



Australian
Competition &
Consumer
Commission

Review of 1997 Guide to Telecommunications Access Pricing Principles for Fixed Line Services

Discussion Paper

December 2009



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1 Preface

In 1997, the Australian Competition and Consumer Commission (ACCC) provided guidance on the approach it would in general adopt when considering access pricing issues under Part XIC of the *Trade Practices Act 1997* (TPA) via the release of the document, *Access Pricing Principles — Telecommunications: a guide* (the 1997 Pricing Principles Guide). The ACCC releases this Discussion Paper reviewing the approach to regulated access pricing for the declared fixed line services in response to a number of developments in the telecommunications sector since this time.

A little over ten years on from the introduction of competition to the telecommunications sector and the release of the 1997 Pricing Principles Guide, both the telecommunications regulatory, technological and competitive landscape, and the ACCC's experience in regulating the prices of fixed line telecommunications access services, have changed and continue to evolve.

Further, in the decade following the release of the 1997 Pricing Principles Guide, there has been much debate amongst industry participants regarding the appropriate approach to determining access pricing for fixed line telecommunications services.

In recent years, some industry participants have expressed a desire to move towards what they have described as a 'utility style' pricing approach to pricing telecommunications services. For example, in 2007, in its draft Special Access Undertaking (SAU) for a fibre to the node (FTTN) network, FANOC (G9) proposed a utility style pricing methodology.¹ In June 2008, regulatory submissions to the NBN Expert Panel also advocated a move towards a utility style pricing approach for a new (or upgraded) fibre network.²

In July 2009, submissions to the Government's consultation on regulatory reform noted that more certainty over access pricing for legacy network services is required during the transition to the NBN.³ Most recently, in October 2009, several submissions to the ACCC's *Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA,*

¹ FANOC, *Special Access Undertaking to the ACCC Under Div. 5 of Part XIC of the TPA 1974 in respect of the Broadband Access Service*, 2007.

² For example, Optus, Terria, the Competitive Carriers Coalition and TransACT.

³ ATUG, *Submission to NBN: Regulatory Reform for 21st Century Broadband – discussion paper*, 2009; CCC, *Response to the Government Discussion Paper: National Broadband Network: Regulatory Reform for 21st Century Broadband*, 2009, p. 16; Macquarie Telecom, *Submission in Response to National Broadband Network: Regulatory Reform for 21st Century Broadband Discussion Paper*, 2009; Telstra, *Submission to the National Broadband Network: Regulatory Reform for 21st Century Broadband Discussion Paper*, 2009, p. 3.

ULLS and LSS called for a review to be undertaken of the current approach to access pricing as early as possible.⁴

The ACCC has also signalled in numerous processes — including in its assessment of G9’s SAU in December 2007, its final decision to reject Telstra’s ULLS Band 2 monthly charge undertaking in April 2009, its submission to the Government’s consultation on regulatory reform in June 2009 and most recently in its *Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS and LSS* — a willingness to consider different approaches to access pricing for fixed line services, and that a review of the current approach may need to be undertaken. The ACCC has in particular noted its view that, when setting regulated access prices, regulatory certainty would be promoted if the value of the assets used to provide the regulated services was locked-in, rather than continually re-valued at each regulatory reset.⁵ It has also noted that the ‘build or buy’ rationale for continually re-valuing the asset base may not be as strong as initially envisaged.⁶

This Discussion Paper seeks to review the conceptual underpinnings of the ACCC’s approach to regulated access pricing for fixed line services. It is acknowledged that the choice of access framework — a negotiate–arbitrate or ex-ante regulatory access framework (as proposed in the Government’s Legislative Reform Package — *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009*)⁷ — is subject to ongoing consideration. Further, the access framework could have implications for the manner in which (and possibly the extent to which) any changes in the conceptual approach could be implemented. However, the ACCC considers that there would be scope to implement at least some changes regardless of the process by which regulated access prices will ultimately be set over the medium to longer term. Consequently, the ACCC’s view is that it is timely to undertake this review of access pricing for fixed line services.

The release of this Discussion Paper accompanies the release of Final Pricing Principles and Indicative Prices for the fixed line services. These instruments establish the Pricing Principles and Indicative Prices that the ACCC will have regard to in assessing undertakings and arbitrating access disputes over the short term. In contrast, as noted, this Discussion Paper reviews the conceptual underpinnings of the approach that will be adopted over the medium to longer term. The Discussion Paper accompanies the release of these instruments because the ACCC is cognisant that, if

⁴ For example, CCC, *Submission to the Draft Indicative Fixed Line Prices*, October 2009, p 4; Optus, *Optus Submission to Australian Competition and Consumer Commission in response to draft determination on Pricing Principles and Indicative Prices for Fixed Line Services*, October 2009, pp. 4-5.

⁵ ACCC, *Submission to the Department of Broadband, Communications and the Digital Economy “National Broadband Network: Regulatory Reform for 21st Century Broadband”*, June 2009.

⁶ ACCC, *ACCC’s Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS and LSS*, August 2009, p. 6.

⁷ *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009: Explanatory Memorandum*, September 2009.

changes to elements of the current pricing approach are considered appropriate, there will need to be sufficient time to prepare for and implement the changes. The ACCC proposes that this would include consultation on appropriate transitional arrangements.

It should be noted that any views expressed in this Discussion Paper are preliminary and are neither the concluded view of the ACCC nor binding on the ACCC as it may be constituted for any particular regulatory process.

2 Introduction

Part XIC of the *Trade Practices Act 1997* (TPA) governs access to declared telecommunications services, including the declared fixed line services — the Local Carriage Service (LCS), Wholesale Line Rental (WLR), Public Switched Telephone Network Originating and Terminating Access services (PSTN OTA), Unconditioned Local Loop Service (ULLS) and Line Sharing Service (LSS). A key component of this regime is the terms and conditions on which access to services must be provided, including price terms.

The ACCC provided guidance in 1997 on the approach it would in general adopt when considering access pricing issues under Part XIC of the TPA via the release of the document, *Access Pricing Principles — Telecommunications: a guide* (the 1997 Pricing Principles Guide). The 1997 Pricing Principles Guide has informed subsequent Pricing Principles and Indicative Prices for fixed line services, including the *Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS and LSS Final Determination* which this Discussion Paper accompanies.

This Discussion Paper seeks to review the 1997 Pricing Principles Guide — specifically, its application to access pricing for fixed line services — by canvassing industry’s views on the different elements of the access pricing approach. In particular, and as the ACCC noted in its submission to the Government’s consultation on regulatory reform, *Regulatory Reform for 21st Century Broadband*,⁸ an important issue for consideration is whether the value of the existing sunk assets used in the provision of fixed line services should be locked-in, rather than continue to be re-valued at each regulatory reset.

The ACCC notes that it is proposing to also consult on the conceptual framework for pricing of the Domestic Transmission Capacity Service (DTCS) at a later date.

2.1 Reason for reviewing the 1997 Pricing Principles Guide

A little over ten years on from the introduction of competition to the telecommunications sector and the release of the 1997 Pricing Principles Guide, both the telecommunications regulatory, technological and competitive landscape, and the ACCC’s experience in regulating the prices of fixed line telecommunications access services, continue to evolve. Further, in the decade following the release of the 1997 Pricing Principles Guide, there has been much debate amongst industry participants regarding the appropriate approach to determining access pricing for fixed line telecommunications services.

In recent times, some industry participants have expressed a desire to move towards what they have described as a ‘utility style’ pricing approach to pricing

⁸ DBCDE, *National Broadband Network Regulatory Reform for 21st Century Broadband: Discussion Paper*, April 2009.

telecommunications services. For example, in 2007 FANOC (G9) in its draft Special Access Undertaking (SAU) for a fibre to the node (FTTN) network proposed a utility style pricing methodology (specifically, a Building Block Model, or BBM, coupled with a weighted average price cap).⁹ Regulatory submissions to the NBN Expert Panel made in June 2008 also advocated a move towards a utility style pricing approach for a new (or upgraded) fibre network.¹⁰

Submissions made to the Government's consultation on regulatory reform in June 2009 noted that more certainty over access pricing for legacy network services is required during the transition to the NBN.¹¹

Most recently, submissions to the ACCC's *Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS and LSS* called for a review of the current approach to pricing, and further highlighted issues with elements of the current approach. For example, the Competitive Carriers Coalition (CCC) submitted that:

...the Commission's proposed discussion paper on a move to a regulated asset base pricing methodology should be released as soon as possible.¹²

Telstra's submission noted that:

Telstra and the ACCC have both, in submissions to the Government's regulatory review, advocated moving to a regulatory asset base (RAB) approach to access pricing in telecommunications...¹³

and similarly, 'The Access Seekers'¹⁴ proposed that:

TSLRIC+ should be replaced with a locked-in RAB that allows for depreciation. The Access Seekers recognise that it is not possible to quickly alter the current network costing methodology but nonetheless urge the Commission to implement a more appropriate methodology as early as possible.¹⁵

⁹ FANOC, *Special Access Undertaking to the ACCC Under Div. 5 of Part XIC of the TPA 1974 in respect of the Broadband Access Service*, 2007.

¹⁰ For example, Optus, Terria, the Competitive Carriers Coalition and TransACT.

¹¹ ATUG, *Submission to NBN: Regulatory Reform for 21st Century Broadband – discussion paper*, 2009; CCC, *Response to the Government Discussion Paper: National Broadband Network: Regulatory Reform for 21st Century Broadband*, 2009, p. 16; Macquarie Telecom, *Submission in Response to National Broadband Network: Regulatory Reform for 21st Century Broadband Discussion Paper*, 2009; Telstra, *Submission to the National Broadband Network: Regulatory Reform for 21st Century Broadband Discussion Paper*, 2009, p. 3.

¹² CCC, *Submission to the Draft Indicative Fixed Line Prices*, October 2009, p 4.

¹³ Telstra, *Response to the ACCC's draft pricing principles and indicative prices for LCS, WLR, PSTN OTA, ULLS, LSS*, October 2009, p. 4.

¹⁴ Adam Internet; Agile; Amcom; Chime Communications/iinet; Eftel; Netspace Networks; Network Technology (Australia); Saunders Properties/TSN Communications; and Wireband Networks.

¹⁵ Adam Internet; Agile; Amcom; Chime Communications/iinet; Eftel; Netspace Networks; Network Technology (Australia); Saunders Properties/TSN Communications; and Wireband Networks, *The*

Optus stated that:

The ACCC has recognised it is “highly likely” that the basic rationale for its TSLRIC+ pricing methodology — or more precisely the valuation of network assets at full replacement cost — no longer exists. Optus strongly agrees and this will form the central argument developed in this submission...Optus will strongly argue that any future pricing decision for fixed line access services should value Telstra’s assets in a more realistic manner.¹⁶

In addition to industry raising these issues, the ACCC has signalled in numerous processes in recent years a willingness to consider different approaches to pricing, and that a review of the current approach to pricing for fixed line services may need to be undertaken. For example, in its assessment of G9’s SAU in December 2007, the ACCC noted:

...it is the ACCC’s assessment that its use of a TSLRIC+ based approach to access pricing in the past does not bind it to such an approach in perpetuity and it is open to access providers to propose alternatives as appropriate...¹⁷

The ACCC also noted in April 2009 in its final decision to reject Telstra’s ULLS Band 2 monthly charge undertaking that the lack of deployment of competing end-to-end infrastructure by access seekers may necessitate a review of the current Access Pricing Principles, and consideration of other appropriate pricing approaches.¹⁸

Further, in June 2009, the ACCC’s submission to the Government’s consultation on regulatory reform noted its view that, when setting regulated access prices, regulatory certainty would be promoted if the value of the assets used to provide the regulated services was locked-in, rather than continually re-valued at each regulatory reset.¹⁹ This submission also contained a detailed appendix outlining the issues associated with moving to such a pricing approach.

Most recently, in the ACCC’s *Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS and LSS*, the ACCC noted that it would, under certain circumstances, be open to reconsidering the Pricing Principles for these services in the future and that the ‘build or buy’ rationale for continually re-valuing the asset base may not be as strong as initially envisaged.²⁰ The Draft Pricing Principles and Indicative

ACCC’s Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS and LSS, August 2009, p. 10.

¹⁶ Optus, *Optus Submission to Australian Competition and Consumer Commission in response to draft determination on Pricing Principles and Indicative Prices for Fixed Line Services*, October 2009, pp. 4-5.

¹⁷ ACCC, *Assessment of FANOC’s Special Access Undertaking in relation to the Broadband Access Service — Draft Decision*, 2007, p. 86.

¹⁸ ACCC, *Assessment of Telstra’s ULLS Band 2 monthly charge undertaking: Final Decision – public version*, 2009, p. 55.

¹⁹ ACCC, *Submission to the Department of Broadband, Communications and the Digital Economy “National Broadband Network: Regulatory Reform for 21st Century Broadband”*, June 2009.

²⁰ ACCC, *Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS, LSS*, 2009, p. 17.

Prices paper foreshadowed the release of this Discussion Paper on future pricing options for legacy network services.²¹

This Discussion Paper seeks to review the conceptual underpinnings of the approach to regulated access pricing for fixed line services. It is acknowledged that the choice of access framework — a negotiate–arbitrate or ex-ante regulatory access framework (as proposed in the Government’s Legislative Reform Package)²² — is subject to ongoing consideration. Further, the access framework could have implications for the manner in which (and possibly the extent to which) any changes in the conceptual approach could be implemented. However, the ACCC considers that there would be scope to implement at least some changes regardless of the process by which regulated access prices will ultimately be set over the medium to longer term. Consequently, the ACCC’s view is that it is timely to undertake this review of access pricing for fixed line services.

2.2 Interaction with Final Pricing Principles and Indicative Prices

Under Part XIC, the ACCC must make a Pricing Principles determination at the same time as, or as soon as is practicable, after the ACCC declares a service. This Discussion Paper accompanies the release of Final Pricing Principles and Indicative Prices for fixed line services for the period 1 August 2009 — 31 December 2010. These instruments will be what the ACCC has regard to in assessing access undertakings and arbitrating access disputes under Part XIC over that period. The Final Pricing Principles are generally based on the principles outlined in the 1997 Pricing Principles Guide, and the ACCC’s previous Pricing Principles for fixed line services.

In contrast, this Discussion Paper reviews the approach to pricing of the LCS, WLR, PSTN OTA, ULLS and LSS in order to establish the approach to pricing that will apply over the medium to longer term (whether this be under the current access regime or any future regime that may result from the Legislative Reform Package).

The Discussion Paper is being released at the same time as the Final Pricing Principles because, if changes to elements of the current pricing approach are considered appropriate, a transitional period will be required to prepare for and implement any changes. The ACCC is also cognisant that a range of important transitional issues would arise if elements of the current pricing approach were to change, particularly in terms of interactions with current regulatory processes, including interim and final arbitral determinations and any future access undertakings that are lodged.

Given the range of issues that could arise, the ACCC proposes that, if changes to the current pricing approach are considered appropriate, consultation on transitional issues

²¹ Ibid. p. 2.

²² *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009: Explanatory Memorandum*, September 2009.

and appropriate transitional arrangements would be undertaken prior to any changes being implemented.

2.3 Distinction between TSLRIC+ and valuing the regulatory asset base

The 1997 Pricing Principles Guide noted that the approach adopted in regulating access prices would be to consider the constraints that would be placed on the pricing behaviour of access providers if they faced effective competition (i.e. the threat of being displaced). This yielded four broad principles which stated that access prices should:

1. be cost based
2. not discriminate in a way which reduces efficient competition
3. not be inflated to reduce competition in dependent markets
4. not be predatory.²³

The 1997 Pricing Principles Guide also outlined the specific methodology the ACCC would employ in determining a cost-based access price, concluding that, in general, this should be based on the total service long-run incremental cost (TSLRIC) of providing the service. It was stated in the 1997 Pricing Principles Guide that TSLRIC “is based on forward-looking costs”.²⁴ Forward-looking costs were described as:

“...the ongoing costs of providing the service in the future using the most efficient means possible and commercially available. In practice this often means basing costs on the best-in-use technology and production practices and valuing inputs using current prices.”²⁵

The 1997 Pricing Principles Guide also outlined the approach the ACCC would generally adopt for a number of other elements of its pricing approach, including the asset valuation methodology it would adopt (optimised replacement cost), the cost of capital (the adoption of the weighted average cost of capital, or WACC), and depreciation (adoption of a schedule to reflect the decline in the economic value of the assets).²⁶ Since this time, the ACCC has affirmed these views by issuing Pricing Principles at various times for declared services, and in its decisions assessing undertakings and in arbitrating access disputes for declared services.

²³ ACCC, *Access Pricing Principles 1997 – telecommunications: a guide*, pp. 14-16.

²⁴ ACCC, *Access Pricing Principles Guide*, p. 29.

²⁵ *Ibid.* p. 29.

²⁶ *Ibid.*

TSLRIC+ was chosen in the 1997 Pricing Principles Guide as the pricing methodology, whilst ‘forward looking’ refers to the *perspective* that is used to *measure* the costs that are included in TSLRIC+.

TSLRIC+ essentially defines which costs are to be included in setting the access price for a service. As in other sectors regulated by the ACCC, and in other regulatory pricing models internationally, TSLRIC+ allows, in a given regulatory period, the access provider to recover the following costs in regulated access prices:

- Capital costs:
 - Return *of* capital (depreciation) — the allocation over time of previously incurred sunk costs, which is determined by the depreciation schedule
 - Return *on* capital — typically the WACC multiplied by the proportion of unrecovered investment costs (i.e. the regulatory asset base — or RAB)
- Operations and maintenance costs

In the energy sector, the revenues recovered over the regulatory period are defined as:

$$\text{MAR} = \text{WACC} * \text{RAB} + \text{Depreciation} + \text{Opex}$$

Where:

MAR = maximum allowable revenue

WACC = weighted average cost of capital

RAB = regulatory asset base

WACC*RAB = return on capital

Depreciation = return of capital

Opex = operating costs

Therefore, in both sectors, the same range of costs are recovered. That is, the above formula could equally apply to the telecommunications sector.

The 1997 Pricing Principles Guide outlined that, in the telecommunications industry, the least cost technology for providing telecommunications services would be continually changing, and that in such an environment, forward looking costs would generate a price that would usually best promote the LTIE.²⁷ (Nonetheless, the 1997 Pricing Principles Guide noted that TSLRIC+ could also be measured using historic or actual costs.²⁸)

²⁷ Ibid pp. 29; 42.

²⁸ Ibid p. 29.

A key feature of the forward looking approach to measuring TSLRIC+, both in Australia and overseas, has been that the existing assets that provide regulated services are re-valued each time a price is set, with the new value being based on the cost of replacing the assets. This is in contrast to the approach adopted in other sectors, such as energy, where, although revaluation of existing assets has been allowed in the past, their value is now ‘locked-in’ and is ‘rolled-forward’ from one regulatory period to the next.²⁹ Section 4.1.1 further discusses the RAB and the difference between locking it in and re-valuing it.

2.4 Outline of the Discussion Paper

The outline of this Discussion Paper is as follows.

The first step in considering the approach to regulated access pricing is to define the objectives of regulation. Any assessment of different approaches to regulatory pricing should then proceed on the basis of how they perform against these objectives. The paper therefore commences with an overview of the legislative criteria under Part XIC that the ACCC must consider in assessing an undertaking or making an arbitration determination. It also outlines the ACCC’s view on the broad conceptual framework of regulatory access pricing.

Section 4 raises the specific issues that the ACCC is seeking comment on. These are organised as follows:

1. Ensuring the access provider is adequately compensated (and not over- or under-compensated) in the long run (section 4.1):
 - The regulatory asset base (RAB) — its role; attributing a value to sunk assets; re-valuing versus locking in the value of the RAB; and defining and measuring an opening RAB (including taking into account past compensation and remaining asset lives) (section 4.1.1 and 4.1.2)
 - Depreciation (section 4.1.3)
 - The rate of return (section 4.1.4)
2. Ensuring that the access provider has incentives to deliver its services at the efficient quality and at a high level of efficiency (section 4.2):
 - Treatment of future capital and operations expenditure, including mechanisms to encourage efficient capital and operations expenditure, and how frequently regulatory resets should occur (sections 4.2.1)
 - Maintaining service quality (section 4.2.2)
3. Ensuring that regulated prices are set efficiently (section 4.3):

²⁹ In the energy sector, the RAB is also indexed to inflation from one regulatory period to the next.

- Allocating costs across the different fixed line services (section 4.3.1)
- The advantages and disadvantages of pricing flexibility (section 4.3.2)
- TSLRIC+, revenue caps and average price caps (sections 4.3.3 to 4.3.5)
- Geographic averaging versus de-averaging of access prices (section 4.3.6)

Importantly, and as noted, in considering these issues, if changes to the current approach used by the ACCC in determining prices are proposed by an interested party, these changes should be assessed against the objective of Part XIC and the legislative criteria required to be used in determining prices (as outlined in section 3).

Section 5 outlines the ACCC's preliminary views on the immediate effect on prices if changes to elements of the current pricing approach were to be implemented.

2.5 Making a submission

The ACCC invites submissions from interested parties on this Discussion Paper.

The ACCC is seeking written submissions in response to the Discussion Paper **by 5.00pm, Friday, 26 February 2010.**

The ACCC prefers to receive electronic copies of submissions. Electronic submissions should be in a PDF, Microsoft Word or (if appropriate) Microsoft Excel format that contains searchable text.

Electronic submissions should be provided by email to:

appreview@acc.gov.au

The ACCC also accepts hard copies of submissions. Any hard copy should be sent to the following address:

The General Manager
 Strategic Analysis and Development Branch
 Communications Group
 Australian Competition and Consumer Commission
 GPO Box 520
 Melbourne VIC 3001

To allow for an informed and open consultation, the ACCC prefers that confidentiality requests and provision of confidential information be kept to a minimum. The ACCC will treat all submissions as non-confidential unless the author of a submission requests that the submission be kept confidential. In such a case, the author of the submission must provide a non-confidential version of the submission. Non-confidential submissions will be published by the ACCC on its website. Parties should indicate clearly where only parts of a document are confidential. Submissions containing confidential information should also have the confidential text clearly marked, for example, by placing the confidential text within '[c-i-c]'.

On 23 October 2008, the ACCC released the *ACCC-AER information policy: the collection, use and disclosure of information*. This guideline sets out the general policy of the ACCC and the Australian Energy Regulator (AER) on the collection, use and disclosure of information. The purpose of this guideline is to provide clarity to stakeholders as to how the ACCC/AER:

- obtains information (including the use of its statutory powers to require the provision of information);
- uses that information (including the use of information obtained for one matter, for another matter); and
- discloses that information outside the ACCC/AER.

A copy of the guideline can be downloaded from the ACCC website at <http://www.accc.gov.au/content/index.phtml/itemId/846791>.

3 The legislative criteria and overarching conceptual framework

This section outlines the legislative criteria the ACCC has regard to in assessing an access pricing approach and the broad features of an access pricing approach that the ACCC considers will meet these criteria. It also outlines the ACCC's view on the broad conceptual framework of regulated access pricing.

The object of Part XIC of the TPA is to promote the long-term interests of end-users (LTIE) of carriage services or of services provided by means of carriage services (the listed services).³⁰ Part XIC states that promoting the LTIE requires achieving the following objectives:

- promoting competition in markets for listed services;
- achieving any-to-any connectivity in relation to carriage services that involve communication between end-users;³¹ and
- encouraging the economically efficient use of, and the economically efficient investment in, the infrastructure by which listed services are supplied.³²

³⁰ TPA s 152AB(1). A carriage service has the same meaning as in the *Telecommunications Act 1997* where it is defined as a service for carrying communications by means of guided and/or unguided electromagnetic energy.

³¹ This is the ability of end-users of different networks to communicate — the value of the network to an end-user depends on the number of other users that network allows the end-user to reach - without any-to-any connectivity, smaller networks could only offer services to their own end-users, and would therefore find it difficult to attract new users, regardless of their long-term efficiency.

³² TPA s 152AB (2).

An important part of the Part XIC access regime is the terms and conditions of access, including prices or a method for ascertaining prices. Under Part XIC, in its current form, section 152BV (ordinary undertakings) and 152CBD (special access undertakings) of the TPA provides that the ACCC cannot accept an ordinary or special access 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 set out in section 152AH of the TPA:

- whether the terms and conditions will promote the LTIE;
- the legitimate business interests of the carrier or carriage service provider (CSP), and the carrier's or provider's investment in facilities used to supply the declared service;
- the interests of all 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.³³

However, this does not, by implication, limit the matters to which regard may be had.³⁴ When arbitrating access disputes the ACCC must have regard to the same matters as listed above which are set out in section 152CR(1) of the TPA, and must also consider:

- the value to a party of extensions, or enhancement of capability, whose cost is borne by someone else.³⁵

When considering any pricing approach, the ACCC should consider its ability to meet these legislative criteria. As noted in the 1997 Pricing Principles Guide, the criteria above are interdependent.³⁶ In some cases promoting one criterion will promote another, whilst in other cases, promoting one criteria may detract from the promotion of another.³⁷ Hence, a balancing of the multiple criteria is required.³⁸

³³ TPA s 152AH(1).

³⁴ TPA s 152AH(2).

³⁵ TPA s 152CR(1)(e).

³⁶ ACCC, *Access Pricing Principles Guide*.

³⁷ For example, 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 may not be consistent with the legitimate business interests of the access provider. In particular, an access price based on the direct incremental or marginal cost of providing access may not always allow an efficient access provider to recover all its costs over the long term, including its previously incurred sunk costs.

The ACCC is of the view that the legislative criteria are more likely to be met by access pricing approaches with the following broadly desirable features:

- The approach to access pricing should generate prices that are equivalent for all access seekers (including the access provider's downstream arm), such that the ability to compete in downstream markets is based on the cost and quality of the access seeker's operations — more efficient sources of supply should be able to displace less efficient sources at all stages of value-adding in the production chain. This should encourage the efficient entry of firms and efficient competition in dependent markets. The processes of competition should in turn encourage access seekers 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. Non-equivalence in pricing can reduce efficient competition in dependent markets, particularly where an access provider provides preferential pricing to its own vertically integrated operations or to its subsidiaries.
- The approach to access pricing should allow the access provider to recover its costs, including a normal commercial return on its investments. This means that the access provider's legitimate business interests are met and aims to ensure that investment in regulated infrastructure over the long term is not discouraged, which promotes dynamic efficiency and the ongoing provision of services to consumers.³⁹
- The approach to access pricing should create incentives for the access provider to incur costs of supply efficiently (e.g. by adopting the most appropriate technology, improving productivity and reducing costs) at any given point in time, and throughout time (subject to achieving certain levels of quality). This will generate access prices that are more likely to encourage efficient use of infrastructure over the long term, which will in turn provide incentives for firms in downstream markets to innovate and to continually improve the price, range and quality of the services they provide to consumers.
- The approach to access pricing should not lead to inefficient duplication, or under-use, of existing infrastructure. It should also encourage existing infrastructure to be duplicated where it is efficient to do so, and should not lead to over-utilisation of existing infrastructure. The decision of new or existing firms to buy existing network capacity or build their own network capacity should be based on normal commercial factors, taking into consideration the economies of scale and scope inherent in existing networks.⁴⁰ If the access pricing approach generates a path of access prices over time that is above the cost of providing the service, this may result in inefficient duplication and/or under-utilisation of the existing infrastructure. If the access pricing approach generates a path of access prices over

³⁸ Telstra Corporation Limited (No.3) [2007] ACompT 3, [281] and [282]; *Telstra Corporation Ltd v Australian Competition & Consumer Commission* [2008] FCA 1436 (19 September 2008) [122]; *Telstra Corporation Ltd v ACCC* [2008] FCA 1758 (24 November 2008), [112].

³⁹ Dynamic efficiency involves having appropriate incentives for firms to invest, innovate, improve the range and quality of services, increase productivity and lower costs through time.

⁴⁰ ACCC, *Access Pricing Principles Guide*.

time that is below the cost of providing the service, this may result in, even if an access seeker could provide the service at a lower cost by building its own infrastructure, it purchasing access to the existing infrastructure instead.

As noted in the 1997 Pricing Principles Guide, there are a number of different cost based pricing approaches that have these features, and in turn have the potential to promote the legislative criteria, depending on the costs that are included, how they are allocated and how they are measured (particularly common costs and capital costs).⁴¹

3.1 Creating certainty

In reviewing whether a pricing approach or implementation of a pricing approach meets the legislative criteria, the ACCC is of the view that consideration needs to be given to whether it creates sufficient certainty for both the access provider and access seekers to enable them to make efficient decisions regarding their future investment patterns and general business plans. Industry has expressed the view that the current approach does not provide this degree of certainty and that more certainty is required during the transition to the NBN.⁴² Providing certainty over the path of access prices over time is a feature of access pricing that is likely to promote a number of the legislative criteria, but which was not explicitly discussed in the 1997 Pricing Principles Guide. This issue is outlined in more detail in section 4.1.1.4.

3.2 Balancing the legislative criteria

The 1997 Pricing Principles Guide was developed against the backdrop of an expectation that there was more potential for infrastructure-based competition in the telecommunications industry than in other regulated industries. It was thought that in telecommunications, the least cost technology would be rapidly and continually changing, such that access seekers would, over time, efficiently deploy their own infrastructure to compete with the incumbent's and provide services of a similar quality and at a similar price in downstream retail markets. In particular, and as discussed in more detail in section 4.1.1.4, this assumption influenced the approach the ACCC has adopted to measuring the 'costs' that access providers have been allowed to recover in access prices. The 1997 Pricing Principles Guide noted:

“...in telecommunications where technology advances rapidly, historically incurred expenditures often have little relationship with (and generally overstate) the true

⁴¹ The 1997 Pricing Principles Guide noted that these included directly attributable incremental costs (DAIC), fully distributed costs (FDC), short-run incremental costs (SRIC) and long-run incremental costs (LRIC).

⁴² Telstra, *Summary of Telstra's ULLS Undertaking*, 2007; ATUG, *Submission to NBN: Regulatory Reform for 21st Century Broadband – discussion paper*, 2009; Macquarie Telecom, *Submission in Response to National Broadband Network: Regulatory Reform for 21st Century Broadband Discussion Paper*, 2009.

economic costs of replicating an asset's service potential. As such, it will often inflate the access price and encourage inefficient by-pass."⁴³

The ACCC continues to consider that one of the aims of an access pricing approach should be to encourage the economically efficient use of, and the economically efficient investment in, telecommunications infrastructure — as noted above, the legislative criteria requires that it does. However, the ACCC is of the view that a review of some elements of the current approach to pricing — in particular, the approach to measuring the costs of sunk infrastructure — is needed to determine whether the current approach offers the best balance of the legislative criteria. This issue is outlined in more detail in section 4.1.1.4.

3.3 Overarching conceptual framework

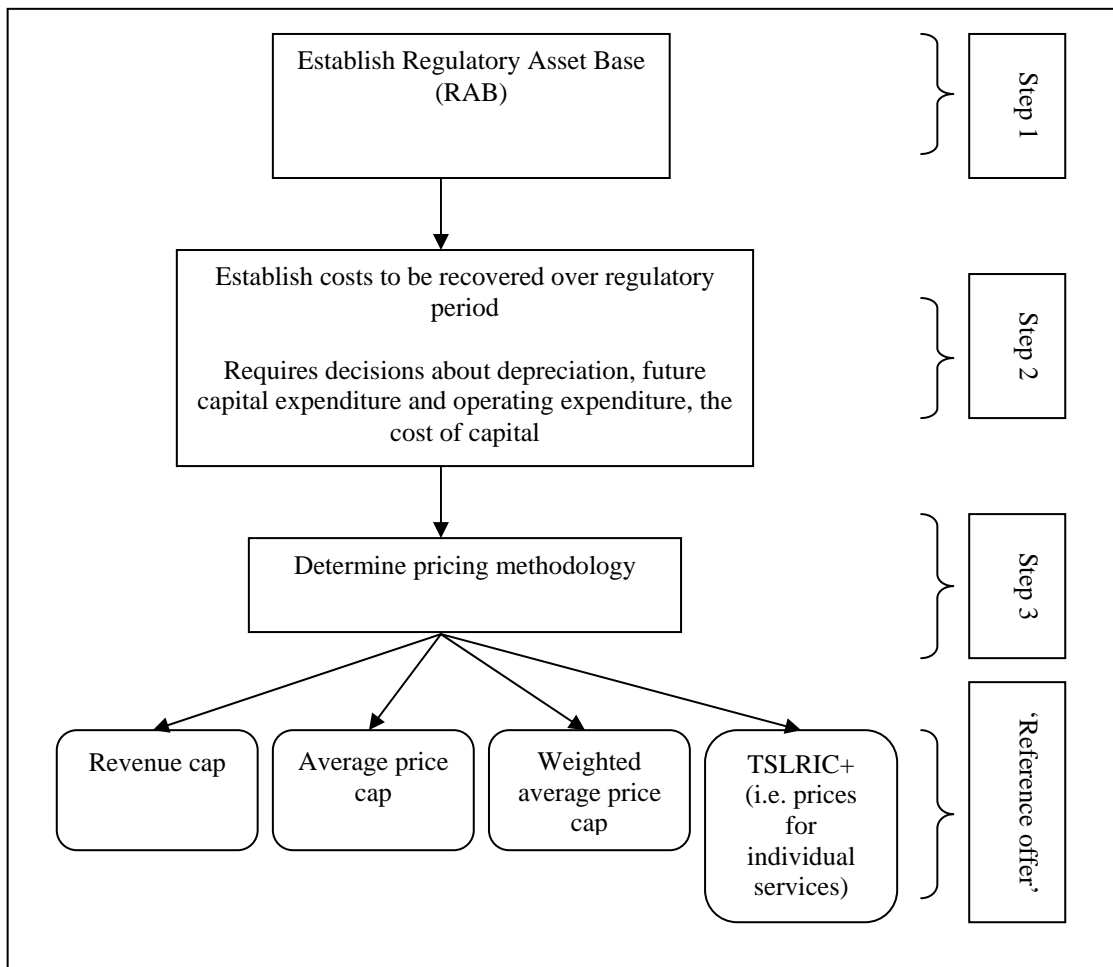
As noted, there are a number of different approaches that can be taken to developing an access price. Generally, regulators use cost-based approaches. As noted in the 1997 Pricing Principles Guide, there are many variants of cost-based pricing depending upon:

- the costs that are included;
- when and how they are allocated; and
- when and how they are measured.

Hence, there are a number of concepts and inputs that are used in generating a cost-based access price. These are shown diagrammatically in Figure 1.

⁴³ ACCC, *Access Pricing Principles Guide*, p. 43.

Figure 1 Setting a regulated access price



Conceptually, there are three broad steps involved in setting a cost based access price: firstly establishing the RAB; secondly determining what costs are to be recovered over the regulatory period (dependent in part on the first step); and thirdly determining what methodology will be used to allow the access provider to recover these costs.

1. The first step involves establishing the value for the RAB — the RAB is the value attributed to the sunk network assets used by the access provider in providing the regulated services, and is a mechanism for ensuring there is no over or under compensation to the access provider in the long run. Establishing a value for the RAB involves decisions about which assets to include and on what basis to measure their value, including how to take into account past compensation on and depreciation of the assets, and their remaining lives. It may also involve the definition of rules regarding how the RAB will be treated over time. That is, in future regulatory periods, will the value of the bundle of assets in the RAB be locked-in and ‘rolled forward’ or will it be re-valued (and rolled forward, or not rolled forward) at each regulatory period. The RAB is discussed in more detail in section 4.1.1.

2. The second step involves determining what costs will be recovered over the regulatory period. This involves consideration of the following:

- What method will be used for depreciating the RAB going forward, and over what period. Depreciation is essentially the allocation of previously incurred costs over time — hence, it is sometimes referred to as the return *of* capital. The different types of depreciation are discussed in section 4.1.2.
- What the regulated cost of capital will be — the cost of capital is the opportunity cost of the debt and equity funds used to finance the investments of a firm (discussed in more detail in section 4.1.3).
- How will future capital expenditure and operating expenditure be treated — for example, whether operations expenditure will be treated as a percentage mark-up on capital costs, or forecast in absolute terms. Further, under cost-based access pricing approaches which directly link access prices to the access provider’s actual costs, there may be little incentive for the access provider to incur these costs efficiently (discussed in more detail in section 4.2). Hence, generally there will also need to be a consideration of the mechanisms required to encourage efficiency in capital and operating expenditure decisions over time.

3. After the costs to be recovered by the access provider over the regulatory period have been determined, the pricing methodology is then applied to these costs to determine the ‘reference offer’. The choice of pricing methodology essentially determines the way the access provider will recover its costs and which party (the regulator or the access provider) will allocate these costs to different services. This involves consideration of whether a revenue cap will be regulated; the prices of individual services will be regulated (as occurs with TSLRIC+); or an average of prices will be regulated (for example, using a weighted average price cap), with the access provider being free to set the prices of individual services, subject to this average price (discussed in more detail in section 4.3).

Table 1 summarises these steps and shows conceptually how access pricing generally operates from one regulatory period to the next.

Table 1 Regulatory pricing steps

At the beginning of the regulatory period
Step 1.
Decision parameter: the regulatory asset base (RAB_t)
If not in the first regulatory period:
$RAB_t = RAB_{t-1}$; plus capital expenditure from (t - 1) to t; less depreciation from (t - 1) to t.
Step 2.
Decision parameters: WACC, depreciation method/amount
Collect forecast variables for each year of the regulatory period: forecast operating

expenditure (forecast opex); forecast capital expenditure (capex)

Sum forecast elements of cost for each year (possibly taking into account any forecast efficiency improvements) to determine target revenue (TR) for each year:

$$TR = \text{Forecast Opex} + \text{depreciation} + \text{WACC} * \text{RAB}_t \text{ (including forecast capex)}$$

Step 3.

Determine and apply the chosen pricing methodology to the TR in step 2.

The chosen pricing methodology will be used as the basis for the reference offer in the following years. The pricing methodology may require other parameters to be determined/forecast (e.g. demand, cost allocation across services).

At the commencement of the next regulatory period:

Adjust RAB for changes in capex and depreciation over previous period (and any carry forward mechanisms — discussed in section 4.2).

Since the release of the 1997 Pricing Principles Guide, the ACCC has generally proposed that, to meet the legislative criteria:

- forward looking costs — in particular, the ‘optimised replacement cost’ approach to valuing sunk assets (step 1) — would be the way in which costs are measured — the forward looking approach to measuring costs would provide incentives for access providers to make efficient investment decisions (step 2);
- a tilted annuity approach would be used to determine how much depreciation would be recovered in a ‘regulatory period’ (step 2);
- the weighted average cost of capital (WACC) would be adopted as the approach to determining the cost of capital (step 2);
- forecast operations expenditure would be based on percentage mark-ups on capital expenditure (as opposed to being independently forecast in absolute terms) (step 2) — efficiency in operations expenditure should be achieved by assessing against benchmarks of the providers’ historic expenditure and international benchmarks (step 2)
- TSLRIC+ would be the pricing methodology — TSLRIC+ essentially involves the costs that have been generated in the aforementioned steps being allocated to each service, and subsequently recovered in the access price for that service (step 3);
- at the end of a ‘regulatory period’, in setting the RAB for the next period, instead of adjusting the previous period’s RAB for capital expenditure and depreciation, the RAB would be ‘re-valued’, based on the full (undepreciated) replacement cost of an

optimised network — past compensation and depreciation would not be taken into account in setting the next period's RAB.

4 Issues on which the ACCC seeks comment

In considering their responses to the questions raised in this section, interested parties should consider how their proposed resolution of the particular issue promotes or detracts from the legislative criteria as set out in section 3 of this paper.

4.1 Ensuring that the access provider is adequately compensated

The ACCC is of the view that a desirable feature of an access pricing approach is that it aims to ensure that the access provider is adequately compensated (and not over- or under-compensated) in the long-run — in other words, it aims to ensure that the present value of the access provider's expenditure is equal to the present value of its revenues. This section of the Discussion Paper considers issues associated with ensuring this.

4.1.1 The RAB

As noted, a large number of inputs are used in generating an access price. In capital-intensive industries, such as telecommunications, the RAB can have a large impact on access prices. This section focuses on issues associated with the RAB, including:

- why a RAB is used in setting access prices in regulated infrastructure industries — that is, how the RAB is used as a mechanism for ensuring the access provider is not over- or under-compensated in the long run;
- the difference between locking-in a value for the RAB and re-valuing the RAB;
- why locking-in a RAB in the telecommunications sector might be considered; and
- issues that need to be considered in establishing an opening RAB — such as which assets should be incorporated into the RAB(s), and the approach to valuing them (including how to take into account past compensation and remaining asset lives).

4.1.1.1 The role of the RAB

The RAB is a mechanism for ensuring that the access provider is not over- or under-compensated over the long run. It is essentially an 'amount', which is increased each regulatory period by the amount of any new investment and decreased by the amount of depreciation. Any path of depreciation which sums to the total capital expenditure of the access provider corresponds to a path of earnings with a net present value (NPV) of zero (that is, where the present value of the access provider's expenditure is equal to the present value of its revenues). Alternatively, any path of the RAB which reduces to zero over the life of the regulated assets would also correspond to a path of earnings with a NPV of zero. A regulator could focus on choosing the path

of depreciation or alternatively, it could control the path of the RAB — however, only one of the following can be fixed: the path of depreciation, the path of the RAB or the path of earnings — a choice of any one of these determines the other two.

Table 2 shows a worked example. In both scenarios, the access provider’s total investment is equal to \$100 and the firm has a ten year life. In scenario 1, the regulator chooses the path of the RAB by forecasting what the RAB will be at the end of the regulatory period (which subsequently determines the amount of depreciation and earnings for the period). In scenario 2, the regulator chooses the path of depreciation (which subsequently determines the path of the RAB and earnings). In both scenarios, however, the NPV of earnings is equal to the NPV of the access provider’s total investments. (New investment is excluded from this example for simplicity.)⁴⁴

Table 2 Link between the RAB, depreciation and earnings

Year	Scenario 1				Scenario 2			
	RAB	depcn	cost of capital ⁴⁵	earnings	depcn	RAB	cost of capital	earnings
	(\$)				(\$)			
1	100	5	10	15	10	100	10	20
2	95	5	9.5	14.5	10	90	9	19
3	90	5	9	14	10	80	8	18
4	85	5	8.5	13.5	10	70	7	17
5	80	10	8	18	10	60	6	16
6	70	10	7	17	10	50	5	15
7	60	10	6	16	10	40	4	14
8	50	10	5	15	10	30	3	13
9	40	20	4	24	10	20	2	12
10	20	20	2	22	10	10	1	11
11	0					0		

In scenario 1, in year 1, the regulator forecasts that by year 2, the value of the RAB will have fallen to \$95 — the depreciation the access provider is allowed to include in earnings over the period must subsequently be \$5. In scenario 2, in year 1, the regulator allows the access provider to recover \$10 in depreciation in earnings over the first period. The value of the RAB in year 2 must subsequently be \$90. Of note, if there is certainty over the level of the re-valued RAB in future periods, the regulator could choose the amount of depreciation such that it reflects these expectations — there would therefore no longer be a distinction between the two scenarios. However, this is

⁴⁴ This table is essentially a numerical example of the following equations:

$$\text{earnings} = \text{WACC} \times \text{RAB} + \text{Depreciation}$$

$$\text{where: } \text{RAB}_t = \text{RAB}_{t-1} - \text{Depreciation}$$

In scenario 2, depreciation is determined by the regulator, which in turn determines RAB_t and earnings. On the other hand, in scenario 1, the regulator determines the change in the value of the RAB, which in turn determines depreciation — that is, the second equation is re-arranged such that:

$$\text{Depreciation} = \text{RAB}_{t-1} - \text{RAB}_t$$

⁴⁵ Assumed to be 10% in both scenarios.

not the case when there is uncertainty associated with what the level of the re-valued RAB will be (discussed in section 4.1.1.3).

In ensuring that the access provider is not over- or under-compensated, the access provider's long run costs are considered. The implication of this is that the access provider is able to recover its previous costs of investing in sunk infrastructure. The costs of investing in infrastructure are regarded as 'sunk' if the infrastructure cannot be redeployed to an alternative use — once the investment in creating the asset has been made, the outlay cannot be recouped by selling the asset for some other purpose. The opportunity (or 'economic') cost of sunk infrastructure — the amount foregone by not using the infrastructure in its best alternative use — is low, or zero. Bottleneck infrastructure providers subject to cost-based regulation are allowed to attribute a value higher than this to sunk assets to allow them to recover past investment costs. Not allowing an access provider to recover these costs could mean that it may be unwilling to make sunk investments in the future — which would jeopardise dynamic efficiency. The following section outlines the different approaches that are generally used by regulators to attribute a value to sunk assets.

4.1.1.2 *Attributing a value to sunk assets*

With cost-based regulation, the value attributed to sunk assets is typically established with reference to the costs of investing in the infrastructure. However, there are several different ways of measuring these 'costs'. The most common in a regulatory setting include:

- historic cost/actual cost — the original cost of acquiring or building the asset;
- depreciated historic/actual cost (DHC/DAC) — adjusts the historic cost of an asset by the proportion of these costs that have been recovered;
- current replacement cost — how much it would cost to replace the asset in substantially the same form at today's prices (current costs may also be depreciated);
- optimised replacement cost (ORC) — values the asset at the cost of replacing it with a modern equivalent available asset (MEA); and
- depreciated optimised replacement cost (DORC/ODRC) — values the asset at the cost of replacing it with an asset that is both a) adjusted for the proportion of the service potential of the existing asset that has expired and b) optimised to provide the required service potential in the most efficient way possible.

Replacement cost approaches have been adopted to date in the telecommunications sector both in Australia and internationally.

When an investment is first made, each of the approaches listed above should arrive at the same value. This is because the firm making the investment should invest in the most up to date technology, and because the asset is undepreciated (at the start of its life).

Over time, if these investments are not re-valued, they are said to be valued at their 'historic cost'. On the other hand, if the investments are re-valued, the new value is typically based on the investment's replacement cost (or depreciated replacement cost). If replacement costs are rising, the asset's value, if based on replacement costs, will be higher than its historic cost value (depending on the depreciation schedule applied to historic costs). If replacement costs are falling, the asset's value, if based on replacement costs, will tend to be lower than its historic cost value (again depending on the depreciation schedule applied to historic costs). In theory, the optimisation incorporated into optimised replacement cost approaches means that they should trend lower than historic costs. This is because optimisation allows historic network inefficiencies to be excluded from the RAB and technological change allows the same services to be provided at a lower cost. In practice, however, optimised replacement cost approaches often trend higher than their historic cost counterparts, particularly when asset prices have been rising such that they offset cost savings from optimisation.

4.1.1.3 Re-valuing the RAB versus locking it in

In telecommunications, both in Australia and internationally, the forward looking perspective to measuring TSLRIC+ for fixed line services has involved continually re-valuing the existing sunk assets used in providing these services, based on their optimised replacement cost, each time a pricing determination is made. Under Part XIC, it has been open to access providers in regulatory processes to propose their preferred approach to access pricing for fixed line services and they have consistently proposed re-valuation of the RAB.

This is in contrast to the approach adopted in other sectors, such as energy. In these sectors, on the establishment of the 'opening' RAB at the commencement of the regulatory regime, existing sunk assets were re-valued. Subsequent re-valuations were initially permitted in electricity, but more recently, the potential for re-optimisation of the RAB has been removed.⁴⁶ Re-valuation has never been permitted in gas. Subsequently, in these industries, the value of these existing assets is currently locked-in.⁴⁷ Another key difference between these sectors is that the regulatory regimes for gas and electricity have been relatively prescriptive about the valuation approaches to be considered in valuing the RAB, whereas there is significantly more flexibility around this issue (and others) under the telecommunications regulatory regime.

In the energy sector the RAB evolves over time as:

⁴⁶ In regulating electricity infrastructure, consistent with the *National Electricity Code* requirements, the ACCC's Statement of Regulatory Principles (2004) indicated that the ACCC's preferred approach to asset valuation was to lock in the RAB. However, in recognition that the *National Electricity Code* provided for asset re-valuation, the ACCC stated that it would consider a proposed re-valuation on its merits if proposed by a Transmission Network Service Provider (TNSP). However, in 2005, new national electricity laws and rules took effect which replaced the *National Electricity Code* and further amendments were made in 2006 and 2007. These new provisions removed the need for DORC valuations or re-optimisation of the RAB. In particular, Schedules 6.2.1 and 6A.2.1 of the NER set out the RAB values to be applied by the AER to distribution network service providers (DNSPs) and TNSPs respectively, which were based on those previously set by regulators.

⁴⁷ NER, Schedules 6.2.1 and 6A.2.1; NGR Rule 77.

$$\text{RAB}_t = \text{RAB}_{t-1} + \text{Capex} - \text{Depreciation}$$

That is, the RAB in the current period is simply the RAB in the previous period adjusted for capital expenditure (capex) and depreciation.⁴⁸ (Of note, as outlined in section 4.2.1, whether forecast or actual capex and depreciation are used in rolling forward the RAB affects the access provider's incentives to behave efficiently.) Put another way, as outlined in section 4.1.1.1, the path of depreciation determines the path of the RAB.

This equation should also hold if the RAB is re-valued in each regulatory period — the RAB in the current period (RAB_t) would be the RAB in the previous period (RAB_{t-1}), but re-valued (say to reflect changes in replacement cost) and adjusted for capex. However, as outlined in section 4.1.1.1, in this case, the change in the value of the RAB determines the amount of depreciation — that is, to ensure the access provider is not over- or under-compensated over the long term, the amount of depreciation should be set to reflect the change in the value of the RAB.

This highlights another key difference between the approach that has been adopted to date in telecommunications and the approach adopted in the energy sector. In the energy sector, past depreciation was taken into account in establishing opening RABs and is taken into account in rolling forward the RAB from one regulatory period to the next. On the other hand, in telecommunications, as existing sunk assets have been continually re-valued at their full optimised replacement cost, that is, past compensation received on (i.e. past depreciation of) the existing assets has not been taken into account when establishing the RAB in each 'regulatory period'.

4.1.1.4 Why consider locking-in the RAB?

This section outlines two reasons why a move to a locked-in RAB to determine and assess access prices under Part XIC might be considered. Firstly, in order to promote regulatory certainty, and secondly, because the likelihood that *not* re-valuing sunk telecommunications assets will lead to inefficient bypass appears less than initially envisaged.

Improving regulatory certainty

As noted above, industry participants have raised some issues regarding elements of the current access pricing approach. In particular, access providers have publicly noted the uncertainty that revaluing the RAB creates. For example, in its submission to the Government's consultation on regulatory reforms, *Regulatory Reform for 21st Century Broadband*, Telstra noted that:

In gas and electricity for example, a debate was had at the outset over the size of the regulated asset base and, in general terms, from then on disputes have been confined to a relatively small number of issues. In contrast, the telecommunications regime has sought to re-estimate the entire regulated asset base periodically as regulated prices have been considered... A decade-long debate on access prices has yet to provide a resolution on the issue of how to determine the underlying cost of Telstra's copper network... A circuit breaker is needed to resolve this issue so the industry can get certainty and turn its focus and resources to the

⁴⁸ This formulation of the RAB over time is often described as the asset base roll forward equation.

business and operational challenges of transitioning to the NBN... We believe many second-order disputes could be resolved commercially once there is certainty on the key economic issue of costs... We recommend adoption of the approach used in the gas and electricity industries. Under this approach, the capital cost base is agreed at the commencement of a pricing period (which could be the full eight year transition period) and then adjustments made annually to reflect actual capital flows and operational expenses. We do not underestimate the ongoing difficulties that other industries face on issues such as the cost of capital but we believe that this approach would greatly reduce the number of issues in dispute once the regulated asset base is established.⁴⁹

More recently, in its submission to the ACCC's *Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS and LSS*, Optus stated that:

By contrast, there is no logical rationale for the use of optimised replacement cost by itself. The use of an asset valuation methodology which significantly overvalues sunk assets and which has previously been rejected by the Tribunal increases uncertainty and unpredictability, thereby increasing the risk of investment and undermining incentives for efficient investment.⁵⁰

'The Access Seekers' submitted in response to the same consultation process that:

The Access Seekers agree with the Commission's proposals and comments [in its submission to the Government's consultation on regulatory reform], particularly that...re-valuing the RAB also creates considerable uncertainty for both access providers and access seekers over the path of access prices over time, and a risk that the access provider's costs will be over or under recovered...In the Access Seekers' opinion, it has allowed Telstra to over-recover its costs.⁵¹

Continually re-valuing the RAB creates uncertainty for both access providers and access seekers. This was noted by the ACCC in its 2004 Statement of Regulatory Principles, where it considered the issue in the context of its regulation of electricity transmission revenues:

...periodic revaluation of sunk assets can lead to significant variations in the value of sunk assets due to differences between asset replacement costs and historic costs. Revaluations can lead to unpredictable revenues and prices, and the prospect of windfall gains or losses. Periodic revaluation can also create a risk that efficient expenditure may not be recoverable. This may deter efficient investment.⁵²

⁴⁹ Telstra, *Submission to the National Broadband Network: Regulatory Reform for 21st Century Broadband Discussion Paper*, 2009, pp. 9-10.

⁵⁰ Optus, *Optus Submission to Australian Competition and Consumer Commission in response to draft determination on Pricing Principles and Indicative Prices for Fixed Line Services*, October 2009, p. 36.

⁵¹ Adam Internet; Agile; Amcom; Chime Communications/iinet; Eftel; Netspace Networks; Network Technology (Australia); Saunders Properties/TSN Communications; and Wireband Networks, *The ACCC's Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS and LSS*, August 2009, pp. 9-10.

⁵² ACCC, *Statement of principles for the regulation of electricity transmission revenues — background paper*, 2004, p. vii.

At this time, the ACCC indicated that its preferred approach was to lock-in the RAB. However, in recognition that the *National Electricity Code* provided for asset re-valuation, the ACCC stated that it would consider a proposed re-valuation on its merits. However, in 2005, new national electricity laws and rules took effect which replaced the *National Electricity Code*. Further amendments were made in 2006 and 2007. The new provisions removed the need for DORC valuations or re-optimisation of the RAB.

In the context of falling replacement costs, re-valuation of the RAB creates uncertainty for access providers in relation to whether they will be able to recover their costs (even those that are efficiently incurred). On the other hand, in the context of rising replacement costs, re-valuation of the RAB creates uncertainty for access seekers and consumers in relation to possible cost over-recovery by the access provider — that is, access seekers and consumers will pay prices that reflect costs that are above those the access provider has actually incurred. In contrast, locking-in the value of the asset base can reduce this shifting of risk between, and ensure a greater level of certainty for, access providers, access seekers and consumers.

Continually re-valuing the RAB also creates uncertainty at a practical level. In valuing sunk assets at their replacement cost, cost models are typically used which estimate the cost of replacing the existing network with an optimised network — these models have generated considerable debate and contributed to uncertainty in the pricing of telecommunications services into the future. The more recent models submitted by access providers (e.g. the TEA model) and released by the ACCC (e.g. the Analysys model) have been significantly more transparent than models put forward in the past, however, there is still considerable debate as to the inputs used in generating access prices. In its submission to the NBN Expert Panel on regulatory issues, one of Telstra's expert advisors, Professor George Yarrow, noted that:

Determining the forward looking, long-run costs associated with network assets is a complex and often controversial task in most utility sectors, but this is particularly the case in telecoms. The complexity can, in part, be attributed to the general approach to pricing that has been adopted, which typically involves the modelling of a hybrid network and consequently allows considerable discretion in the estimation of relevant parameters. This discretion derives from the wide range of assumptions that can be incorporated into the modelling of costs associated with specific network services...depending upon the particular combination of assumptions used (which are at the discretion of the regulator), [this can] yield quite a wide range of possible estimates of the unit cost of supplying a defined service.⁵³

Balancing the legislative criteria

As noted above, the 1997 Pricing Principles Guide was developed against the backdrop of an expectation that there was more potential for efficient infrastructure-based competition than in other regulated industries — there was thus a particular focus on preventing inefficient duplication of infrastructure, and promoting infrastructure-based competition where efficient (i.e. promoting duplication of the existing network with more efficient technologies).

⁵³ Telstra, *Public Submission on the Rollout and Operation of a National Broadband Network for Australia*, 2008, p. 12.

In this context, it was thought that valuing existing sunk infrastructure at its optimised replacement cost at the time of a pricing determination would generate prices that would provide investors with correct signals concerning whether to build their own infrastructure to provide services, or to purchase access to the existing infrastructure. It was thought that valuing the existing infrastructure at its actual/historic cost could encourage access seekers to build their own infrastructure, when it could be more efficient for them to buy access services provided by the incumbent. The 1997 Pricing Principles Guide noted:

...in telecommunications where technology advances rapidly, historically incurred expenditures often have little relationship with (and generally overstate) the true economic costs of replicating an asset's service potential. As such, it will often inflate the access price and encourage inefficient by-pass.⁵⁴

That is, it was thought that a replacement cost valuation of the existing network would generate a value for this infrastructure that was lower than that derived by a historic cost valuation (as it was assumed the least cost technology would be continually changing). The concern was that a historic cost valuation would thus lead to prices that were 'too high' and which would encourage inefficient duplication of the infrastructure.

However, the cost of replacing the infrastructure that provides fixed line services has been increasing — driven by increases in the costs of the largest components of fixed line telecommunications networks (for example, ducts and pipes) — rather than decreasing, as was assumed would occur when the regime began.⁵⁵ Replacement cost valuations of these assets have thus trended higher than their historic cost counterparts.

Hence, the concerns expressed in the 1997 Pricing Principles Guide — that measuring the costs of this infrastructure on a historic, rather than replacement cost, basis would lead to inflated access prices which would encourage inefficient bypass — may, in hindsight, have been overstated, given that the cost of replacing the infrastructure has been rising. By definition, in such an environment duplication of fixed line infrastructure would be likely to be inefficient, and unlikely to occur (particularly if there are economies of scale associated with supplying fixed line services over the existing infrastructure).

In this context, it may be that, going forward, locking in a value for this infrastructure, such that in future regulatory periods its value is based on actual costs, would be unlikely to create incentives for inefficient bypass. Nonetheless, if inefficient bypass was still considered likely, it could be deterred under a locked in asset base approach by adjusting the depreciation schedule in an appropriate manner (as outlined in section

⁵⁴ ACCC, *Access Pricing Principles Guide*, p. 43.

⁵⁵ See ABS, 6345.0, 'Labour Price Indexes June 2008', Table 22 (construction & communications services, private and public, excluding bonuses); and ABS 6427.0, 'Producer Price Indexes, September 2008', Table 10, indexes 2562 and 2852.

This has been coupled with technological advancements which have extended the functionality of the legacy network.

4.1.1.1), without the cost of the uncertainty and risk associated with re-valuing the assets outlined above.

This discussion suggests that it may be more efficient for access seekers to provide *fixed line* services in the retail market by purchasing access services from the existing fixed line network rather than by building their own fixed line infrastructure. The ACCC notes that, whilst some infrastructure-based competition (in the form of Optus' HFC network) and quasi-infrastructure based competition (in the form of access seekers installing their own DSLAMs in Telstra exchanges) has developed in particular geographic areas, widespread end-to-end competing infrastructure, *able to provide services of comparable price and quality to the incumbent's network*, does not appear to be emerging to the extent initially envisaged.

As noted in its final decision on Telstra's exemption in respect of Optus' HFC network, whilst Optus' HFC network may offer Optus the capability to provide substitutable retail services to the incumbent's network at a similar price, it currently does not have the coverage to provide a competitive constraint in all regions.⁵⁶ Its geographic coverage has not increased since its initial rollout.

On the other hand, several mobile and fixed wireless networks with wider coverage than Optus' HFC network have emerged.⁵⁷ However, as the ACCC noted in its Final Decision on Telstra's 2008 Band 2 ULLS Undertaking, competition between services delivered on the incumbent's network and alternative access-based networks depends on the degree of substitutability between broadband/DSL and voice services delivered on the incumbent's network compared to that on alternative access infrastructure-based networks.⁵⁸ For instance, voice services delivered over the incumbent's network and mobile networks may be substitutable, but high speed broadband services delivered over these platforms may not be close substitutes.⁵⁹

Wireless/mobile networks are increasingly capable of providing competitive voice and lower bandwidth data services and there are expectations that shared cell bandwidth capacities will continue to increase over time.⁶⁰ However, as the ACCC outlined in detail in its 2009 Fixed Services Review,⁶¹ its final decision on Telstra's exemption in respect of Optus' HFC network,⁶² and its report on Telecommunications Competitive

⁵⁶ ACCC, *Telstra's exemption application in respect of the Optus HFC network — Final decision*, Public version, 2008, pp. 41; 46.

⁵⁷ ACCC, *Fixed Services Review Declaration Inquiry for the ULLS, LSS, PSTN OA, PSTN TA, LCS and WLR*, 2009, pp. 41-53.

⁵⁸ ACCC, *Assessment of Telstra's ULLS Band 2 Monthly Charge Undertaking — Final Decision*, 2009, p. 94.

⁵⁹ *Ibid.*

⁶⁰ ACCC, *Fixed Services Review*, 2009, pp. 41-53.

⁶¹ *Ibid.*

⁶² ACCC, *Telstra's exemption application in respect of the Optus HFC network*, 2008, pp. 41; 46.

Safeguards for 2007–2008,⁶³ these technologies usually involve the sharing of capacity between users, and consequently require significantly increased network capacity as the number of users and the amount of traffic they generate grows. This is particularly an issue in densely populated areas and if the availability of spectrum is constrained. Future technological improvements such as Long-Term Evolution (LTE) can provide alternative ways of improving service quality, however, the expected timeframes suggest they will continue to lag the offerings available via fixed-line networks.⁶⁴ Consequently, the ACCC remains concerned that wireless networks are not yet close substitutes, particularly in densely populated regions, for higher bandwidth fixed networks.⁶⁵

The focus on re-valuing sunk assets to promote infrastructure-based competition occurred not only in Australia, but also internationally. For example, in the UK in 1997, Ofcom's predecessor Oftel shifted its cost accounting methodology from historic cost accounting (HCA) to current cost accounting (CCA), premised on the need to promote additional access infrastructure competition, which was thought to be best achieved by basing costs on those of a new entrant. It was anticipated that the subsequent upward re-valuation of existing assets would be counterbalanced by the emergence of strong facilities-based competition. However, when by 2004 this had not emerged, Ofcom concluded that BT had been earning a return above cost on its pre-1997 assets and subsequently undertook measures to prevent further over-recovery on the pre-1997 assets.⁶⁶

The ACCC seeks the views of interested parties regarding:

1. whether locking in a value for the RAB, rather than the current approach of continually re-valuing the RAB, would create more certainty for access providers and access seekers, and in turn assist them in making efficient decisions regarding their future investment patterns and general business plans? Why/why not?
2. whether the value of the RAB should be locked in or whether it should continue to be re-valued?
3. whether there are any services for which a pricing approach that locks-in and rolls forward the RAB would not be appropriate? If so, what approach should be taken to pricing these services?

Interested parties should consider the impact on the legislative criteria outlined in section 3 of this Discussion Paper in their responses to these questions.

⁶³ ACCC, *Telecommunications competitive safeguards for 2007–2008 — changes in the prices paid for telecommunications services in Australia 2007–2008*, 2009, pp. 12-13.

⁶⁴ Ibid.

⁶⁵ ACCC, *Fixed Services Review*, 2009, p. 32.

⁶⁶ Ofcom, *Valuing Copper Access — Final Statement*, 2005.

4.1.2 Defining and measuring an opening RAB

If the lock-in and roll-forward approach is adopted, decisions will need to be made which establish the value of the opening RAB, in particular, what ‘bundle of assets’ should be included in the RAB and how these assets will be valued. This section seeks interested parties views on these issues.

4.1.2.1 Separate RABs for different services

Arising from the ‘layered’ nature of telecommunications networks and service provision,⁶⁷ some of the infrastructure used in the production of telecommunications services is common to the production of multiple services, while other elements of the infrastructure are attributable to some services but not others. For example, the ULLS is provided at a lower layer of the network than the WLR — both the ULLS and WLR require that the access provider supplies access to the copper loop, whilst the WLR requires that access also be supplied to the switching equipment that places a voice signal over the copper loop. (The LSS requires access to the same infrastructure as the ULLS, but the costs of the infrastructure are not included in LSS monthly charges, as these costs are recovered by the WLR monthly charge or revenues from Telstra’s retail voice services.) In contrast, the PSTN OTA services and LCS also require access to ‘core network’ equipment, but not the copper loop. This is in contrast to, for example, the energy sector, where broadly the same infrastructure is used in the provision of all services provided over the network.

This raises the prospect in telecommunications of potentially adopting separate RABs for different services, reflecting the layered nature of service provision. Having separate RABs for different services could be a mechanism for allocating infrastructure costs to different services. On the other hand, infrastructure costs could be allocated from a single RAB to different services by specifying cost allocation rules, as discussed in section 4.3.1. In both cases, decisions would need to be made regarding which assets to include in the cost pool for each service, and if there is infrastructure that is common to the production of multiple services, what proportion of the costs of these assets to include in the cost pool for each service. Under either approach, discrete values will need to be assigned to particular assets, and the costs of those assets appropriately allocated to regulated services without any double allocation of those costs.

4.1.2.2 Valuing the assets to be included in the RAB

Once a decision was made regarding which assets to include in the RAB(s), decisions would need to be made regarding the basis on which to value those assets. As noted in section 4.1.1.2, there are a number of approaches that could be used to measure the value of sunk assets in establishing the opening RAB, each of which will generate a different value for the opening RAB, and therefore result in either a one-off windfall gain (if the RAB increases from its current level) or loss (if the RAB decreases from its current level) for Telstra and its shareholders. However, as outlined below, it is the

⁶⁷ For example, the lowest ‘layer’ of the network is the medium over which services are provided — in the case of the legacy network, this would be the copper wire; the next layer up is the ‘physical’ layer, which is the electronics that put signals onto the medium — for the legacy network, this might be a DSLAM for broadband service provision, or switching equipment for voice service provision; and the next layer up is the data link — that is, ensuring that the data gets from point to point.

decisions made around the treatment of future depreciation and capital expenditure that will have ongoing consequences for the access provider's incentives to undertake timely and efficient upgrades, and therefore whether the legislative criteria are met. Nonetheless, an opening RAB that generated a windfall loss would be likely to have broader implications for regulated firms' perceptions of regulatory certainty across all regulated industries, possibly with subsequent negative implications for investment in regulated infrastructure.

Taking into account past compensation

The approach used for valuing the opening RAB — including whether past compensation on the assets is taken into account — should complement the approach to depreciation and capital expenditure going forward in order to minimise cost over- or under-recovery over the long term. In particular:

- If the opening RAB values existing assets at a depreciated value, for example, DORC or DHC — which takes into account the past compensation received on the assets — this would be consistent with an approach whereby, going forward, these existing assets gradually 'unwind' from the RAB as they are depreciated, and future replacement capital expenditure is rolled into the RAB at its actual cost as it occurs.⁶⁸ Under this approach, once investment costs in existing assets have been fully recovered, they are no longer included in access prices, even if the existing asset continues to be used. Access seekers, and ultimately end users, are therefore not charged more than once for the costs of investing in the existing assets, which may lead to efficient use of the existing infrastructure. Further, because the firm will be compensated via higher regulated prices only when new investment is actually undertaken, this could create incentives for new investment to occur.
- If the opening RAB were to value the existing assets that are included in the RAB at an undepreciated value, such as optimised replacement cost — and if this is not accounted for by adjusting the allowed depreciation accordingly, as discussed in section 4.1.1.1 — replacement capital expenditure should not be added to the RAB as it occurs. 'Replacement' capital expenditure should only be added to the RAB when the costs of the optimised assets are fully depreciated out of the RAB (rather than when the underlying assets are actually replaced). This is because the optimised replacement cost value for the existing bundle of assets which was allowed in the opening RAB already compensates the operator for future replacement expenses — allowing replacement expenditure to enter the RAB would allow the access provider to recover these costs from access seekers and ultimately

⁶⁸ An international example of taking past depreciation into account in each regulatory period is provided by the Ofcom experience. In 2005, Ofcom split BT's asset base into a pre- and post-1997 asset base to prevent further over-recovery on pre-1997 assets as a result of the upward revaluation noted earlier. The regulatory asset value for BT's pre-1997 assets was set equal to the closing historical cost accounting value for those assets in the 2004-05 financial year. This asset value is adjusted downwards over time to account for depreciation — it will therefore gradually 'unwind' as pre-1997 assets are retired and replaced. After this time, Ofcom anticipates that all BT's assets will be treated under a CCA basis. Ofcom, *Valuing Copper Access — Final Statement*, 2005.

end-users twice.⁶⁹ Capital expenditure on network expansion or to support completely new functionality could nonetheless be added to the RAB as it occurs, as this would not have been previously compensated for. Relative to the first approach, this approach may create incentives to delay investment in replacement assets (i.e. to ‘sweat’ existing assets). This is because the access provider is ‘paid’ to replace the existing assets even if it does not actually replace them, which may allow the access provider to be compensated more than once for the costs of investing in the existing assets.

A key difference between these alternatives is that, in adopting a DHC or DORC approach to asset valuation, the first takes into account the past compensation that has been received by the access provider on the existing assets, whereas the second does not. The first approach therefore requires a consideration of the amount of compensation received on the assets in the past, the period over which these costs were recovered and the method of depreciation adopted (in particular, determining whether cost recovery has been front or back loaded). This is in contrast to the approach adopted in telecommunications regulatory pricing to date, whereby, in continually re-valuing the RAB at its ORC, past compensation (i.e. past depreciation) has not been taken into account in setting regulated access prices.

Information on the amount of the access provider’s costs that have been recovered in the past (i.e. past depreciation) is required in order to ensure that the access provider is not over- or under-compensated over the long-term. If the opening RAB were set below the access provider’s residual costs the service provider would suffer a windfall loss; if set above, end-users would be paying a second time for the depreciation allowance of a portion of the assets, delivering a windfall gain to the access provider. Of note, the higher the costs that the access provider is yet to recover (i.e. the higher the value of the opening RAB) and the shorter the period over which it has to recover them (i.e. the shorter the remaining asset lives — outlined in section 4.1.3 below), it is likely that a higher level of prices will be required to ensure the access provider is not under-compensated.

Asset valuation methodologies

As noted in section 4.1.1.2, cost based approaches are generally used by regulators in setting an opening RAB. Telstra’s regulatory accounting framework (RAF) accounts provide information on the historic, and depreciated historic costs of investment in some CAN and inter-exchange network assets, as well as the current and depreciated current replacement costs of some CAN and inter-exchange network assets. The

⁶⁹ This approach to asset valuation would not lead to over-compensation if the upward valuation of the existing assets brought about by the optimised replacement cost valuation was countered by adjusting the depreciation schedule accordingly, as per the discussion in section 4.1.1.1. This approach to asset valuation also may not lead to over-compensation if the regulator could commit to not allowing future replacement capital expenditure into the asset base until the asset lives of the regulated assets expire. However, this policy would be difficult to maintain over asset lives possibly exceeding 40 years. It may also increase incentives to sweat existing assets that are partly paid off — the access provider has incentives to wait until the regulatory asset lives expire so it can then be compensated under the regulatory regime for this expenditure. This incentive may be particularly pronounced as the end of the regulatory period approaches.

Analysys cost model provides an estimate of the optimised replacement cost of the CAN and core network in all regions and Telstra's TEA model provides an estimate of the optimised replacement cost of the CAN in Bands 1 to 3.

In addition to these cost-based approaches, another option may be to set the value for the opening RAB using a 'value-based' approach. For example, the RAB could be set based on the NPV of expected future cash-flows, which could be projected by examining current regulated prices and expected future demand for the relevant regulated services. An advantage of this approach would be that there should not be a significant change in the level of the opening RAB from the level that is currently implied under the existing regulatory pricing model. Therefore, prices may be able to remain at their current levels for a longer period of time than if the RAB were to change significantly.

However, there can be circularity associated with this approach. If valuing the network based on the revenues that it is expected to earn, the future revenues are based on future prices for fixed line access services, which are in turn guided by the ACCC and based on a cost-based assessment of the CAN and core network values. For example, if the RAB was to be based on current Indicative Prices for the ULLS — which are based on the assessment of the CAN network values generated by the PIE II cost model and international benchmarks — the value for the network derived by a 'value-based' approach would, in effect, be likely to somewhat reflect the value generated by the PIE II cost model. For this reason, cost based approaches are generally used by regulators in setting an opening RAB.

Another alternative listed in section 4.1.1.2 is a DORC valuation. The starting point for a DORC valuation is typically an ORC valuation. However, a DORC valuation differs from an ORC valuation in that it is adjusted downwards from the ORC valuation to take into account the compensation received on, or depreciation of, the asset in the past, and the remaining life of the asset. When the energy sector went through a process of establishing opening RABs in the 1990's (either by state based regulators or the ACCC, depending on which body had regulatory authority over the assets), DORC was the approach generally adopted (although the DORC value was often adjusted downwards for various reasons).⁷⁰

Constructing a DORC valuation

There are several different ways in which DORC can be constructed.

One approach to deriving DORC from an estimated ORC has been to assume that the asset depreciates uniformly over the life of the asset. DORC is then equated to a percentage of ORC, with the percentage equal to the expected remaining life of the existing asset expressed as a proportion of the expected life of a replacement asset. This approach assumes the asset was previously depreciated on a straight-line basis and requires knowledge of the remaining lives of the relevant assets, the lives of replacement assets and the amount of depreciation that has been recovered in the past.

⁷⁰ Queensland Competition Authority, *Proposed Access Arrangements for Gas Distribution Networks: Allgas Energy Limited and Envestra Limited — Final Decision*, October 2001, p. 166.

The approach can also be adjusted for different methods of depreciation used in the past. For example, if an annuity (flat or tilted) was used in the past, the past depreciation can be determined based on the proportion of the annuity that related to depreciation (as opposed to the return on capital). Indeed, if using this method to calculate DORC, in taking into account past depreciation, the basis on which depreciation has been calculated in the past needs to be considered. If an annuity (tilted or flat) has been applied, rather than straight line depreciation, although the asset may be 50 per cent through its life, less than 50 per cent of the costs of the asset may have been depreciated (e.g. under a flat or back loaded annuity). This would mean that more of the asset cost would need to be recovered in the second half of the asset's life than the first. Subsequently, if a flat or back loaded annuity has been applied to depreciate the assets in the past, the DORC valuation would be higher than that derived had a straight line depreciation schedule been used in the past (and vice versa if a front-loaded annuity had been adopted in the past).

When considering the approach taken for DORC valuations of gas networks under the Gas Code, the High Court upheld the Australian Competition Tribunal's decision to reject the straight line depreciation approach for deriving DORC from ORC.⁷¹ In light of this decision, another approach to setting DORC, termed the NPV cost based DORC, developed. This method of constructing DORC uses the conceptual basis of a hypothetical new entrant to estimate what a firm with a given service output would pay to avoid being deprived of, and subsequently having to replace, its existing assets. In this context, DORC may be viewed as the maximum amount that a firm would be prepared to pay to retain the use of its existing assets (which have a lower remaining life, higher operating costs and lower service potential due to being an older technology) given the alternative of installing new assets (which have a longer remaining life, generally lower operating costs and higher service potential as they are constructed using the latest technology).

If it is assumed that the revenue stream under either alternative is the same, the value of the existing asset will be determined by the difference in the NPV of future costs of operating the existing asset relative to the new asset. Thus in the NPV cost based framework, the 'depreciation' of the ORC to DORC reflects the differences in the costs incurred in constructing, operating and maintaining the optimised replacement asset relative to the existing infrastructure. That is, DORC is equal to the:

- A. present value of the difference in capital expenditure incurred by the optimised replacement asset relative to the existing infrastructure; plus
- B. present value of the difference in operating and maintenance expenditure incurred by the optimised replacement asset relative to the existing infrastructure.⁷²

⁷¹ *East Australian Pipeline Limited v ACCC & Anor* [2007] HCA 44.

⁷² The present value of the difference in tax deductions (arising from the tax deductibility of operating and maintenance costs) available to the optimised replacement asset relative to the existing infrastructure should also be deducted from this figure, as should the PV of the difference in tax depreciation concessions available to the optimised replacement asset relative to the existing infrastructure.

In this context the present value of the capital expenditure associated with the optimised replacement asset is greater than that associated with the existing infrastructure — ‘A’ is therefore a positive number. On the other hand the present value of the operating and maintenance expenditure incurred by the optimised replacement asset is less than that incurred by the existing infrastructure — ‘B’ is therefore a negative amount. The DORC value is the net of these two amounts.

The ACCC seeks the views of interested parties regarding:

4. whether a single RAB should be adopted for pricing the ULLS, WLR, PSTN OTA, LSS and LCS services? Why/why not? Which assets should be included in the RAB? Consider the layered nature of telecommunications service provision in your response.
5. whether there should be different RABs for different fixed line services? Why/why not? If so, which assets should and should not be included in the different RABs for each service? Consider the layered nature of telecommunications service provision in your response.
6. how should past compensation to the access provider (i.e. past depreciation) be taken into account in setting an opening RAB?
7. which approach to valuing sunk assets should be used in setting an opening RAB?
8. whether the same approach should be applied to all asset categories, or whether different approaches should be applied to different asset categories (e.g. ducts and pipes versus electronics)?
9. if a DORC valuation were to be adopted, which approach to constructing DORC should be used?

Interested parties should consider the impact on the legislative criteria outlined in section 3 of this Discussion Paper in their responses to these questions.

As indicated in Figure 1, in any regulatory pricing approach, once decisions are made regarding the level of the opening RAB, further decisions will need to be made regarding how the sunk costs included in the RAB will be allocated and recovered over time (depreciation) and the rate of return on the RAB. This section seeks interested parties’ views on these issues.

4.1.3 Depreciation

As noted, in setting regulated access prices, a path of revenues/access prices over the life of a regulated asset that equates the present value of those revenues to the present value of the regulated asset’s capital costs (and operations and maintenance costs) will ensure the access provider is not over- or under-compensated in the long run. As outlined above, in pricing approaches where the RAB is not re-valued, the path of prices is determined by the choice of the path of depreciation. To ensure the access provider is not over- or under-compensated in the long run, the regulator would choose an amount of depreciation each regulatory period in such a way that the total

depreciation over the life of asset is equal to the total capital expenditure on the asset. (In approaches where the RAB is re-valued, the change in the value of the RAB determines the amount of depreciation in a period.) The approach to depreciation of the RAB going forward requires that decisions be made about the desirable profile of cost recovery over time and the period over which costs will be recovered (i.e. remaining asset lives). This section outlines these issues.

Types of depreciation schedules

It is important to distinguish between two types of depreciation — accounting and economic depreciation. Accounting depreciation deals with the allocation of investment costs over a period of time, which is typically an assumed asset life (or ‘book life’) — it is also sometimes referred to as amortisation. On the other hand, economic depreciation is the period-by-period change in the market value of an asset, or the decline in earning power of the asset over a period. It therefore involves a process of assessing changes in an asset’s value over time.⁷³

Whilst economic depreciation is the most theoretically correct method of depreciation, it is based on a market-based assessment of the asset’s value, which, because of its circularity, is not the approach typically used by regulators to value sunk assets. Estimating how this value will change over time requires that a number of assumptions are made about various parameters (such as changes in technology, trends in capital equipment prices, trends in the productivity of new capital assets, the future pattern of output, etc). The uncertainties and impracticalities surrounding the calculation of these parameters means that, in a regulatory context, economic depreciation profiles are typically not applied. Some form of accounting depreciation is most commonly used by regulators in regulated industries.⁷⁴ The most common approaches include:

- the annuity approach — costs can be allocated in equal amounts each regulatory period (i.e. can generate a flat price path over time) or can be front or back loaded (i.e. can generate a falling or rising price path over time);
- uniform/straight line depreciation — allocates costs in equal amounts to each regulatory period and leads to a declining price path over time (in periods between major capital expenditure); and

⁷³ The profile of economic depreciation over time depends on: changes in technology; trends in capital equipment prices; trends in the productivity of new capital assets; the future pattern of output; the pattern of operating costs over the asset’s life; and the cost of capital (as this directly affects the value of the asset). In general, accounting depreciation does not reflect economic depreciation. However, under some circumstances, accounting depreciation and economic depreciation are equivalent, for example when there is a regulated market with no competition in which the regulator commits to full capital recovery over the assets’ lives (that is, the regulator commits to a zero net present value for the firm’s total investment).

NERA, *Estimating the Long Run Incremental Cost of PSTN Access: Final Report for ACCC*, 1999; A. Hardin, H. Ergas and J. Small, *Economic Depreciation in Telecommunications Cost Models*, NECG, paper prepared for Industry Economics Conference Regulation, Competition and Industry Structure, 1999.

⁷⁴ NERA, *Estimating the Long Run Incremental Cost of PSTN Access: Final Report for ACCC*, 1999.

- sum of the years digits depreciation — front loads cost recovery (compared to straight line depreciation) and so results in a price path that starts higher and declines more rapidly over time.

The 1997 Pricing Principles Guide stated that ‘depreciation schedules should be constructed and based on the expected decline in the economic value of assets using a forward-looking replacement cost methodology’.⁷⁵ However, in practice, and for the reasons noted above, a tilted annuity approach — a form of accounting depreciation — has been used to date by the ACCC in telecommunications as a proxy for economic depreciation. As opposed to straight line depreciation:

- annuities simultaneously take into account both depreciation and the return on capital in annualising investment costs; and
- the resulting access prices are not directly linked to the vintage of the actual existing underlying infrastructure, which has been required given that the value of this infrastructure has been continually re-valued at its optimised replacement cost.

The choice of the approach to depreciation is essentially a question of how the costs of sunk investments should be allocated over time, and in turn, what the desired path of access prices over time should be. In particular, this involves decisions regarding whether cost recovery should be front or back loaded, or in equal amounts over time. In general, if the costs of replacing the infrastructure are falling, there may be an argument for applying a depreciation schedule that allows more cost recovery in the earlier years of an asset’s life because future infrastructure based competition might reduce the operator’s ability to recover costs later. On the other hand if the costs of replacing the infrastructure are rising, it is unlikely that the access provider will face this competition in the future, so the desired path of access prices over time might then reflect other considerations (i.e. be weighted towards meeting different legislative criteria).

These other considerations might reflect, for example, a desire to avoid ‘rate shocks’ or a desire to promote an efficient allocation of resources over time (for example, by adopting a price path that leads to lower prices in periods when demand is weak, and higher prices when demand strengthens — that is, a rising price path⁷⁶).

Regarding the potential for rate shocks, concerns are sometimes expressed with the asset base roll-forward approach and the application of straight line/sum of years digits depreciation, regarding the potential for ‘jumps’ in allowed earnings (price shocks), in response to old assets being fully depreciated and replaced with new assets. Such ‘rate shocks’ are not likely to be well received by access seekers and end-users. The size of the rate shock will be influenced by:

⁷⁵ ACCC, *Access Pricing Principles Guide*, p. 45.

⁷⁶ This would likely, however, require demand forecasts for a range of services which, in telecommunications markets, may be highly uncertain, or not available. Of note, the price path under this approach would likely be the direct opposite of that which would be generated if a straight line or sum of the years digits approach to depreciation were taken.

- the magnitude of the capital expenditure, both in absolute terms, and relative to the capital expenditure on the ‘old’ asset; and
- whether the infrastructure consists of a number of small assets, such that replacement of any one of these individual assets does not have a large impact on the RAB, or whether capital expenditure is lumpy.

If investment is incremental in nature, and/or replacement costs do not change significantly over time, price shocks when existing infrastructure is replaced will be less of a concern. If rate shocks are a concern, the options available for creating a more continuous path of earnings over time might be:

- adjusting straight line/sum of years digits depreciation schedules to allow higher levels of depreciation (and therefore higher prices) in the years leading up to replacement capital expenditure;
- adopting a tilted annuity approach to depreciation, with the tilt reflecting expected changes in asset prices;
- adjusting the RAB for CPI inflation in each regulatory period (sometimes called ‘real straight line depreciation’);⁷⁷
- adjusting the asset base for asset specific inflation over time (e.g. based on past asset specific inflation rates) — however, this could re-introduce the uncertainty associated with asset base revaluation as discussed in section 4.1.1.4.

So, the depreciation schedule can be directly adjusted to ensure a smooth path of earnings over time — for example, in regulating revenues in the energy sector, the Australian Energy Regulator (AER) chooses the path of depreciation to smooth (i.e. eliminate large changes in) the path of revenues over time during the regulatory period.

Remaining asset lives

In addition to the decisions that would need to be made around the profile of cost recovery going forward, decisions would also need to be made about the period over which these costs will be recovered. This requires a consideration of the remaining lives of the assets included in the RAB. As noted in section 4.1.2.2 for a given level of the opening RAB, the shorter the remaining asset lives, the higher access prices will need to be in order to ensure the access provider is not under-compensated over the long term.

If the asset life assumed for cost allocation purposes (the asset’s book life) is shorter than the useful life of the asset, an asset that has been fully depreciated in an accounting sense is still able to be used. Under a pricing approach which does not take into account past depreciation of and compensation on the regulated assets in setting regulated access prices (e.g. pricing approaches which value the assets at their optimised replacement cost) this raises the potential for end users to be

⁷⁷ This approach is adopted in the AER’s ‘Post-tax Revenue Model’.

charged more than once for assets where the full costs of investment have already been passed on to them. This is because the costs of a replacement asset are reflected in access prices without any requirement that investment in the replacement asset actually takes place. Hence, the access provider is able to be overcompensated on their existing assets and be paid to replace assets which it does not actually replace. This may affect incentives to invest in replacement assets.

The ACCC seeks the views of interested parties regarding:

10. the path of access prices over time that should be adopted — interested parties should consider whether cost-recovery should be front loaded (suggesting that the path of access prices over time will fall), back loaded (suggesting the path of access prices over time will rise) or in equal amounts in each regulatory period.
11. which approach to depreciation should subsequently be adopted?
12. whether price shocks are likely to be a concern in the telecommunications context? If so, what approach should be taken to reducing the size of the rate shock?
13. whether the approach to depreciation should be the same for all classes of assets in the RAB? Why/why not?
14. what is the appropriate period over which to recover these costs — i.e. appropriate asset lives?

Interested parties should consider the impact on the legislative criteria outlined in section 3 of this Discussion Paper in their responses to these questions.

4.1.4 The rate of return

In capital intensive industries such as telecommunications, small changes to the regulated rate of return on capital can have a significant impact on end-user prices and levels of investment. A cost of capital that exceeds the normal commercial return in the market earned by investments of similar risk will give investors a return above what they actually require to induce them to make the investment and lead to an access price greater than the economic costs of providing telecommunications services. On the other hand, a cost of capital below the normal commercial return will prevent a regulated firm from gaining a legitimate return on its investment and so may not induce funds to be supplied for investment.

Rates of return can be stated on a pre-tax or post-tax basis, in real or nominal terms and as a rate of return on equity, debt or a weighted average of both. The ACCC consistently estimates the cost of capital in its telecommunications regulatory decisions on what is known as a nominal vanilla Weighted Average Cost of Capital (WACC) basis. The 'nominal vanilla' WACC is the cost of capital weighted by the total funding proportions of debt and equity; stated in nominal terms; and with the cost of debt stated on a pre-tax basis (which is generally the same as the cost of debt stated on a post-tax basis), and the cost of equity on a post-tax basis. Hence, with the vanilla WACC, all tax (and imputation) impacts are considered in cash flows and not in the cost of capital. In

the interests of regulatory certainty and consistency, the ACCC proposes to continue to discuss the cost of capital in terms of a ‘nominal vanilla’ WACC.

This section briefly states the ACCC’s historic and well established approach to estimating the various vanilla WACC parameters.

Debt and equity ratios (gearing) — use of a benchmark.

Risk free rate — yield on (Commonwealth) government bonds; 10-year term; average rate over ten days leading up to the start of the regulatory period; term must be consistent with the term assumed in estimating the debt premium.

Cost of debt/debt risk premium — use of a benchmark; benchmark credit rating of ‘A’ for Telstra; term to match term used for risk free rate.

Return on equity — use of the (domestic) Capital Asset Pricing Model (CAPM).

Market Risk Premium — for consistency, the ACCC in telecommunications adopts the market risk premium applied in other industries regulated by the ACCC.

Equity and asset beta — use of direct estimation and benchmarking.

Tax rate — vanilla WACC does not include the impact of company tax — company tax liabilities have a large impact on required revenues and are more transparently accounted for when modelled in cash flows (after adjustments for the utilisation of imputation credits are made); tax rate only enters the vanilla WACC in the re-levering and de-levering process; in telecommunications, use of effective, rather than statutory tax rate.

Imputation factor (gamma) — benefits of imputation should be captured in cash flows rather than the vanilla WACC; imputation only relevant to the vanilla WACC in the re-levering and de-levering process and estimation of the market risk premium.

Debt and equity issuance costs — in telecommunications, preference for treating debt issuance costs in cash flows when they arise, though have been included in the WACC in the past where they cannot be placed in cash flows.⁷⁸ Equity issuance costs not included in the WACC, rather, included in operational or capital expenditure cash flows.

The ACCC is of the view that a change to other elements of the approach to access pricing does not give rise to the need to review the ACCC’s approach to estimating the vanilla WACC.

⁷⁸ For example, Telstra’s PIE II model does not allow debt issuance costs to be included in cash flows. Hence, regulatory processes that have used this model have allowed debt issuance costs to be included by adding debt issuance costs to the cost of debt.

4.2 Providing incentives to behave efficiently

This section of the Discussion Paper considers issues associated with ensuring that the access provider has incentives to deliver its services at a high level of efficiency and at an efficient quality.

4.2.1 Incentives to improve productivity

If costs are not incurred efficiently and are passed on to access seekers in access prices, this may, if passed through to retail prices, lead to inefficiently high prices for consumers and a loss of allocative efficiency. It also means that efficient investment in infrastructure is not being encouraged. Such an outcome would not be in the LTIE. In any access pricing approach, consideration therefore needs to be given to how to encourage efficiencies — related either to reducing the cost of producing a given level of output, or producing more output for a given level of costs — in the access provider's expenditure decisions.

With RAB roll-forward approaches, the extent to which incentives are created to engage in efficient capital expenditure is dependent on how the regulator rolls forward actual versus forecast capital expenditure and actual versus forecast depreciation.⁷⁹ Similarly, the extent to which incentives are created to engage in efficient operations and maintenance expenditure depends on how forecast versus actual operations and maintenance expenditure is treated.

If the regulator:

- in rolling forward the RAB, rolls forward actual (as opposed to forecast) capital expenditure; and/or
- allows all actual (as opposed to forecast) operations expenditure to be recovered

there will be a direct link between regulated prices/revenues and actual costs. This may not provide incentives for the access provider to minimise costs or improve productivity, and could possibly encourage over-investment in capital ('gold plating'). This is because prices are set to cover the firm's actual costs, irrespective of their level. If the firm invests (capital and/or effort) in cost-minimisation or productivity improvements, then the benefits to the firm will subsequently be passed on to consumers in the form of lower prices, possibly removing the incentives for the firm to make such cost-minimisation or productivity improving effort. Similarly, the firm may not have strong incentives to avoid cost increases or productivity decreases, as it will be compensated for these via higher regulated prices.

⁷⁹ In principle there are a number ways in which actual capital expenditure versus forecast could be rolled into the RAB. Three alternatives include: (a) roll forward based on actual capex and forecast depreciation (which leads to low-powered incentives to reduce capital expenditure); (b) roll forward based on actual capex and actual depreciation (which leads to medium-powered incentives to reduce capital expenditure); (c) roll forward based on forecast capex and forecast depreciation (which leads to high-powered incentives to reduce capital expenditure). Biggar, D., *Updating the Regulatory Asset Base: Revaluation, Roll Forward and Incentive Regulation*, Prepared for the Draft Regulatory Principles (DRP) Forum, 2004.

At a conceptual level, efficiencies can be encouraged by ‘de-linking’ actual costs from forecast costs. So, for example, in rolling forward the RAB, the regulator could roll-forward forecast, rather than actual capital expenditure; similarly, it could not make adjustments for differences between forecast and actual operations expenditure. Not clawing back any differences between forecast and actual expenditure provides an incentive to reduce expenditure.

This is the rationale behind CPI-X type regulation. Under CPI-X regulation, prices are set initially with reference to underlying costs, but are then adjusted over time with reference to expected or desired productivity improvements (an ‘X’ factor) (and the CPI). The efficiency gain factor (‘X’) is often measured not only on the firm’s past performance, but also on the performance of other comparable firms — it is thus intended to be a proxy for the pressure created by a competitive market. Changes in prices over time therefore typically do not reflect the firm’s realised production costs or profits. Suppressing the link between cost inefficiencies and price increases (and cost efficiencies and price decreases) in turn provides the firm with greater incentives to reduce costs. Within the regulatory period the savings already reflected in the value of ‘X’ accrue to the user, while any gains achieved in excess of the ‘X’ factor directly accrue to the access provider.⁸⁰

Carry forward mechanisms are also sometimes adopted to provide continuous incentives to initiate efficiencies throughout the regulatory period. These allow any efficiency benefit/loss to be carried forward for a fixed period of time after the year in which the benefit/loss is incurred.⁸¹ The reasoning behind this is that access providers may face a diminishing incentive during a regulatory period to initiate efficiencies — that is, if the efficiency occurs in year one and the gains accrue without a lag, the access provider would retain the benefit of the efficiency saving in each year of the regulatory control period. However, where an efficiency saving occurs in the latter years of the regulatory period, the service provider would only enjoy the benefit for the remaining years of the regulatory period. Carry forward mechanisms are applied to some forms of electricity service providers’ expenditure by the AER.⁸² They are also adopted under the retail price cap arrangements currently applied to Telstra. If Telstra prices below the maximum level permissible by the cap, the difference may be carried forward as a credit into the next price cap period (typically a year); similarly, a decrease in costs does not need to be reflected by a decrease in prices until the following period.

⁸⁰ In practice, there can be limitations associated with CPI-X regulation, in particular, when it is not applied in a ‘pure’ form. In ‘pure’ CPI-X price cap regimes, the cap is not adjusted for actual changes in demand and costs at the end of a regulatory period — prices therefore only ever change by CPI-X. However, if the cap is adjusted at regulatory resets — say because the regulator wants to reflect changes in actual costs or demand in order to satisfy the overall revenue requirement — the magnitude of price changes between regulatory periods can be large if there is a high degree of uncertainty regarding future costs and prices. FANOC, *Special Access Undertaking to the ACCC Under Div. 5 of Part XIC of the TPA 1974 in respect of the Broadband Access Service*, 2007.

⁸¹ AER, *Electricity Distribution Network Service Providers — Efficiency Benefits Sharing Scheme*, 2008.

⁸² Ibid.

4.2.1.1 Approach adopted to date in telecommunications

In telecommunications regulation, the 1997 Pricing Principles Guide stated that the use of ‘forward-looking’ rather than historic costs would result in more efficient investment in infrastructure, as the use of historic costs would guarantee a normal commercial return to the access provider independent of the quality of its investment decisions. That is, cost valuation based on the best-in-use technology (rather than historical costs) was argued to be a mechanism that would provide incentives for appropriate investment decisions through rewarding (penalising) the access provider for good (poor) investment decisions.⁸³

In terms of mechanisms to encourage efficient capital expenditure, in principle, the application of forward-looking costs to valuing the RAB — i.e. valuing the RAB at its optimised replacement cost — should value existing assets at the cost of a Modern Equivalent Asset (MEA). A MEA is the lowest cost asset built with the latest available, proven technology which can provide the equivalent service potential as the service which is being costed. The ACCC has previously indicated a preference for either best-in-use or forward-looking technology, but has generally accepted the assumption of the best-in-use technology, as this requires less speculation about future evolving technologies or substantially altered network design. The ACCC has in the past argued that the optimised replacement cost approach is more compatible with the competitive standard of efficiency than other asset valuation approaches, since in a competitive market, prices are set on the basis of the prevailing technology — in such an environment, operators would compete on the basis of costs likely to be incurred and are not compensated for costs incurred through inefficiency. The ACCC has noted that the application of the optimised replacement cost approach to asset valuation assumes that the least cost technology is continually changing and that there is the potential for efficient infrastructure duplication using that more cost effective technology.⁸⁴

In terms of mechanisms to encourage efficient operations and maintenance expenditure, the ACCC has stated that an efficient, forward looking implementation of TSLRIC+ requires allowances for operating and maintenance costs, and indirect costs, to be set with reference to international benchmarks, rather than the access provider’s actual operating and maintenance costs and actual indirect overheads.⁸⁵

Of note, under the current TSLRIC+ pricing approach, the operations and maintenance expenditure to be recovered in access prices is typically estimated as a percentage mark-up on capital expenditure. On the other hand, in pricing approaches which lock in and roll-forward the value of the RAB, the operations and maintenance expenditure to be recovered in access prices or revenues over a regulatory period is typically forecast as an absolute amount, independent of capital expenditure, rather than being a percentage mark-up on capital expenditure (taking into account what an efficient level of operations and maintenance expenditure for the given technology would be).

⁸³ ACCC, *Access Pricing Principles Guide*, pp. 29-30; 43.

⁸⁴ ACCC, *Assessment of Telstra’s Unconditioned Local Loop Service Band 2 monthly charge undertaking: Final Decision — Public Version*, 2009.

⁸⁵ ACCC, *Draft Pricing Principles and Indicative Prices for fixed line services*, 2009.

‘Prudency checks’ are applied to operations and maintenance expenditure in other sectors regulated by the ACCC on an ex-post basis — that is, in assessing whether expenditure actually undertaken during a regulatory period was reasonably efficient — and an ex-ante basis — that is, in assessing whether expenditure that is forecast to be undertaken during a regulatory period is expected to be efficient. Forecast expenditures are typically assessed against performance indicators such as historical performance and/or a forward looking assessment of cost drivers.⁸⁶ Benchmarking is often undertaken by an external consultant.⁸⁷

Prudency checks are also applied to capital expenditure — as an example, regulated access providers in some energy industries are required to apply a ‘regulatory test’ to assess the efficiency of capital expenditure for new, large network assets. The most recent version of this test states that an investment option satisfies the regulatory test if:

- (when the investment is necessitated principally to meet service standards) the proposed option minimises the present value of the costs of meeting those requirements, compared with alternative option/s, in a majority of reasonable scenarios
- (in all other cases) the option maximises the expected net economic benefit to all those who produce, consume and transport electricity compared to the likely alternative option/s, in a majority of reasonable scenarios. Net economic benefit equals the present value of the market benefit less the present value of costs.⁸⁸

4.2.1.2 Frequency of regulatory resets

The length of the regulatory period — that is, the length of time that passes between the regulatory settings being reviewed — has implications for the firm’s incentives to behave efficiently. The longer the regulatory period — and by implication the longer the period over which actual costs and prices are de-linked — in principle, the greater are the incentives to minimise costs (and therefore improve productive efficiency). However, on the other hand, the greater is the potential that costs will not be recovered (which could be to the detriment of dynamic efficiency).

In determining an appropriate length for the regulatory period, it is likely to be important to consider the cost and demand conditions in the telecommunications sector. The more stable that cost and demand conditions are thought to be, the lower the likelihood that forecasts of costs and demand will be significantly different from the actual costs and demand that eventuate (and vice-versa). Whilst this may create somewhat weaker incentives for the regulated firm to behave efficiently, it may also decrease the risk that it will be unable to recover its costs (and vice versa). In this case,

⁸⁶ ACCC, *Review of the Draft Statement of Principles for the Regulation of Electricity Transmission Revenues — Discussion Paper*, 2003.

⁸⁷ For example, see ACCC, *Final Decision Australian Rail Track Corporation Access Undertaking – Interstate Rail Network*, 2008.

⁸⁸ AER, *Final Decision — Regulatory Test version 3 and application guidelines*, November 2007.

a longer regulatory period might be appropriate, relative to an environment in which cost and demand conditions are highly uncertain.

Another consideration is whether there should be particular events that should trigger a review of regulated prices in the middle of a regulatory period. For example, if unforeseen capital expenditure is required that was not anticipated at the start of the regulatory period, not re-assessing regulated prices or revenues may mean that the access provider is unable to recover the costs of this investment.

4.2.1.3 Balancing incentives

The looser the link between actual costs and regulated prices, the greater are likely to be the incentives to reduce costs (or to shift them to the pricing of unregulated services) and/or improve productivity. At the same time, increasing the incentive to reduce costs or improve productivity may create incentives to reduce service quality (discussed below), and also to game the regulator, particularly when the regulator is at an information disadvantage. For example:

- with high powered incentive mechanisms firms have a high incentive to set a low performance target. For example, the greater the incentive to reduce expenditure, the greater the incentive to set a high expenditure target; but to then under-spend over the regulatory period. A regulated firm may be able to influence the regulator to set a high expenditure target by arguing that in the future the firm will need to incur higher costs to meet an increase in demand, or increase service quality (and then not actually undertake the investment to meet that demand or improvement in service quality).⁸⁹
- the regulator usually will take into account past performance when setting future performance targets. Knowing that its current level of effort is likely to affect future performance targets, the regulated firm will take this into account when choosing its level of effort. In particular, if high performance today leads to a high performance target tomorrow, the firm will be reluctant to achieve high performance today. Having said this, an incentive regime can be designed such that ‘outperformance’ today leads to a lower performance target in the future, which enhances the incentive to outperform today.⁹⁰

The choice of regime to incentivise efficient behaviour therefore involves a balancing of incentives overall (i.e. not just those to reduce costs), and a balancing of the information requirements of the regulator and the associated risk of micro-management. In the presence of information asymmetry, it may be preferable for the regulator to leave discretion to the firm over its expenditure decisions, while providing a system of broad financial incentives to induce the firm to use that discretion to pursue desirable outcomes.⁹¹

⁸⁹ ACCC, *Statement of principles for the regulation of electricity transmission revenues*, 2004.

⁹⁰ Ibid. p. 17.

⁹¹ Ibid. p. 14.

The ACCC seeks the views of interested parties regarding:

15. whether mechanisms are required in order to encourage access providers to incur costs efficiently?
16. in the context of a pricing approach which locks-in and rolls-forward the RAB, the mechanisms that should be adopted to create incentives to incur efficient capital expenditure?
17. in the context of a pricing approach which locks-in and rolls-forward the RAB, the mechanisms that should be adopted to create incentives to incur efficient operational expenditure?
18. whether if the RAB is locked in or re-valued impacts upon which efficiency mechanisms will encourage efficiencies in capital and operations expenditure?
19. what the appropriate length of time between reviewing regulated prices (i.e. an appropriate length for the regulatory period) is, and why?
20. whether there should be the opportunity for regulated prices to be reviewed in the middle of a regulatory period, in response to particular events? If so, what events should be considered?

Interested parties should consider the impact on the legislative criteria outlined in section 3 of this Discussion Paper in their responses to these questions.

4.2.2 Incentives to maintain service quality

As noted, under regulation that creates strong incentives to reduce costs there is a risk that the regulated business may try to reduce costs and hence increase profits through reducing the quality of services offered to users. Mechanisms are thus sometimes implemented to balance the incentive for access providers to reduce their expenditure with the need to maintain and improve their service performance for customers. Of note, where the regulator would like a firm to pursue service standards and cost efficiencies, the power of the incentives to pursue these different objectives should be balanced wherever possible — if the incentive to maintain service standards is weak, introducing high powered expenditure incentives increases the risk that the firm will cut service standards in order to reduce expenditure.⁹² Hence, the power of the incentives to pursue these different objectives should be balanced.

Incentives to maintain service quality can be created through the provision of non-financial incentives such as monitoring and publicly reporting against specified service standards. It can also be achieved through financial incentives such as rewards and penalties based on the service outcomes delivered. In the energy sector, a ‘Service Target Performance Incentive Scheme’ has been adopted for some sectors to provide a financial incentive for access providers to maintain and improve service performance by assigning rewards or penalties to the access provider where performance is better or worse than a target performance level.

⁹² AER, *Electricity Distribution Network Service Providers — Efficiency Benefit Sharing Scheme*, 2008.

Of note, the ACCC must make model non-price terms and conditions of access to core fixed line access services (PSTN OTA, LCS and ULLS) under section 152AQB of the TPA, which provide (non-binding) guidance on what it considers fair and reasonable non-price terms and conditions of access, in order to assist parties in negotiating access. (Parties nonetheless remain able to agree on other terms and conditions of access.) The current model non-price terms and conditions cover service quality aspects including: billing and notifications; creditworthiness and security; liability (risk allocation) provisions; general dispute resolution procedures; confidentiality provisions; communications with end-users; network modernisation and upgrade provisions; suspension and termination; amendment of operational manuals; ULLS ordering and provisioning processes; and facilities access. The current model terms are expressed to remain in force for five years from 1 November 2008, unless earlier revoked.⁹³

A number of industry codes have also been developed on matters relevant to non-price terms and conditions (through Communications Alliance Limited, formerly known as the Australian Communications Industry Forum), some of which have been registered with the Australian Communications and Media Authority (ACMA) and as a result are enforceable.

In addition, other regulation informs the particular arrangements that service providers should have in place between themselves, such as the Telecommunications Customer Service Guarantee Standard, which aims to ensure that faults are repaired within reasonable timeframes.⁹⁴ Further, the Network Reliability Framework (NRF) is a compliance and reporting framework that aims to improve the reliability of Telstra telephone services. Under the framework, Telstra is required to take action before a customer's fault levels exceed specified thresholds as well as to give consumers access to information about service reliability in geographical areas of Australia. The ACMA monitors and enforces compliance with the NRF, and penalties of up to \$10 million can be imposed if the NRF's obligations are not met.

The ACCC seeks the views of interested parties regarding:

21. whether the current model non-price terms and conditions and relevant industry codes would provide a sufficient balance for the strength of the incentives created by the mechanism to minimise costs recommended by the interested party in their response to questions 16 and 17?
22. if additional schemes to maintain services standards are recommended, whether a financial incentive scheme or a non-financial incentive scheme should be adopted? What should the schemes look like?

Interested parties should consider the impact on the legislative criteria outlined in section 3 of this Discussion Paper in their responses to these questions.

⁹³ ACCC, *Final Determination — Model Non-price Terms and Conditions*, 2008.

⁹⁴ *Ibid.*

4.3 Ensuring that regulated prices are set efficiently

After the costs to be recovered by the access provider over the regulatory period have been determined, the ‘pricing methodology’ — such as a revenue cap, prices for individual services (e.g. TSLRIC+), or an average price cap — is applied to these costs to determine the ‘reference offer’. This in turn determines whether the allocation of costs to different services is undertaken by the regulator or the access provider and in turn who sets the structure of each service’s price relative to one another. The regulator could set the prices of all (relevant) individual services, thereby setting the pricing structure (and levels), or it could set only some type of average of prices (thereby effectively setting the price levels) but permit the access provider to set the individual prices around the regulated average price (thereby permitting it to set the pricing structure).

The degree of flexibility afforded to the access provider to set its own prices in turn will affect competition in different end-user markets, and the access provider’s incentives to behave efficiently, particularly in terms of responding to changes in demand. The choice of methodology therefore has implications for the legislative criteria. This section of the Discussion Paper invites interested parties to comment on these issues.

4.3.1 Allocating costs to different telecommunications services

As outlined in section 4.1.2.1, some of the infrastructure used in the production of telecommunications services is common to the production of multiple services, while other elements of the infrastructure is attributable to particular services. For example, the costs of CAN infrastructure are attributable to the WLR and ULLS services, but not the PSTN OTA, LCS and LSS; whilst no core network costs are attributable to the ULLS, but some are common to the WLR, LCS, PSTN OTA and LSS.

If the allocation of these costs — both common and attributable — to different services was undertaken by the ACCC, as occurs currently in telecommunications regulation in Australia under the TSLRIC+ approach, and in overseas jurisdictions,⁹⁵ the ACCC would effectively set the price for each declared fixed line service.

In terms of the common costs of telecommunications service provision, the ACCC could establish rules by which common costs are to be allocated across services.⁹⁶ For example, the Regulatory Accounting Framework requires that reporting carriers or carriage service providers submit to the ACCC high level cost allocation rules in their Regulatory Accounting Procedures Manual (RAPM) — these rules are well established, well understood and non-contentious.⁹⁷

⁹⁵ Ofcom, *Review of BT Network Charge Controls - consultation*, 2009.

⁹⁶ There is a range of possible methods that could be used to allocate common costs, but as, by definition, common costs are not directly attributable to the production of any one service, the allocation of common costs is effectively arbitrary.

⁹⁷ Under section 151BU of the TPA, the ACCC has the power to establish record-keeping rules by written instrument, and require that carriers and carriage service providers comply with these rules.

Alternatively, the cost allocation used in the Analysys cost model could be adopted — for example, this model allocates CAN network (capital) costs between the services that use the CAN (the WLR, ULLS, and Telstra’s retail services) based on the total number of lines that use each CAN asset (to obtain a ‘per line’ cost for each asset), ‘service routing factors’ (which determine which CAN assets each service uses) and service volumes (i.e. the amount of lines over which the service is provided).⁹⁸ For non-capital related common costs (such as business overheads), the ACCC has generally accepted an equi-proportionate mark-up (EPMU) approach to allocating these common costs.

On the other hand, the access provider could be given freedom to allocate costs to different services. This may work by the ACCC regulating a maximum allowable revenue or an average price cap, rather than the prices of individual services (outlined below). The access provider would therefore have a relatively high degree of freedom to set the prices of individual services (subject to not exceeding the average price or revenue cap).

However, if the ACCC were not to allocate costs that are attributable to the provision of particular services to those services and the access provider undertook the allocation instead, it is possible that services that do not drive those particular costs would contribute to recovery of those costs. This may have implications for the efficient use of, and competition in the market for, different services. Further advantages and disadvantages of offering the access provider pricing flexibility are outlined below.

In other industries regulated by the ACCC and AER, in general, the regulated firm proposes a cost allocation methodology as part of its access offer or undertaking, which is subject to assessment, and approval or amendment by the ACCC/AER. For example, in regulating the price terms on which the Australian Rail Track Corporation (ARTC) offers access to its rail network, the ARTC proposes the cost allocation method it intends to use for allocating operating and maintenance costs to its individual rail lines. The methodology is then assessed as being reasonable (or not so) by the ACCC. Similarly, rule 93 of the National Gas Rules states that:

Costs are to be allocated between reference and other services as follows:

- (a) costs directly attributable to reference services are to be allocated to those services; and

The RAF was introduced under this legislation by the ACCC in 2001. It is a vertical and horizontal accounting separation model that requires revenue and cost information for wholesale and retail services to be reported to the ACCC. The ACCC amended the RAF in 2003, as directed by the Government (on 19 June 2003 the Government released the Australian Competition and Consumer Commission (Accounting Separation – Telstra Corporation Limited) Direction (No.1) 2003), to require that: Telstra prepare current cost accounts, as well as existing historical cost accounts, to provide more transparency to the ACCC about Telstra’s costs; and Telstra publish current cost and historical cost key financial statements in respect of ‘core’ interconnect services.

⁹⁸ ACCC, *Analysys Cost Model for Australian Fixed Network Services — Discussion Paper*, p 14. For a detailed outline of the approach adopted for the allocation of core network costs to the fixed line services, see *Analysys, Fixed LRIC Cost Model Documentation — Model Documentation for the ACCC*, 2008, pp. 72-98.

(b) costs directly attributable to pipeline services that are not reference services are to be allocated to those services; and

(c) other costs are to be allocated between reference and other services on a basis (which must be consistent with the revenue and pricing principles) determined or approved by the AER.⁹⁹

Gas transmission and distribution network service providers must include information on their proposed cost allocation methodology in their access arrangement information, and the AER must approve the methodology if it meets the relevant rule requirements.¹⁰⁰

Some of the advantages and disadvantages of allowing the access provider to choose how it allocates costs across different services, and therefore giving it a high degree of pricing flexibility, are now outlined.

4.3.2 Advantages and disadvantages of pricing flexibility

Allowing the access provider to set the structure of prices has advantages:

- Pricing flexibility could allow the access provider to ‘discover’ demand through responding to market signals, which can result in pricing structures that align with consumer preferences and demand conditions (e.g. Ramsey-orientated pricing structures). Incentives may be created for it to increase capacity or make services available to more users, such that consumption decisions are distorted less than under other forms of pricing.¹⁰¹ The regulator is unlikely to have access to the relevant information to enable it to set Ramsay oriented prices.

And disadvantages:

- A key determinant of whether pricing flexibility is likely to be desirable in practice is the degree to which the access provider is vertically integrated. Competition issues could arise depending on the degree of the access provider’s vertical integration — allowing it the flexibility to set access prices may allow it to prevent or delay entry by new entrants into certain markets. For example, a vertically integrated access provider might allocate a large proportion of costs to the lowest layer service (e.g. the ULLS) to discourage access seekers from purchasing this service. In this context, side controls (e.g. on the quality of service, on the speed of price rebalancing) would likely be needed, and the choice of services for which price flexibility is allowed becomes a key consideration.

⁹⁹ National Gas Rules, Rule 93.

¹⁰⁰ AER, *Final Access Arrangement Guideline*, 2009.

¹⁰¹ In particular, it gives rise to the incentive to increase prices on inelastic services while lowering prices on the most elastic services towards marginal cost. See I Vogelsang and J Finsinger (1979), ‘A regulatory adjustment process for optimal pricing by multi-product monopoly firms’, *Bell Journal of Economics*, 10, 151-171; M Armstrong and J Vickers (1991), ‘Welfare effects of price discrimination by a regulated monopolist’, *RAND Journal of Economics*, 22, pp. 571-580.

- The movement to efficient price structures will depend on the willingness of the access provider to actually set prices in a way that reflects market conditions. The extent to which access prices are passed through to final retail prices by access seekers is important in this regard — if retail prices are largely insulated from movements in access prices (at least over some range), there may be less incentive for the access provider to set access prices efficiently.
- If demand conditions are uncertain, allowing the access provider to respond to changes in demand by adjusting the prices of individual services may lead to frequent and possibly large changes in the prices of individual services over time. There is therefore likely to be less certainty for access seekers over the access prices of individual services relative to if the regulator were to set these prices for the regulatory period. (Having said this, as noted, constraints could be placed on the speed of rebalancing individual services' prices.)

There are several different methodologies that could be used to afford varying degrees of pricing flexibility to the access provider. The general approaches adopted internationally and in other regulated industries are as follows.

4.3.3 TSLRIC+

If the allocation of costs to different services was undertaken by the ACCC, the ACCC would effectively set the price for each fixed line service — the access provider would therefore have very limited flexibility in setting the prices it charges for individual services, which may be appropriate in the context of a vertically integrated access provider. This is the approach adopted currently by the ACCC for the TSLRIC+ pricing methodology.

As noted, the application of TSLRIC+ to date has involved continual re-valuation of the RAB at its optimised replacement cost from one 'regulatory period' to the next. However, and as noted in the 1997 Pricing Principles Guide, TSLRIC+ could be applied using historic costs — that is, for example, without continually re-valuing the RAB, but rather locking in its value and rolling it forward. The allocation of costs (capital costs and operations and maintenance expenditures) to the different fixed line services could nonetheless then be undertaken in the same manner in which it is currently.

4.3.4 Maximum allowable revenue caps

If a revenue cap were to be adopted, a target revenue requirement would be set, based on the costs forecast to be recovered over the regulatory period. The access provider would be offered a degree of pricing flexibility, as it could set the price for each individual service, subject to the constraint that the total revenues earned over the period fell within the total maximum allowable revenue cap.

Revenue cap regulation is said to be more appropriate than price cap regulation when costs do not vary appreciably with units of sales.¹⁰² However, the revenue cap approach

¹⁰² Jamison, M., *Regulation: Price Cap and Revenue Cap*, Public Utility Research Centre, 2007.

gives rise to incentives on the regulated firm to reduce the volume of services offered (depending on the sensitivity of costs to the volume of services offered) — that is, it has an incentive to inefficiently structure prices in such a way as to reduce the volume of services offered.

4.3.5 Average price cap regulation

For a multi-product firm, price cap regulation can be implemented by way of an average tariff basket ('average price cap regulation'). With average price cap regulation, the regulator controls only an average 'basket' price, rather than the prices of individual services. The access provider is free to control the pattern of relative prices within the basket of regulated services, and is therefore offered a substantial degree of price flexibility. Generally, services that the regulator wants to protect from price increases or decreases relative to certain other services are placed in separate baskets.¹⁰³

Within the average price cap, the impact of individual prices within the basket on the overall price cap can be weighted by the expected demand for each service within the basket (with forecast demand typically being based on the previous period's consumption levels). The access provider is then allowed to adjust its prices subject to the requirement that the weighted average of the regulated prices does not change by more than the regulated adjustment factor.

With weighted average price cap regulation, the overall price cap is set at a level that allows the access provider to earn the target revenue if it meets its demand forecasts. If it sells a greater volume of services than forecast and therefore achieves above its target revenue within a regulated period, it is allowed to keep any excess revenue. Conversely, should its target revenue requirement not be met it may suffer a loss. It is this exposure to demand side risk which can encourage regulated firms to price their different services in an efficient manner — the access provider has incentives to expand demand beyond that forecast by the regulator at the time the price is set.

In practice, when designing an average or weighted average price cap, careful consideration must be given to the bundle of goods and services to be covered by the cap. If the price cap provides too little flexibility to firms, then opportunities to rebalance prices for both consumer and firm gain will be limited. On the other hand, if the bundle is poorly designed, then the regulation may be subject to potential anti-competitive abuse.¹⁰⁴ This is a key concern with the application of weighted average price cap regulation in the context of a vertically integrated access provider — vertical and/or horizontal integration coupled with weak forms of functional separation mean that the access provider has both the *incentive* and *ability* to discriminate against other market participants in favour of its downstream retail operations.

¹⁰³ Ibid.

¹⁰⁴ King, S. 'Principles of Price Cap Regulation', *Infrastructure Regulation and Market Reform*, University of Melbourne.

The ACCC seeks the views of interested parties regarding:

23. the degree to which the ACCC or the access provider should allocate the costs of service provision to — and therefore set the individual prices of — different fixed line services? Consider the implications of vertical and horizontal structure in your response.
24. if the ACCC continues to allocate costs to individual services, as occurs today, what approach it should use to allocate these costs — for example, the approach adopted in the Analysys cost model, the RAF accounts etc?
25. if the access provider is to be allowed a degree of pricing flexibility, how should this be implemented — should a revenue cap be regulated? Or should a weighted average price cap be regulated?
26. if regulating weighted average price caps, which services should be included in which baskets? On what basis should the prices be weighted?
27. should the same approach be adopted for all services, or should flexibility be allowed in the pricing of some services but not others?

Interested parties should consider the impact on the legislative criteria outlined in section 3 of this Discussion Paper in their responses to these questions.

4.3.6 Averaged versus de-averaged access charges

Another consideration is whether access charges should be averaged or de-averaged across regions, and whether to adopt different RABs for different geographic regions — for example, whether to adopt separate RABs for ULLS bands one to four.

Having separate RABs for different regions could offer a more transparent means of monitoring and assessing how the unit costs of providing services across different regions vary, compared to if a single national RAB was adopted. This could in turn provide a transparent mechanism for assessing any distortions that could arise if access charges were to be averaged (as opposed to de-averaged to reflect cost differences) across regions, and the subsequent impact on the legislative criteria. The ACCC's view in the past has been that, where cost differences across regions are large, access charges that are averaged can lead to inefficient duplication of infrastructure in lower cost areas — which in turn means that averaged charges will not be sustainable, as the subsequent competition erodes the source of the cross subsidy to high cost regions. Further, averaged access charges can depress demand for services, or in regions, that provide the cross-subsidies (i.e. low cost regions), which may be to the detriment of allocative efficiency.¹⁰⁵

¹⁰⁵ The ACCC's view has been that, to fund uneconomic services in high cost regions, mechanisms that allow transparency and accountability — such as direct subsidies — are preferable to internal cross-subsidies (averaged access charges) particularly in the context of a vertically integrated access provider. In the context of a vertically integrated access provider, cross-subsidies can also create anti-competitive conduct concerns (e.g. the ability to price squeeze), because the source and use of the cross-subsidy is often not transparent, and it is difficult to make the access provider accountable

However, this is not to say that de-averaged charges necessitate adopting separate RABs, nor that averaged charges necessitate having a single RAB, rather, simply that having separate RABs for different regions could allow the cost differentials to be more transparently assessed.

On the other hand, for some services, an access price that is uniform across regions would be unlikely to lead to large cross-subsidies and distortions, because the costs of providing the service do not differ a great deal across regions. For example, the ACCC has accepted uniform access prices for the specific costs of the LSS because the relevant cost pool is not geographically specific (that is, it is a centralised computer system). Similarly, the ACCC has also previously specified geographically uniform connection and disconnection charges — although these costs do vary across different regions, the cost variations are not large. If different RABs were adopted for different regions, how to ensure uniform prices for services for which uniform prices are appropriate would need to be considered.

The ACCC seeks the views of interested parties regarding:

28. whether access prices should be averaged or de-averaged across regions? For which services?
29. whether there should be separate RABs for different regions or a single national RAB?
30. if separate RABs for different regions are recommended, on what basis should these separate RABs be defined — e.g. the four band structure used for the ULLS? The Analysys model's Zones A and B? Some other basis?
31. could uniform prices for services for which a uniform price is appropriate be accommodated if regional RABs are adopted?

Interested parties should consider the impact on the legislative criteria outlined in section 3 of this Discussion Paper in their responses to these questions.

5 Transitioning — price shocks

Several submissions to the ACCC's Draft Pricing Principles and Indicative Prices for Fixed Line Services raised the potential for price shocks in the event of changes to the existing pricing approach. For example, the CCC stated that:

The expectation that the Commission will move away from TSLRIC to a regulated asset base methodology with a depreciation component only creates further uncertainty. Access seekers

for sourcing the cross-subsidy from and using the cross-subsidy for the services and/or regions which it is intended to be used for. ACCC, *Submission to the Department of Broadband, Communications and the Digital Economy "National Broadband Network: Regulatory Reform for 21st Century Broadband"*, 2009.

have no way of knowing at this time what the RAB-derived pricing will be, yet clearly expect that they should logically result in reduced prices immediately and reducing prices over time, given the circumstances.¹⁰⁶

Telstra's submission proposed that:

Moving to new access pricing principles is likely to require an adjustment in prices...rollover for an interim period will minimise the pricing disruption in the industry by avoiding a potential two-stage adjustment — from existing prices to new indicative prices now, and then from those prices to the ACCC's preferred new pricing approach when it is implemented.¹⁰⁷

This section of the Discussion Paper outlines some of the ACCC's preliminary considerations regarding whether a change to certain elements of the current pricing approach (if these were to occur) would necessarily lead to price shocks.

It is important to note that there is no one 'correct' price at any given point in time — rather, it is the relationship between past, current and future prices, and how these change in response to decisions of the firm, that creates the incentives that assist in meeting the legislative criteria.

When changes to a pricing methodology of any nature are being considered, in order to provide certainty and allow for transition it may be desirable to maintain current access prices for a fixed period of time. There is no obvious reason why transitioning from the current application of TSLRIC+ to a pricing approach which, for example, locks in the value of existing sunk assets, would necessitate an immediate or large change in regulated prices.

This is firstly because, in the event that a change occurs and an initial RAB is set, the value of the opening RAB could be set with reference to current regulated prices (as noted in section 4.1.2.2). But even if the RAB was not set on this basis, price shocks can be avoided.

This is because it is not just the price at a single point in time that defines whether or not the access provider's costs will be recovered, and therefore creates the incentives that assist in meeting the legislative criteria. What is important is that past, current and future prices allow the access provider to recover its costs. When the level of the opening RAB is established, there will be a range of different price points that could be consistent with that particular RAB value. Put another way, the prevailing prices at the point in time at which the opening RAB is established could be consistent with a range of different RAB values. As such, locking in a particular value of the opening RAB need not necessitate an immediate change in prices. This is highlighted in table 3 below, which shows two scenarios with different values for the opening RAB, but the same initial access price.

¹⁰⁶ CCC, *Submission to the Draft Indicative Fixed Line Price*, October 2009, p. 5.

¹⁰⁷ Telstra, *Response to the ACCC's draft pricing principles and indicative prices for LCS, WLR, PSTN OTA, ULLS, LSS*, October 2009, p. 4.

Table 3 Relationship between prices, depreciation and the RAB

Year	RAB 1			RAB 2		
	value	depcn	access price	value	depcn	access price
	(\$)			(\$)		
1 – opening RAB	1000	100	10	1200	100	10
2	900	100	10	1100	103.99	10.40
3	800	100	10	996.01	108.14	10.81
4	700	100	10	887.87	112.45	11.25
5	600	100	10	775.42	116.94	11.69
6	500	100	10	658.49	121.60	12.16
7	400	100	10	536.89	126.45	12.65
8	300	100	10	410.43	131.50	13.15
9	200	100	10	278.94	136.74	13.67
10	100	100	10	142.20	142.20	14.22
11	0			0		

Note: depcn = annual depreciation charge — i.e. the amount of the RAB’s value recovered in that year.

In table 3, it is assumed that there are 10 lines from which to recover costs, that the asset has ten years of life remaining, and that there are no additions to the RAB (i.e. no new capital expenditure) over time. (The scenarios do not include the cost of capital or operational expenditure as a cost to be included in access charges, for simplicity.) The table shows that opening RAB 1 and RAB 2 are different in value, but associated with the same prices (\$10) at the time the RAB is established. However, the rate at which prices change over time differs in order to ensure that the whole value of the RAB is recovered over the remaining life of the asset. So, whilst establishing the opening RAB does not determine that a particular set of prices is required (and vice versa), once both the opening RAB and the initial set of prices are established, this will affect the price path required to ensure cost recovery. The annual depreciation charge — determined by the depreciation schedule — is used to adjust this price path.

In summary, there are two reasons why prices need not necessarily change from the level at which they prevail when the opening RAB is established:

- the opening RAB could be set with reference to current regulated prices; or
- if this approach to valuing the opening RAB is not taken and the value of the opening RAB differs from that implied by current regulated prices, the price path can be adjusted by adjusting the depreciation schedule.

Ultimately, the time period for which current regulated prices are able to be sustained will depend on the degree of change in the opening RAB from that implied by current prices. If there is a significant change in the RAB from that implied by current regulated prices, it may be difficult to sustain current prices for more than a short period of time.

The ACCC seeks the views of interested parties regarding:

32. whether, if there are changes to elements of the current approach to access pricing, access prices should be maintained at their current levels for a period of time, or alternatively, whether the current trend in access prices should be

maintained for a period of time?

33. if it is desirable to maintain current prices, or the trend in current access prices for a period of time, what period of time would be appropriate?

Interested parties should consider the impact on the legislative criteria outlined in section 3 of this Discussion Paper in their responses to these questions.

Appendix — List of questions

The ACCC seeks interested parties views regarding:

1. whether locking in a value for the RAB, rather than the current approach of continually re-valuing the RAB, would create more certainty for access providers and access seekers, and in turn assist them in making efficient decisions regarding their future investment patterns and general business plans? Why/why not?
2. whether the value of the RAB should be locked in or whether it should continue to be re-valued?
3. whether there are any services for which a pricing approach that locks-in and rolls forward the RAB would not be appropriate? If so, what approach should be taken to pricing these services?
4. whether a single RAB should be adopted for pricing the ULLS, WLR, PSTN OTA, LSS and LCS services? Why/why not? Which assets should be included in the RAB? Consider the layered nature of telecommunications service provision in your response.
5. whether there should be different RABs for different fixed line services? Why/why not? If so, which assets should and should not be included in the different RABs for each service? Consider the layered nature of telecommunications service provision in your response.
6. how should past compensation to the access provider (i.e. past depreciation) be taken into account in setting an opening RAB?
7. which approach to valuing sunk assets should be used in setting an opening RAB?
8. whether the same approach should be applied to all asset categories, or whether different approaches should be applied to different asset categories (e.g. ducts and pipes versus electronics)?
9. if a DORC valuation were to be adopted, which approach to constructing DORC should be used?
10. the path of access prices over time that should be adopted — interested parties should consider whether cost-recovery should be front loaded (suggesting that the path of access prices over time will fall), back loaded (suggesting the path of access prices over time will rise) or in equal amounts in each regulatory period.
11. which approach to depreciation should subsequently be adopted?

12. whether rate shocks are likely to be a concern in the telecommunications context? If so, what approach should be taken to reducing the size of the rate shock?
13. whether the approach to depreciation should be the same for all classes of assets in the RAB? Why/why not?
14. what is the appropriate period over which to recover these costs — i.e. appropriate asset lives?
15. whether mechanisms are required in order to encourage access providers to incur costs efficiently?
16. in the context of a pricing approach which locks-in and rolls-forward the RAB, the mechanisms that should be adopted to create incentives to incur efficient capital expenditure?
17. in the context of a pricing approach which locks-in and rolls-forward the RAB, the mechanisms that should be adopted to create incentives to incur efficient operational expenditure?
18. whether if the RAB is locked in or re-valued impacts upon which efficiency mechanisms will encourage efficiencies in capital and operations expenditure?
19. what the appropriate length of time between reviewing regulated prices (i.e. an appropriate length for the regulatory period) is, and why?
20. whether there should be the opportunity for regulated prices to be reviewed in the middle of a regulatory period, in response to particular events? If so, what events should be considered?
21. whether the current model non-price terms and conditions and relevant industry codes would provide a sufficient balance for the strength of the incentives created by the mechanism to minimise costs recommended by the interested party in their response to questions 16 and 17?
22. if additional schemes to maintain services standards are recommended, whether a financial incentive scheme or a non-financial incentive scheme should be adopted? What should the schemes look like?
23. the degree to which the ACCC or the access provider should allocate the costs of service provision to — and therefore set the individual prices of — different fixed line services? Consider the implications of vertical and horizontal structure in your response.
24. if the ACCC continues to allocate costs to individual services, as occurs today, what approach it should use to allocate these costs — for example, the approach adopted in the Analysys cost model, the RAF accounts, etc?

25. if the access provider is to be allowed a degree of pricing flexibility, how should this be implemented — should a revenue cap be regulated? Or should a weighted average price cap be regulated?
26. if regulating weighted average price caps, which services should be included in which baskets? On what basis should the prices be weighted?
27. should the same approach be adopted for all services, or should flexibility be allowed in the pricing of some services but not others?
28. whether access prices should be averaged or de-averaged across regions? For which services?
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31. could uniform prices for services for which a uniform price is appropriate be accommodated if regional RABs are adopted?
32. whether, if there are changes to elements of the current approach to access pricing, access prices should be maintained at their current levels for a period of time, or alternatively, whether the current trend in access prices should be maintained for a period of time?
33. if it is desirable to maintain current prices, or the trend in current access prices for a period of time, what period of time would be appropriate?

Interested parties should consider the impact on the legislative criteria outlined in section 3 of this Discussion Paper in their responses to these questions.