use comparable international transmission prices to set Australian transmission prices. Some indicative international prices compared to Australia are detailed in the tables below. The Commission considers that the appropriate starting point should be the lowest current access price in a comparable overseas transmission market. That said, the Commission notes that there are a number of differences between Australian and overseas transmission markets, such as, geography, population density and traffic volumes that would need to be taken into consideration.

### 5.2.2. OECD study

The OECD publishes a range of performance indicators for telecommunications services in OECD countries. One of these performance indicators is leased lines (or private lines) that are used by telecommunications carriers to provide broadband services. The latest OECD leased line price index for a number of selected OECD countries is shown in Table 1 below.<sup>20</sup>

Table 1: OECD index of 2Mb/s national leased line charges, August 2002

Country	Index
Australia	129
Canada	121
United States	62
OECD	100

Table 1 shows that Australian prices for 2Mb/s leased lines were 29 per cent above the OECD average, 8 per cent above Canadian prices and 108 per cent above prices in the United States.

These percentages could be used to adjust Australian prices. As noted earlier, the Commission would need to be mindful of the differences between Australian and overseas markets.

### 5.2.3. Teligen study

A recent study into international tail-end transmission prices was undertaken by Teligen.<sup>21</sup> The study examined the prices and price structures used by incumbent operators in a range of countries to ascertain if there are any significant differences between them, and how these differences affect the price offered to competitive operators. The study also compared the

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<sup>20</sup> OECD, *Communications Outlook*, 2003, p. 187.

<sup>21</sup> Teligen, *Local Access Circuit Price Benchmarking for Key Asia-Pacific Countries vs. Each Other, the European Union & OPEC Countries*, November 2003

European Union (EU) recommended price ceilings with prices in six countries in the Asia-Pacific region (including Australia).

The EU recommended price ceilings (for 1999) were based on the following assumptions – the retail price levels from the 3<sup>rd</sup> cheapest EU country was used as a reference, and a wholesale discount level of 20 per cent was taken into account.

Table 2 below provides a comparison between EU recommended ceiling prices and Australian prices for structured 2 Mb/s and 45 Mb/s services.

Table 2: A comparison of prices for structured 2 Mb/s and 45 Mb/s services<sup>22</sup>

Country	2 Mb/s	45 Mb/s
EU recommended price ceiling	394	2,026*
Australia	433	4,000

\* This price is for 34 Mb/s services. A crude estimate for 45 Mb/s services can be derived by factoring-up the price by 45/34 which equals 2,681.

Table 2 shows that for 2 Mb/s services, the Australian price is approximately 8 per cent higher than the EU recommended ceiling price. For 45 Mb/s services, however, Australian prices are 49 per cent higher than the adjusted EU recommended ceiling price.

The Commission notes that the two studies indicate that transmission prices in Australia are generally above those found in overseas. That said, there are a number of differences between transmission markets in Australia and other countries. These differences include geography, population density and traffic volumes. As such, the Commission needs to be mindful of these differences and hence the usefulness of adopting such an approach.

#### 5.2.4. Domestic benchmarking

Another approach suggested by Optus and AAPT is to use domestic transmission capacity service prices on competitive routes to set prices for similar services on non-competitive routes. This approach would seek to translate the price reductions or unit prices (e.g. price per link of a given capacity) observed on competitive routes by mandating similar unit prices or price reductions on non-competitive routes.

The Commission, however, needs to be mindful of the differences that exist between domestic transmission routes. These differences are similar to those identified in the context of international benchmarking and include route length, geography, population density and traffic volumes.

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<sup>22</sup> Approximate prices based on Figures 12 and 13 in the Teligen study.

### **5.3. Commission's preliminary view**

As highlighted above, there are a number of practical impediments to the use of benchmarking. That said, in the absence of readily available TSLRIC information, the Commission considers that benchmarking approaches may be appropriate for determining interim or, in some cases, final prices for the declared transmission capacity service in an arbitral or undertaking context. At the very least, such approaches may be useful for sanity checking any cost-based estimates.

The Commission's preliminary view, therefore, is that transmission prices should ideally be based on the TSLRIC of providing these services. The Commission would need strong evidence to the contrary before it would consider an alternative to the TSLRIC approach for declared services with the relevant characteristics.

The Commission prefers access prices based on the TSLRIC approach because it considers that prices set in this fashion are consistent with those that would prevail if the access provider faced effective competition. In achieving this, the Commission feels that the use of TSLRIC encourages competition in telecommunications markets by promoting efficient entry and exit in dependent markets as well as encouraging economically efficient investment in infrastructure. As TSLRIC provides for a normal risk-adjusted commercial return on efficient investments in infrastructure in the long-term it provides the appropriate incentives for future investment. Further, the Commission considers the use of TSLRIC encourages the efficient use of existing infrastructure and provides incentives for access providers to minimise the costs of providing access over time through efficient investment. Finally TSLRIC promotes the legitimate business interests of the access provider by allowing them to fully recover the efficient costs of producing the service.



## **6. Use of TSLRIC to derive transmission prices**

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Application of TSLRIC to determine prices for transmission services is made difficult due to the variety of transmission services, routes and markets the declaration encompasses. Given this, the Commission considers that prices would need to be determined on a service, route and market basis.

The Commission does not have the necessary information at its disposal or the resources at present to perform a major costing exercise encompassing all these facets. Relevant to this consideration is that the Commission has only had two arbitration disputes in relation to the service in the past seven years (the last in March 2000) which were subsequently resolved commercially. In view of these factors, the Commission considers that it would be more suitable to determine prices on a case by case basis as required in an arbitral context.

Despite this, the Commission considers it useful to spell out in more detail how it would propose to apply TSLRIC to determine transmission access prices as required. This reflects several principles and techniques applied in other contexts where TSLRIC pricing has been applied. Such a specification should provide access seekers and providers with a indication of how prices are likely to be determined in an arbitral context, and possibly help to aid commercial negotiations as an alternative.

### **6.1. TSLRIC procedures**

The procedures the Commission is likely to follow to determine transmission prices in an arbitral context are spelled out below.

1. Specification of the relevant market, service or route into which the transmission element falls (e.g. regional-regional, CBD tails, Melbourne-Morwell) reflecting common functional or volume characteristics etc.;
2. Identification of the commercially available efficient technology for providing the transmission capacity for that element for the current volume of demand, making a 'scorched node' approach to the link concerned and all related links or services. Given the declared services are by definition not competitive, it can be assumed that this will provide an estimate of the efficient costs for Telstra (as the integrated incumbent), thereby capturing its economies of scale and scope;
3. Make an allowance for efficient excess capacity for the level of existing demand (i.e. that for managing faults, or unexpected fluctuations in traffic volumes) reflecting industry norms or best practice;
4. Specify the aggregate equipment and its costs required to provide the volume of demand and efficient excess capacity specified in point 3 above. In the case of fibre capacity this is likely to include cable, trenching, switching costs including installation costs and associated efficient operating and maintenance costs;
5. Make adjustments for any equipment and maintenance costs that are shared with other services (e.g. the CAN, other transmission links or services) using an appropriate cost allocator. These need to reflect efficient practices and could require volume estimates for the other services to serve as allocators in many cases. It is noted that trench

sharing factors may be able to be derived from previous PSTN modelling in certain instances;

6. Given that estimating TSLRIC+ implies the inclusion of indirect costs, it is necessary to add common costs such as a contribution to non-network costs (e.g. corporate overheads). These costs are likely to be imputed as a percentage of capital and operating costs. Proxy percentages for these costs could be taken from the percentages for modelling of PSTN origination or termination;
7. Annualise capital costs taking into account asset lives and add a cost of capital component. The Commission's preliminary view is that a suitable cost of capital would be that calculated for Telstra's PSTN;<sup>23</sup> and
8. Derive a unit price by dividing by the volume applicable to the service concerned (e.g. the number of 2 Mb/s links, number of leased lines etc.).

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<sup>23</sup> Refer to ACCC, *Final Determination for model price terms and conditions of the PSTN, ULLS and LCS services and Final Determination – model non-price terms and conditions*, October 2003 for the latest estimates of WACC parameters.

## **Appendix 1: Transmission capacity service description**

The Domestic Transmission Capacity Service is a service for the carriage of certain communications from one transmission point to another transmission point via network interfaces at a designated rate on a permanent basis by means of guided and/or unguided electromagnetic energy, except communications between:

- a) one customer transmission point and another customer transmission point; and
- b) a transmission point in an exempt capital city and a transmission point in another exempt capital city;
- c) a transmission point in Sydney and a transmission point in any of the following regional centres; Albury, Lismore, Newcastle, Grafton, Wollongong, Taree and Dubbo;
- d) a transmission point in Melbourne and a transmission point in any of the following regional centres; Ballarat, Bendigo, Geelong and Shepparton.
- e) a transmission point in Brisbane and a transmission point in any of the following regional centres; Toowoomba and Gold Coast;
- f) a transmission point in Adelaide and a transmission point in Murray Bridge; and,
- g) one access seeker network location and another access seeker network location.

### **Definitions**

Where words or phrases used in this Annexure are defined in the *Trade Practices Act 1974* or the *Telecommunications Act 1997*, they have the meaning as given in the relevant Act.

In this appendix:

an ***access seeker network location*** is a point in a network operated by a service provider that is not a point of interconnection or a customer transmission point; and

an ***exempt capital city*** means Adelaide, Brisbane, Canberra, Melbourne, Perth or Sydney; and

a ***customer transmission point*** is a point located at customer equipment at a service provider's customer's premises in Australia (for the avoidance of doubt, a customer in this context may be another service provider); and

a ***designated rate*** is a transmission rate of 2.048 Megabits per second, 4.096 Megabits per second, 6.144 Megabits per second, 8.192 Megabits per second, 34 to 45 Megabits per second, 140/155 Megabits per second (or higher orders);

a ***point of interconnection*** is a physical point of connection in Australia between a network operated by a carrier or a carriage service provider and another network operated by a service provider; and,

a ***transmission point*** is any of the following:

- a) a point of interconnection;
- b) a customer transmission point;
- c) an access seeker network location.