

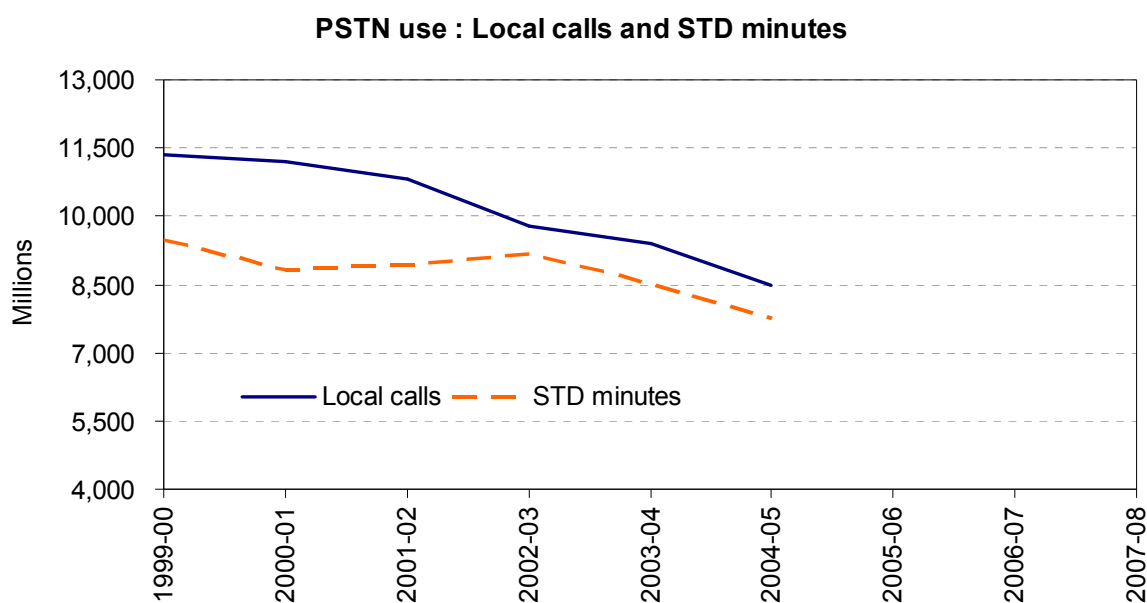
TELSTRA'S SUBMISSION IN SUPPORT OF ITS UNDERTAKINGS DATED 22 March 2006

A INTRODUCTION

- 1 On 22 March 2006, Telstra gave to the Australian Competition and Consumer Commission (“**Commission**”) an Undertaking pursuant to section 152BS of the *Trade Practices Act 1974* (“**TPA**”) in respect of domestic Public Switched Telephone Network (“**PSTN**”) originating and terminating access (“**PSTN OTA**”) and the local carriage service (“**LCS**”) (“**the Undertaking**”). The Undertaking relates to the 2006/07 and 2007/08 financial years.
- 2 PSTN originating access (“**PSTN OA**”) involves the carriage of calls from an end user connected to Telstra’s PSTN to a point of interconnection between Telstra’s PSTN and the network of an access seeker (“**POI**”). PSTN terminating access (“**PSTN TA**”) involves the carriage of calls from a POI to an end user connected to Telstra’s PSTN. PSTN OTA is a service used by access seekers to supply local, domestic long distance, international long distance, fixed to mobile and mobile to fixed calls to end users (“**Retail PSTN Services**”). As PSTN OTA is an input into Retail PSTN Services, its costs are generally recouped from prices charged for Retail PSTN Services to the end users.
- 3 LCS involves the sale of local calls to access seekers. It involves the carriage of calls from an end user to a separately located end user in the same local calling area, both end-users being directly connected to Telstra’s PSTN. LCS is used by access seekers to supply local calls to end users.
- 4 Telstra’s proposed Undertaking prices involve a substantial reduction in LCS prices and an increase in PSTN OTA prices. The proposed LCS price is 9.28 cents per call for both 2006/07 and 2007/08, which is a 32% reduction compared with the 2005/06 price. The proposed PSTN OTA prices have been increased, both to ensure full recovery of efficient costs and as a result of declining traffic volumes on the PSTN. In Telstra’s view, these prices are consistent with the legislative criteria and, in particular, the promotion of efficient competition. The prices allow full recovery of efficiently incurred costs (and no more) and ensure that the level of costs allocated to the PSTN volumes of access seekers is identical to that allocated to Telstra’s retail PSTN volumes. Therefore, competition will occur on the merits rather than by subsidising the operations of either access seekers or Telstra.

- 5 In addition, Telstra notes that the Undertaking prices provide substantial margin for access seekers providing the full bundle of PSTN services. While the Undertaking involves a substantial increase in the prices for PSTN OTA, Telstra notes that these charges comprise less than 7.5% of the total access charges for the full bundle of PSTN services. Therefore, the undertaking rates reduce the margin in 2006/07 compared to what was previously available by just [c-i-c] of a percentage point for residential customers and improve the margin available to business customers. The margin decline for residential customers is more than offset by the reduction in mobile terminating rates that will occur as a result implementing the Commission's glidepath prices. Further, the margin available to access seekers providing the full bundle of PSTN services increases between 2006/07 and 2007/08, as the small increase in Undertaking prices is again offset by declining mobile termination rates.
- 6 Telstra believes that the proposed increase in PSTN OTA prices, which has a minimal impact on the margin available to access seekers providing fixed PSTN services, is necessary to address the declining traffic volumes on the PSTN. As Telstra has noted in public statements, usage levels on the PSTN are declining and this trend is forecast to continue over the Undertaking period¹. The downward trend in Telstra's PSTN volumes has been driven mainly by declines in local and national long distance volumes (see chart below).

¹ See for example, Telstra's media release 021/2006 dated 9/2/2006 on Telstra's 2005/06 half year results in which Mr Trujillo said the PSTN decline had accelerated slightly faster than expected, with PSTN products revenue falling by 7.6 per cent or \$313 million for the first half of the year compared with a decline of 3.4 per cent for fiscal 2005. Further migration to mobiles and the internet saw volume reductions across most call types and reduced yields. Similarly, in Telstra's media release 246/2005 on 2004/05 full year results Mr Stanhope said that the second half saw an accelerating decline in PSTN voice revenues and significant product substitution emerging.



Source: Telstra Annual Reports

- 7 An implication of this decline is the increasing unit costs associated with carrying PSTN traffic. This outcome arises because the costs (even hypothetical efficient costs) associated with the PSTN are largely fixed with respect to volumes, a fact acknowledged by the Commission². As PSTN volumes decline, the costs associated with the PSTN must be spread over a smaller base of traffic, resulting in higher unit costs. The PSTN OTA prices proposed in the Undertaking reflect this.
- 8 Telstra has also sought to structure the PSTN OTA prices in a more efficient manner. Specifically, where practical, Telstra has structured the PSTN OTA price as a two-part tariff so that a share of costs would be recovered on a per customer basis, with a corresponding reduction in the level of costs being recovered on a per minute basis. This structure of prices is more efficient than that which has been levied historically. This is because it reduces the variable charges associated with using the PSTN to a level that more closely reflects the variable cost of usage and hence encourages more efficient use of the PSTN.

² See for example, ACCC 2000, *A Report on the Assessment of Telstra's Undertaking for the Domestic PSTN Originating and Terminating Access Service*, Section A1.2.1, p47.

9 For LCS, Telstra has sought to implement the Commission’s preferred Retail Minus Retail Cost (“**RMRC**”) pricing principle,³ which the ACCC has indicated that it believes is the most appropriate pricing principle for LCS going forward⁴. While Telstra adopts the Commission’s RMRC pricing principle for LCS, it notes that the LCS prices proposed in the Undertaking are dependent on allowing full cost recovery on a competitively neutral basis across both PSTN OTA and LCS (including Telstra’s own self-supply of these services).

10 This point is extremely important, as Telstra is proposing the PSTN OTA and LCS prices in the Undertaking as a package. This package allows full cost recovery on a competitively neutral basis across both access seeker traffic and Telstra’s own retail traffic and across all PSTN services. Therefore, it is not possible to assess the proposed price for LCS in isolation from the proposed prices for PSTN OTA, as the two are completely dependent on each other. For example, if it were determined that the LCS rate should be lower than proposed by Telstra, then the PSTN OTA rates would need to increase to ensure full cost recovery on a competitively neutral basis across all services.

11 The headline prices proposed by Telstra in the Undertaking are as follows:

	2006/07	2007/08
LCS	\$0.0928 per call	\$0.0928 per call
PSTN TA and PSTN non-preselect OA	\$0.0218 per minute	\$0.0228 per minute
PSTN preselect OA		
Per minute charge	\$0.0119 per minute	\$0.0124 per minute
Per customer charge per month ¹	\$1.44 per customer	\$1.48 per customer

¹ The per customer charge is levied on the access seeker’s volume of preselect lines.

12 It is proposed that the LCS price is charged on a national average basis at 9.28c per call in both 2006/07 and 2007/08. It is proposed that PSTN OTA prices are deaveraged by geographic area as follows:

³ ACCC, 2002, *Local Carriage Service Pricing Principles and Indicative Prices*, April.

⁴ See ACCC, 2006, *Local Services Review, Draft Decision on whether or not the ACCC should extend, vary or revoke its existing declaration of the local carriage service, March*. Telstra has implemented the RMRC approach by deducting basic access retail costs from the local call price, which Telstra believes is the preferred industry approach.

PSTN TA and PSTN non-preselect OA

	2006/07		2007/08	
	flagfall	per minute	flagfall	per minute
CBD	\$0.0107	\$0.0136	\$0.0108	\$0.0141
Metro	\$0.0112	\$0.0139	\$0.0115	\$0.0145
Provincial	\$0.0134	\$0.0144	\$0.0137	\$0.0151
Rural	\$0.0378	\$0.0387	\$0.0386	\$0.0402

PSTN preselect OA

	2006/07		2007/08	
	flagfall	per minute	flagfall	per minute
	\$1.44 per customer plus		\$1.48 per customer plus	
CBD	\$0.0035	\$0.0051	\$0.0034	\$0.0052
Metro	\$0.0042	\$0.0055	\$0.0043	\$0.0058
Provincial	\$0.0068	\$0.0065	\$0.0069	\$0.0068
Rural	\$0.0343	\$0.0340	\$0.0349	\$0.0352

- 13 Telstra submits that the prices are reasonable by reference to the statutory criteria set out in s152AH of the TPA and that the Undertaking ought to be accepted by the Commission.
- 14 Telstra has given the Undertakings with the primary objective of providing both the industry and itself with increased regulatory certainty over future prices for the PSTN OTA and LCS. Securing a reasonable degree of certainty is important to the future planning of Telstra's telecommunications network and for the business planning purposes of wholesale customers that seek access to Telstra's network. This in turn allows better provision of service to end-users, which is plainly consistent with end-users' long term interests.
- 15 This submission is structured as follows:
- Section B lists the relevant documents on which Telstra relies in this submission.
 - Section C details confidentiality issues.
 - Section D sets out three broad principles that Telstra believes can be used to assess whether the Undertaking prices are consistent with the reasonableness criteria in the

legislation. These principles are full cost recovery and no more, efficient use of the network and competitive neutrality. In this section, Telstra describes each of the principles and how they relate to the legislative criteria.

- Section E assesses Telstra's Undertaking prices against the first principle of full cost recovery and no more. Telstra sets out in detail how it has estimated the efficient cost of the network and compares this estimate to other available cost measures to demonstrate the reasonableness of the level of costs that Telstra is seeking to recover in the Undertaking prices.
- Section F assesses Telstra's Undertaking prices against the second principle of efficient use of the network. This section describes in detail how the structure of the Undertaking prices has been derived and why this should encourage efficient use of the PSTN.
- Section G assesses Telstra's Undertaking prices against the third principle of competitive neutrality. This section demonstrates that Telstra's calculation of the Undertaking prices treats all calls, minutes and customers in an identical manner, regardless of whether they are retail or wholesale volumes. This section also presents the results of Telstra's imputation testing of the Undertaking prices.
- Section H concludes.

B RELEVANT DOCUMENTS

16 Telstra relies on, and this Submission should be read in conjunction with, the following:

- The PIE II model, which has been the subject of industry and ACCC scrutiny in connection with Telstra's Core Services Undertakings (2003);
- Annexure A: Description of PIE II Model;
- Annexure B: Report of Dr Bridger M. Mitchell, Appropriateness of Telstra's 2005 Cost Modelling Methodology; and
- Annexure C: Report of Professor Robert G. Bowman, Report on the Appropriate Weighted Average Cost of Capital for PSTN OTA and LCS.

C CONFIDENTIALITY

17 This submission has all of the confidential information deleted and thus may be disclosed publicly.

18 Telstra will provide the confidential version of this submission and the information contained in it to interested parties upon those parties signing appropriate confidentiality undertakings.

19 The confidentiality undertakings do not limit the extent to which interested parties, including the Commission, can analyse and comment on the content of this submission. Rather they are intended to prevent the distribution and use of the confidential material contained in this submission for purposes other than participating in the Commission's public inquiry relating to the Undertaking.

D REASONABLENESS CRITERIA

20 The ACCC must assess whether the terms and conditions set out in the Undertaking are reasonable (section 152BV of the TPA). In assessing the reasonableness of those terms and conditions, the Commission must have regard to (section 152AH of the TPA):

- whether the terms and conditions promote the long-term interests of end-users;
- the legitimate business interests of Telstra, as the access provider;
- the interests of persons who have rights to use the declared services;
- the direct costs of providing access;
- the safe and reliable operation of the network; and
- the efficient operation of the network.

21 In determining whether something is in the long-term interests of end-users regard must be had to the objective of promoting competition, achieving any-to-any connectivity and encouraging efficient investment in infrastructure (section 152AB of TPA).

22 Telstra believes that in determining whether the Undertaking prices are reasonable, the relevant inquiry is not whether the Undertaking prices are the most appropriate, but

whether they are reasonable. Reasonableness is a notion which implies a “*range of choice reasonably open and consistent with*” the criteria in section 152AH(1).⁵

23 Not only is this interpretation consistent with the plain reading of the section and precedent on what is “reasonable”, but it also has the important advantage of ensuring that access undertakings are not unduly rejected simply because the Commission has a view on something in respect of which reasonable minds could differ. Access undertakings are intended to promote industry certainty. As they can only be accepted or rejected by the Commission, if access undertakings are rejected because the Commission has a view on something in respect of which reasonable minds could differ, the likelihood of an undertaking being accepted decreases and, with it, the certainty it would otherwise promote.

24 Further, the statutory criteria set out in section 152 AH of the TPA are interdependent. For the purpose of assessing the Undertaking, it is useful to set-out three broad principles against which the proposed prices can be assessed, specifically:

- full cost recovery and no more;
- encouraging efficient use of the network; and
- maintaining competitive neutrality.

25 Telstra believes that pricing that meets these three broad principles will be consistent with the statutory criteria in section 152AH. This section explains these principles, their importance and their relationship to the legislative criteria in section 152AH and therefore ultimately that prices consistent with these principles should be considered reasonable.

D1 Full cost recovery and no more

26 Full cost recovery is simply ensuring that an access provider is able to recover the full efficient costs of supplying services on the network. In order to ensure that investment in the PSTN in Australia continues (whether that investment is in an alternate PSTN to Telstra’s PSTN or by way of maintenance, upgrade or extension of the existing Telstra PSTN), investors must have an expectation that the costs of building and maintaining the PSTN will be recovered from prices paid for the Retail PSTN Services and the Undertaking services.

⁵ *Re Application by GasNet Australia (Operations) Pty Ltd* [2003] ACompT 6 at ¶29.

27 Not allowing full cost recovery will make it difficult to attract investment in the PSTN thus causing a loss of both social and economic benefits from such investment and, more generally, from the operation and use of the PSTN. Those benefits include the value consumers place on Retail PSTN Services, including the value to end users of being able to contact other end users with whom they wish to communicate.

28 Therefore, full cost recovery is consistent with the legislative criteria because:

- access prices based on costs promotes efficient competition between Telstra and access seekers, and therefore promotes competition;
- Telstra's efficient investment is rewarded, which is consistent with the objective of efficient investment in and continued efficient and reliable operation of the network, as well as Telstra's legitimate business interests;
- access seekers benefit by ensuring that Telstra has incentives to efficiently maintain the network;
- other services providers will be sent appropriate signals about whether to buy or build a network to provide such services, which promotes efficient investment and efficient competition; and
- an access seeker will pay the direct costs of accessing the network services insofar as the access prices will not be inflated to reflect foregone economic rents⁶.

D2 Encourage efficient use of the network

29 The efficient use of the network refers to efficient network utilisation. A key determinant of network utilisation is the individual price of each service. The setting of individual prices should promote efficient utilisation of the network, while ensuring full cost recovery and competitive neutrality.

30 Ideally, each of PSTN OTA and LCS would cover its incremental costs, with PSTN OTA, LCS and Retail PSTN Services together covering the common costs which their provision entails. In practice, regulatory and other constraints on the prices that can be charged for particular Retail PSTN Services may prevent a particular Retail PSTN Service from covering the costs that would normally be allocated to it. Consequently, some PSTN

⁶ *Explanatory Memorandum for the Trade Practices Amendment (Telecommunications) Bill 1996.*

OTA, LCS or Retail PSTN Services may need to contribute less than they otherwise would towards the costs of providing them, while others may need to pay more. What is important is that the prices for PSTN OTA, LCS and Retail PSTN Services supplied by an investor over the PSTN cover the total costs of the PSTN which an investor incurs.

31 Second, prices ought to be determined on a consistent basis for each of PSTN OTA and LCS. To do otherwise could undermine the full recovery of efficiently incurred costs. For example, setting LCS prices on the basis of RMRC, without a corresponding adjustment to PSTN OTA prices could leave a substantial shortfall between prices and efficient cost recovery. As a result, usage of the PSTN would fail to reflect the costs associated with that usage.

32 Third, the costs allocated to each service should seek to minimise the loss from pricing above incremental costs. The OECD has noted:⁷

“If it is efficient to price one or more retail services above marginal cost in order to collect revenues it is usually efficient to use various forms of price discrimination (such as two-part pricing or Ramsey pricing) to minimise the distortion in consumption that arises from pricing above marginal costs”.

33 Prices set to encourage efficient utilisation of the network are consistent with the legislative criteria because:

- prices set to reflect efficient utilisation of the network reduces the probability that Telstra will be unable to recover investment costs, due to regulatory restrictions on particular prices or due to bypass;
- prices set to reflect efficient utilisation are consistent with access prices reflecting direct costs as access seekers make a contribution only to the efficient costs associated with the network (and nothing more), and the efficient and reliable use of the network;
- if Telstra’s ability to operate the network efficiently is restricted, its ability to compete against other networks could be reduced, which would be contrary to the promotion of competition objective;
- access seekers benefit by the network being sustained and efficiently operated; and

⁷ OECD, 2004, *Access Pricing in Telecommunications*, pp8-9.

- Telstra's legitimate business interests are promoted because access prices will be set to minimise inefficient bypass or distortions in the use of the network.

D3 Competitive neutrality

34 Long run competitive neutrality requires that:

- (a) equally efficient firms have the same opportunity to recover their total costs; and
- (b) equally efficient access seekers and access providers are neither advantaged nor disadvantaged in their respective roles in making market entry/exit and investment decisions.⁸

35 The prices in the Undertaking should be set by ensuring that the same level of costs is allocated to wholesale and retail services. To do otherwise would mean that the input costs into the Retail PSTN Services faced by the efficient access provider and an access seeker would be different, which undermines efficient investment and allows inefficient entry.

36 If the efficient access provider faces higher input costs for Retail PSTN Services than those faced by access seekers, then the access seekers could undercut the efficient access provider in end user markets, potentially take the majority of the market for Retail PSTN Services and thus prevent the efficient access provider from recouping all of the costs of its investment. This is because the efficient access provider would no longer sell the Retail PSTN Services from which higher costs were recovered but would be forced to sell LCS and PSTN OTA from which lower costs were recovered.

37 Therefore, access prices should be determined in such a way as to ensure that the hypothetical access provider would be no worse off constructing and operating the hypothetical new build PSTN than it would be by merely seeking access to it as an access seeker. This is the principle of competitive neutrality. If this principle is not respected, an otherwise efficient provider of the service would choose not to provide it, and no Retail PSTN Services would be provided to the community.

⁸ See Tye, W., 2002, *Competitive Neutrality: Regulating Interconnection Disputes in the transition to Competition*, paper for ACCC Regulation and Competition Conference, July 25 – 26.

38 Second, consistently allocating costs to promote competitive neutrality ensures that the most efficient provider prevails in the market, meaning that services are provided at the lowest resource cost to society.

39 Therefore, competitive neutrality is consistent with the legislative criteria because:

- access seekers and Telstra will be able to compete on their merits, and therefore competition will be promoted;
- competition on the merits encourages the lowest cost supply and therefore efficient investment and use of the network;
- efficient investment promotes the interests of access seekers who use the network in that it will be reliably and efficiently supplied; and
- Telstra's legitimate business interests and efficient investment incentives are promoted because its ability to recover efficient costs is not undermined.

E TELSTRA'S PROPOSED UNDERTAKING PRICES AND FULL COST RECOVERY

40 Telstra's proposed Undertaking prices are set so as to enable Telstra to fully recover the efficient cost of the local switching and transmission elements of the PSTN. These elements together are known as the Inter-Exchange Network ("IEN")⁹. Telstra has set the Undertaking prices consistent with the lower bound of its estimate of efficient IEN costs. Telstra's estimate of the efficient IEN costs are below Telstra's historic and current cost estimates of the IEN and below the Commission's own efficient cost estimate of the IEN (see table below). On this basis, Telstra believes that the level of costs it is seeking to recover in the Undertaking prices is consistent with the statutory criteria (see Section D1 above) and therefore reasonable.

⁹ Telstra has excluded Customer Access Network ("CAN") costs from the calculation of the Undertaking prices, as the recent increase in wholesale basic access charges allows Telstra to align its recovery of CAN costs with the efficient costs of the CAN. If the Commission imposes changes to wholesale basic access charges in the Undertaking period, then corresponding changes will be required to the cost pool used to calculate the Undertaking prices.

\$ millions	2006/07	2007/08
Telstra lower bound efficient cost estimate	[c-i-c]	[c-i-c]
Telstra upper bound efficient cost estimate	[c-i-c]	[c-i-c]
Telstra historic costs ¹	[c-i-c]	[c-i-c]
Telstra replacement cost ¹	[c-i-c]	[c-i-c]
ACCC TSLRIC estimates	[c-i-c]	[c-i-c]

¹ Calculated for 2004/05

41 The remainder of this section sets out Telstra’s estimation of efficient costs, its calculation of historic and current costs and its analysis of the Commission’s own IEN cost estimates.

E1 Telstra’s estimate of efficient IEN costs

42 The Commission estimates efficient costs using what is known as a Total Service Long Run Incremental Cost (“TSLRIC”) methodology. Such a forward-looking optimised cost approach abstracts from the actual Telstra network and seeks to approximate the costs that an efficient operator would incur in supplying PSTN services in Australia using a newly built network.

43 As the Commission is aware, Telstra has developed an economic cost model that incorporates the latest PSTN technologies and deployment practices. This model is known as the PIE II model and has been made available to relevant parties within the industry for review in the context of the 2003 core services Undertakings. A full description of the PIE II model is provided in Annexure A.

E1.1 Update of the PIE II Model

44 The PIE II model was initially built to cover a four year period from 2000/01 to 2004/05. In order to estimate the cost of the IEN in 2006/07 and 2007/08 the following key parameters have been updated in the PIE II model:

- (a) physical volumes;
- (b) Weighted Average Cost of Capital; and
- (c) changes in the replacement cost of assets.

Volumes

45 The first change that is made to update the PIE II model is for the physical volumes that are used for dimensioning the IEN. For this purpose, the PIE II model relies on traffic volumes associated with all calls that use the PSTN.

- 46 Telstra sourced the traffic data from the Telstra Forecasting System (“**TELFOR**”). TELFOR is the centralized intranet based system used for Telstra’s quarterly forecasting process. The key output from TELFOR is the Physical Target Packages (“PTP”) and Revenue Forecast Reports.
- 47 PTPs are completed on a quarterly basis by product managers and product forecasters and are reviewed and signed off by Business Units. Telstra has used the 2004/05 Quarter 4 (version 0624) templates to derive traffic demand for the purposes of estimating total network (and unit) costs for 2006/07 and 2007/08.
- 48 The 2004/05 Q4 PTP used in PIE II are presented in the table below. The volumes in the table include both PSTN and ISDN volumes.

	2006/07	2007/08
	<i>Millions of end-use minutes</i>	
Local voice	[c-i-c]	[c-i-c]
STD	[c-i-c]	[c-i-c]
IDD	[c-i-c]	[c-i-c]
Fixed-to-Mobile and Mobile-to-Fixed	[c-i-c]	[c-i-c]
IN/Number translation	[c-i-c]	[c-i-c]
Interconnect	[c-i-c]	[c-i-c]
Internet	[c-i-c]	[c-i-c]
Total	[c-i-c]	[c-i-c]

Weighted Average Cost of Capital

- 49 It is a fundamental principle of finance and of business that investments are made in projects only if there is an expectation that an appropriate reward will be earned to compensate for any risk that the project entails. The higher the risk, the higher the expected return needs to be to entice investors.
- 50 The principle that risk will require an appropriate expected return applies to both of the major sources of capital to a business, that is, debt and equity. The process of determining the appropriate expected return for a business builds upon the estimates of the appropriate return to each source of capital. Then these costs of capital are weighted by their respective contributions to the total capital. The resulting cost of capital for the business is referred to as the Weighted Average Cost of Capital or the WACC.

51 Telstra commissioned Professor Jerry Bowman to estimate a WACC for PSTN OTA and LCS for each of the years that the PIE II model was run, to arrive at an estimate of the annual IEN cost pool for 2006/07 and 2007/08. In addition to estimating the point estimate of the WACC, Professor Bowman has also estimated the WACC adjusted upward by 1 standard deviation.

52 Professor Bowman's suggestion that all WACC parameters should have a one standard deviation range estimated, as well as a best estimate, is based on his view (which Telstra supports) that the WACC is estimated in an uncertain environment and that virtually all of the WACC components are estimated with error. As a result, there are three possible outcomes for the chosen point estimate WACC:

- (a) the chosen point estimate WACC may reflect the "true" cost of capital, resulting in the provider of the services earning a normal economic profit and having adequate incentives for further investment;
- (b) the chosen point estimate WACC may be set above the "true" cost of capital, resulting in the provider earning excess economic profits and having clear incentives for further investment including in maintenance and service quality; or
- (c) the chosen point estimate WACC may be set below the "true" cost of capital, resulting in the provider earning below normal economic profits and not having an incentive to invest or to satisfactorily maintain the services it provides.

53 Professor Bowman notes that the first of these possible outcomes is clearly efficient, whilst the other two are not. If the net long-term costs to society were the same for over estimating as for under estimating, then it would be appropriate for the Commission to set WACC at its best point estimate. However, they are not equal. It is widely agreed that in a regulatory environment, the long-term social costs of under estimating the cost of capital are higher than are the long-term social costs of over estimation. There is, in other words, an asymmetry in the ultimate effects of a mis-estimation and/or mis-application of the WACC¹⁰.

54 If the estimated WACC is too low, the access provider will be unable to recover the efficient and prudently incurred costs of providing access including network construction. While this may provide short-term benefits to access seekers and end-users in the form of

¹⁰ Mis-estimation of the WACC results from an estimate of the WACC that is different to its "true" value. Mis-application of the WACC results from an inappropriate application of the WACC, for example to an asset base that does not properly reflect the true asset base.

lower current prices, it would be detrimental in the medium to long term as it reduces the incentive for the access provider to properly maintain the network and to re-invest in the network where appropriate and efficient. Consequently, if the WACC is too low, future investment and/or modernisation of the PSTN will not occur and the entire benefit to society of the additional output that investment would have permitted is foregone. Since the assets under regulation in this manner are by assumption, essential facilities with significant entry barriers there is often little prospect of comprehensive duplication by alternate suppliers. As a result when service quality declines consumers have no alternative supplier and hence the service for all users is degraded. Under-remuneration of the WACC also has significant negative consequences for productive and dynamic efficiencies, the extent of innovation and the quality of service. These negative effects will affect all current and prospective consumers.

55 Conversely, if the overall return on capital were set slightly too high, the main effect would be to increase the prices paid by access seekers and ultimate consumers. Such over-pricing results in a further allocative inefficiency (consumption is reduced from the volume that would prevail were prices set at marginal costs) but does not have the same negative implications for network provision, innovation and quality of service.

56 The view that the downside consequences of under-estimating the WACC are greater than those associated with over-estimating the WACC is now becoming recognised in regulatory circles. The New Zealand Commerce Commission (NZCC) specifically recognised this asymmetry¹¹:

“The Commission notes concerns about the asymmetric nature of errors in assessing WACC, i.e., underestimation is the more serious error because it may lead to underinvestment by the regulated companies.”

57 To reflect these asymmetric impacts, Professor Bowman suggests that all parameters have one standard deviation range estimated, as well as a best estimate. A judgement then needs to be made regarding the level of confidence appropriate to achieve a balancing of the social consequences of an error in setting WACC. From this, an appropriate WACC can be determined. In Professor Bowman’s view, the appropriate nominal post-tax vanilla WACCs for PSTN OTA and LCS are 14.06% and 14.26% for 2006/07 and 2007/08, respectively.

¹¹ New Zealand Commerce Commission, 2004, *Gas Control Inquiry Report*, November, para 9.92.

58 The table below presents Professor Bowman’s WACC parameter ranges.

Parameter	Comment	2006/07	2007/08
Risk free rate	Commonwealth 10-year bond and the market rate-on-the-day	5.48%	5.48%
Market risk premium	Benchmark approach adjusted for 10-year risk free rate	7.0%	7.0%
Debt proportion	Target ratio for PSTN-OTA and LCS	[c-i-c]	[c-i-c]
Debt risk premium	Estimated from Telstra’s traded 10-year debt issues	1.15%	1.15%
Debt issuance cost	Cost incurred to issue debt, annualised	0.2%	0.2%
Cost of debt capital	Sum of the risk free rate, debt risk premium and debt issuance cost	6.83%	6.83%
Tax rate	Use statutory rate	30%	30%
Franking credits	Continue to use status quo value	0.5	0.5
Asset beta	Systematic risk for all-equity firm	0.7	0.7
Equity beta	Systematic risk for levered equity	0.873	0.873
Equity issuance cost	Cost incurred to issue equity, annualised	0.15%	0.15%
Cost of equity capital	Use CAPM plus the equity issuance cost	11.74%	11.74%
WACC (point estimate)	Nominal, post-tax vanilla	10.76%	10.76%
WACC with uplift of 1sd	Nominal, post-tax vanilla	14.06%	14.26%

59 The full report of Professor Bowman is provided as Annexure B, which sets out in detail the calculation of the WACC and its various input parameters.

Change in replacement cost of assets

60 The third update to the PIE II model was to incorporate price indices that reflect the change in the efficient cost of building the IEN. The price indices are used both to calculate the value of the starting asset base and in the tilted annuity used to annualise capital costs.

61 Price indices were constructed for each of the major asset categories relevant in the costing. The price indices used are presented in the table below in terms of historical compound annual growth rates (“CAGR”) over 3 years.

- 62 Price indices for the IEN asset categories were sourced predominantly from the Annual National Accounts published by the Australian Bureau of Statistics (“ABS”) for various categories of capital stock used specifically by the communication services sector. Although these constructed price deflators are broader than just the asset category to which they have been applied, they have the advantage that they relate solely to assets used by the communications services sector. No price escalator was applied to spectrum licences or land and buildings.
- 63 For a number of asset categories the indices constructed for the purposes of producing the Current Cost Accounts under Limb 1 of Accounting Separation were used, albeit with some modification. The price indices drawn from the Current Cost Accounts are based on a split between labour and materials. The splits are determined by monitoring relevant construction projects and capturing the level of materials and labour employed. The splits were first calculated for 2002/03 and it is intended that they will be implemented on a three year rolling average. The splits used in constructing the indices below are based on the average over 2002/03, 2003/04 and 2004/05.
- 64 The labour component of the Current Cost Account indices was based on various measures of average weekly ordinary time earnings (AWOTE) published by the ABS either for the construction sector, the communications services sector or across all industries. For the purposes of the price indices used to update PIE II, the Wage Cost Index also published by the ABS has been used as a more reliable measure of the underlying wage movements in the relevant industries given the widespread view that the AWOTE measures are distorted by compositional and other shifts which should not form part of a TSLRIC-based costing.
- 65 The price indices used are as follows:

Description	Price Trend (3 year CAGR)	Source
Radio Transmission	0.1%	Based on ABS national accounts data, Communications services capital stock of other machinery & equipment
Spectrum Licence	0.0%	No index applied
Optical Fibre	-8.5%	Based on ABS national accounts data, Communications services capital stock of electrical & electronic equipment
Indirect Capital	-1.9%	Based on ABS national accounts data, Communications services capital stock of motor vehicles and other transport equipment
Land and Buildings	0.0%	No index applied
SDH Equipment	-8.5%	Based on ABS national accounts data, Communications services capital stock of electrical & electronic equipment
Local Switching	-8.5%	Based on ABS national accounts data, Communications services capital stock of electrical & electronic equipment
LAS Software	-6.9%	Based on ABS national accounts data, Communications services capital stock of software
Signalling Transfer Point	-8.5%	Based on ABS national accounts data, Communications services capital stock of electrical & electronic equipment
Transit Switching	-8.5%	Based on ABS national accounts, Communications services capital stock of electrical & electronic equipment
TNS Software	-6.9%	Based on ABS national accounts data, Communications services capital stock of software
Main Conduit & Trenching	[c-i-c]	CCA
Pair Gain Systems	[c-i-c]	CCA

E1.2 Results from the PIE II model

66 Telstra has calculated a lower and upper bound of efficient IEN costs using the PIE II model. The only parameter value that is adjusted between the two scenarios is the WACC. The lower bound estimate, which is used to derive the Undertaking prices, uses the point estimate of the WACC while the upper bound estimate uses the WACC uplifted by 1 standard deviation.

67 The lower bound of the annual cost pools for the IEN network elements calculated by the PIE II model are as follows:

	2006/07	2007/08
Transmission		
TNS to TNS	[c-i-c]	[c-i-c]
LAS to TNS	[c-i-c]	[c-i-c]
LAS to LAS	[c-i-c]	[c-i-c]
RAU to LAS	[c-i-c]	[c-i-c]
Switching		
STP	[c-i-c]	[c-i-c]
TNS	[c-i-c]	[c-i-c]
LAS	[c-i-c]	[c-i-c]
RAU	[c-i-c]	[c-i-c]
Total	[c-i-c]	[c-i-c]

68 The upper bound of the annual cost pools for the IEN network elements calculated by the PIE II model are as follows:

	2006/07	2007/08
Transmission		
TNS to TNS	[c-i-c]	[c-i-c]
LAS to TNS	[c-i-c]	[c-i-c]
LAS to LAS	[c-i-c]	[c-i-c]
RAU to LAS	[c-i-c]	[c-i-c]
Switching		
STP	[c-i-c]	[c-i-c]
TNS	[c-i-c]	[c-i-c]
LAS	[c-i-c]	[c-i-c]
RAU	[c-i-c]	[c-i-c]
Total	[c-i-c]	[c-i-c]

E1.3 Reasonableness of Telstra's efficient cost estimates

69 Telstra has commissioned a report from an independent expert economist on the appropriateness of the PIE II model, including the updating of the assumptions set out above.

Expert report

70 Dr Bridger Mitchell, an expert economist with extensive international experience in telecommunications cost modelling has reviewed Telstra's PIE II model and has

benchmarked, where possible, the methodologies used in it against international telecommunications cost models. This review, undertaken by Dr Bridger Mitchell is provided in Annexure C.

71 In summary, Dr Mitchell concludes that the PIE II model is based on Telstra's best-practice network technology. It is forward-looking, incorporating subscriber and traffic forecasts for the years 2006/07 and 2007/08. Provisioning of each network element is based on efficient engineering principles that take into account subscriber and traffic density. Asset prices and operating, maintenance and indirect expenses are estimated based on recent experience with current-technology equipment.

72 Further, Dr Mitchell states that it is his opinion that Telstra's cost-estimating methodology and the PIE II model appropriately incorporate the principles for TELRIC modelling that have been developed and applied in international practice.

73 On specific modelling issues Dr Mitchell states that:

- The scope of the network modelled in the PIE II model in terms of services included is both consistent with international practice and with the legislative objective of promoting competition, by ensuring that the prices for services used by access seekers are based on the same costs as are allocated to Telstra's Retail PSTN Services and, in particular:
- The model is consistent with the efficient production of services as it uses of the most current forecasts available for traffic and customer numbers.
- Telstra's PIE II model is based on best-is-use technology principles.
- The dimensioning of major network elements in the PIE II model is consistent with the estimation of efficient network costs. In terms of the IEN, Dr Mitchell notes that the PIE II model goes beyond the strict implementation of the scorched node assumption in several respects because it (a) optimises the choice of equipment located in remote access sites that are connected to a local area switch; (b) determines the locations of those sites; and (c) optimises the number of local area switches required at each site. The PIE II model thus achieves a more cost efficient design that would be obtained from a strict scorched-node-model, which would require that each LAS and remote switching unit in the current Telstra network be retained in its current

location. Dr Mitchell also finds that the dimensioning of switching capacity and the design of transport (ie transmission) in the PIE II model follow international practice.

- The use of price trends to project forward the annual capital costs in the PIE II model is appropriate, as it improves the reliability of estimates of the annual capital costs.
- Telstra's estimation of operating and maintenance expenses are based largely on the O&M expenses incurred for current generation assets. Dr Mitchell concludes that this approach is the most nearly forward-looking calculation that can be extracted from accounting models of operating experience. He finds that the expense factors used in the PIE II model are broadly consistent with TELRIC models in the US. Overall, Dr Mitchell concludes that the PIE II model's expense factors are appropriate for calculating the efficient costs of the Undertaking services.
- For the estimation of indirect capital costs and operating and maintenance expenses, Dr Mitchell finds that the PIE II model methodology is appropriate and consistent with international practice.

E2 Telstra's historic and current cost estimates

74 To further demonstrate the reasonableness of the level of IEN costs that Telstra has used to calculate the Undertaking prices, Telstra has also calculated the IEN costs based on its own historic and current costs. The historic and current cost accounts are prepared in accordance with the record keeping rules determined by the Commission. The accounts are submitted to the Commission every six months and are audited annually. The most recent audited accounts available are for the 12 month period to 30 June 2005. Therefore, it is these accounts that are used for the calculation.

75 To make the IEN cost pools comparable between the regulatory accounts and the PIE II model, the following calculation was undertaken:

- The total costs for the product PSTN OTA supplied to external parties, excluding the end-user access adjustment, was divided by the volume of total PSTN originating and terminating minutes from schedule 8 of the regulatory accounts.
- The resulting unit costs for PSTN OTA was multiplied by the total volume of PSTN end-use minutes for the full set of PSTN services modelled in the PIE II model: local calls, long distance calls, international calls, fixed-to-mobile calls, PSTN OTA and

LCS. ISDN traffic has been excluded for the purposes of this calculation and hence the results understate the cost pool as compared with the results of the PIE II model.

76 The above calculations were performed for both the historic and current cost versions of the regulatory accounts. In addition, the following adjustments were made:

- [c-i-c]
- [c-i-c]
- [c-i-c]

77 The results of the analysis described above are presented in the table below.

	Historic costs	Current costs
Organisation costs	[c-i-c]	[c-i-c]
Product and customer costs	[c-i-c]	[c-i-c]
Network costs	[c-i-c]	[c-i-c]
Cost of capital	[c-i-c]	[c-i-c]
CCA adjustment	[c-i-c]	[c-i-c]
Total annual costs	[c-i-c]	[c-i-c]

E3 Commission's cost estimates

78 The last available cost estimates of the PSTN that the Commission produced using its own TSLRIC model, the n/e/r/a model, was in its assessment of Telstra's PSTN undertakings for 1999/00 and 2000/01 ("2000 Decisions")¹². In the 2000 Decision, the Commission estimated the TSLRIC for both the CAN and the IEN. Given that Telstra's proposed Undertaking prices are limited to the recovery of IEN costs, the analysis below is also limited to the IEN.

79 For the IEN the Commission presented total annual costs for each of the switching and transmission elements in the n/e/r/a model, together with the volume of call end minutes using each network element and the resulting cost per end minute¹³. This information was presented for both 1999/00 and 2000/01 and is summarised in the table below.

¹² ACCC, 2000, *A Report for the Assessment of Telstra's Undertaking for the Domestic PSTN Originating and Terminating Access Services*, July.

¹³ *Ibid*, Tables A1.3 and A1.5.

Network element	Annual cost, \$ millions		Call end minutes, millions		Cost per end minute	
	1999/00	2000/01	1999/00	2000/01	1999/00	2000/01
IRIM	\$82	\$83	73,616	85,165	\$0.0011	\$0.0010
RSS/RSU	\$287	\$299	147,458	170,595	\$0.0019	\$0.0018
RAU ¹	\$369	\$382	221,074	255,760	\$0.0017	\$0.0015
LAS	\$354	\$368	224,414	259,624	\$0.0016	\$0.0014
TS	\$60	\$64	65,202	74,939	\$0.0009	\$0.0009
IRIM-LAS	\$1,246	\$1,295	75,408	86,671	\$0.0165	\$0.0149
RSS/RSU-LAS	\$223	\$231	210,683	236,879	\$0.0011	\$0.0010
RAU-LAS ¹	\$1,469	\$1,526	286,091	323,550	\$0.0051	\$0.0047
LAS-LAS	\$164	\$170	80,302	89,776	\$0.0020	\$0.0019
LAS-TS	\$130	\$136	178,280	199,052	\$0.0007	\$0.0007
Total	\$2,546	\$2,646				

1 RAU was calculated by Telstra as the sum of IRIM and RSS/RSU in order to align the n/e/r/a model categories with the PIE II model categories

80 In addition, the Commission reports that conveyance costs (ie IEN costs) tend to be insensitive with respect to traffic volumes. Specifically, the Commission reports that a 10 per cent increase in the number of call minutes produces only approximately a 0.6 per cent increase in total conveyance costs¹⁴.

81 Based on this information, it is possible to forecast what the Commission's TSLRIC estimates would be for 2006/07 and 2007/08. This was done using the following methodology:

1. First, the difference between the Commission's cost pools for 1999/00 and 2000/01 was divided into separate categories:
 - a) The difference resulting from traffic volumes which was calculated based on the cost volume elasticity reported by the Commission of 0.06 (ie a 10% increase in traffic results in a 0.6% increase in costs). This difference (between 1999/00 and 2000/01) is [c-i-c] across all IEN network elements (see table below for the difference for each network element).
 - b) After removing the volume related change in the Commission's cost pool of [c-i-c] as calculated in step 1(a) above, the remaining difference between the Commission's IEN cost pools for 1999/00 and 2000/01 is [c-i-c] and this is

¹⁴ *Ibid*, Section A1.2.1, p47.

attributed to non-volume related factors (see table below for the difference for each network element). Across all IEN network elements this change is [c-i-c] although for the purposes of this calculation, each network element level is individually calculated.

2. Second, the traffic volumes for 2006/07 and 2007/08, together with the cost-volume elasticity of 0.06 were used to calculate the change in the cost pool compared with the Commission's estimate of the IEN cost pool for 2000/01 due to volume changes. Across all network elements this change is [c-i-c] for 2006/07 and [c-i-c] for 2007/08 (see table below for the change for each network element).
3. Third, the change in the Commission's 2000/01 cost pool due to non-traffic related factors was calculated based on the non-volume related traffic factors calculated in 1(b). Across all network elements this change is [c-i-c] for 2006/07 and [c-i-c] for 2007/08 (see table below for the change for each network element).
4. The two changes in the cost pools estimated in steps 3 and 4 above were then added to the Commission's IEN cost pool estimate for 2000/01 to arrive at an estimate of the IEN cost pool for 2006/07 and 2007/08.

\$ millions	Difference in ACCC cost pools for 1999/00 and 2000/01		Forecast difference between ACCC cost pools for 2000/01 and 2006/07		Forecast difference between ACCC cost pools for 2000/01 and 2007/08	
	Volume related	Non-volume related	Volume related	Non-volume related	Volume related	Non-volume related
RAU	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
LAS	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
TS	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
RAU-LAS	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
LAS-LAS	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
LAS-TS	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Total	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]

82 As can be seen from these figures there is a relatively large change in the cost pool due to non-volume related factors. Based on the Commission's description of the n/e/r/a model

and the n/e/r/a model documentation itself, it is not clear to Telstra what would be driving this cost increase, as the price trends for most of the IEN assets are declining. Therefore, in presenting the total cost pools from the Commission's TSLRIC model, Telstra presents results both with and without the non-volume related cost increases.

83 Adding these estimated changes in the cost pools to the Commission's 2000/01 cost pool provides an estimate of the total IEN cost pool as forecasted using the n/e/r/a model outputs. This gives a total IEN cost pool of between [c-i-c] and [c-i-c] for 2006/07 and between [c-i-c] and [c-i-c] for 2007/08.

\$ million	2006/07		2007/08	
	Including non-volume related increase	Excluding non-volume related increase	Including non-volume related increase	Excluding non-volume related increase
RAU	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
LAS	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
TS	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
RAU-LAS	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
LAS-LAS	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
LAS-TS	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Total	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]

F TELSTRA'S UNDERTAKING PRICES AND ENCOURAGING THE EFFICIENT USE OF THE NETWORK

F1 Previous approach

84 Historically, Telstra's PSTN has been treated as two completely separate components, the CAN and the IEN.

85 The prices for PSTN OTA have been calculated to include a contribution to both of the above components. The average headline rate in the 2005/06 period was 1c per minute, although it was charged on a geographically disaggregated basis and was split between a flagfall and per minute charge.

86 In terms of the contribution to the IEN, PSTN OTA prices had been set on the basis that every minute of traffic that utilises the IEN is allocated the same level of costs. So, for example, the total annual cost of a local switch would be divided by the total number of PSTN minutes that use that switch, regardless of whether it is a retail or wholesale minute

of traffic, regardless of whether it is an originating or terminating minute of traffic and regardless of whether the end-use of the traffic was for the supply of local calls, long distance calls or any other call type.

87 In terms of the contribution to the CAN, PSTN OTA prices had only included a contribution to these costs in the form of an “Access Deficit Contribution” (“ADC”). The ADC was calculated by taking PSTN CAN costs and relevant basic access retail costs and deducting the maximum revenues that Telstra could secure toward these costs under the retail price controls (even where Telstra actually charged less). The remainder, the deficit, was then allocated equally to all PSTN traffic, including PSTN OTA.

88 The sum of the IEN contribution and the ADC made up the total PSTN OTA charge. However, in practice, the PSTN OTA charge was set substantially below Telstra’s estimate of efficient costs.

89 For LCS the price has historically been set on the basis of a RMRC methodology. As the price of local calls is capped under the retail price controls to 22c/call, this approach resulted in a charge for LCS of 18.23c/call. As LCS is always sold with wholesale basic access, Telstra had previously structured the LCS price so that the full retail price of basic access was charged to wholesale customers and the retail costs for basic access were deducted from the wholesale price of local calls. This brought the LCS price to 13.61c/call, but this was only available when wholesale customers paid the full retail price for basic access.

F2 Difficulties with this approach

90 Telstra believes this approach is problematic for a number of reasons:

- First, it fails to take into account any restrictions on Telstra’s ability to recover costs from individual services. Most notably in the past, the equal allocation of costs to traffic has resulted in more costs being allocated to local calls than could possibly be recovered under the retail price controls. Consequently, rather than using TSLRIC as the pricing principle for local calls, the Commission instead chose to use a RMRC methodology, without any reconciliation back to cost recovery.
- Second, the equal allocation is essentially arbitrary, as costs do not vary with individual minutes. In fact, based on both Telstra’s TSLRIC analysis and the TSLRIC analysis undertaken by the Commission, the IEN cost pool is extremely inelastic with

respect to traffic. For example, in the last TSLRIC estimates produced by the Commission, it was concluded that¹⁵:

“A 10 per cent increase in the number of call minutes (say under the assumption of greater call holding times) produces only approximately a 0.6 per cent increase in total conveyance costs. Generally this means that for a given increase in traffic, transport costs per minute of traffic will fall.”

- Third, the approach is inconsistent with the calculation of termination rates for the mobile network. In the context of mobile termination, mobile players put the equivalent of both CAN and IEN costs in the total cost pool and divide by total minutes of traffic. Therefore, the party making a call to a mobile customer contributes toward the CAN element of the mobile network, regardless of what level of rental revenue the mobile player secures directly from the mobile subscriber.
- Fourth, the structure of charges is fully variable with respect to minutes despite the fact that the structure of retail charges is moving toward fixed charges.
- Fifth, the structure of charges, which does not reflect cost causation, discourages efficient wholesale use of Telstra’s PSTN as it results in high and increasing variable charges for PSTN OTA, as the volume of traffic on the PSTN continues to decline (and hence unit costs increase).

F3 Telstra’s proposed approach to addressing these problems

91 To address these problems, Telstra has developed an alternative structure of PSTN OTA and LCS charges with the objective of encouraging more efficient use of the PSTN.

92 In addition to the structural issues associated PSTN OTA and LCS pricing, Telstra believes that it would also be beneficial to remove the artificial distinction that has existed to date between the CAN and IEN, and treat the PSTN as a single cost pool. This would ensure that PSTN TA prices make a full contribution to both the CAN and IEN, regardless of the level of rental charges imposed at the retail level. This would ensure that the benefits that the calling party obtains from placing the call (and the option of being able to call any end-user connected to the PSTN) are reflected in PSTN TA charges and hence retail prices associated with making that call. Additionally, it would reduce the sensitivity of the charging methodology to the inherently arbitrary distinction between the CAN and

¹⁵ ACCC 2000, *A Report on the Assessment of Telstra’s Undertaking for the Domestic PSTN Originating*

the IEN – a distinction which is likely to become ever more blurred as the network evolves. It would also align the methodology used for PSTN termination with that used for mobile termination, which is of significance given mobile/fixed convergence and competition for traffic between fixed and mobile networks. However, this would require a major shift in the methodology and cost pool estimation for the PSTN and therefore in this Undertaking Telstra has not sought to implement this change.

- 93 As set out in section D2 of this submission, a structure of charges that encourages efficient use of the PSTN is consistent with the legislative criteria. Therefore, where possible, Telstra has implemented a two-part tariff structure to improve efficiency. A two-part tariff involves dividing the price into a fixed and variable component. The efficiency benefits of a two-part tariff are the result of lowering the variable component of the price toward variable cost, encouraging greater and more efficient usage of the PSTN. The fixed component of the charge, as its description suggests, does not vary with the volume of traffic purchased. However, it does allow full cost recovery to be achieved (consistent with the legislative criteria), while minimising the distortion to PSTN usage.
- 94 It is only possible to implement the two-part tariff structure when there is a practical way to implement the fixed component of the price. As many of the minutes utilising the PSTN are not directly associated with a customer on whom a fixed charge can be levied, there is no practical way to levy a fixed charge on a per customer basis. This is the case with all terminating minutes on the PSTN and originating minutes for over-ride and special services (One3, 1300, 1800, 181x and 190). For example, for traffic that originates on mobile networks and terminates on the PSTN, it would be impossible to charge the mobile operators a two-part tariff, as there is no sensible measure on which the fixed component of terminating access could be levied. Therefore, in these cases, the proposed PSTN OTA prices continue to be fully variable.
- 95 The two-part price is proposed for PSTN originating traffic, where that traffic belongs to the same access seeker that is the pre-selected carrier. In these cases, there is a clear basis on which a fixed charge per customer can be levied, namely the volume of preselected lines. Therefore, in the Undertaking price structure, Telstra differentiates between the structure of prices for:
- PSTN TA and non-preselect OA; and

- PSTN preselect OA.

96 For LCS, Telstra continues to use the RMRC approach that the Commission has indicated is appropriate going forward. Therefore, LCS is levied on a per call basis at a national average price.

97 The methodology Telstra has adopted for calculating the LCS and PSTN OTA prices is set out below, using 2006/07 as an example. Exactly the same methodology is applied in calculating the prices for 2007/08.

F4 LCS prices

98 As discussed above, the RMRC approach is adopted to calculate the LCS prices. The starting price for the RMRC calculation is taken as the unbundled local call price of 22 cents per call (20 cents per call GST exclusive) that Telstra charges when an end-user does not preselect to Telstra. The unbundled local call price is the appropriate starting price for the RMRC calculation because it allows Telstra to respond to competitors by lowering its bundled prices, without these changes flowing through to wholesale prices. In effect, this is the only way that Telstra is able to compete for the full bundle of PSTN services without creating a spiralling effect of ever declining wholesale and retail prices for local calls — which would obviously severely compromise the funding of the network (or result in ongoing increases in PSTN OTA prices).

99 To calculate the retail costs that should be deducted from the retail starting price, Telstra uses the 2004/05 Historic Regulatory Accounting Framework (“**RAF**”), the most recently available audited accounts. Telstra calculated these costs as average retail costs, consistent with the Commission’s previous views on the appropriate methodology¹⁶. Telstra has deducted the retail costs associated with both local calls and basic access, consistent with the methodology used previously¹⁷.

100 The retail costs for local calls and basic access from the 2004/05 RAF are set out in the table below. The retail costs are taken from the capital adjusted profit statement for the

¹⁶ See for example, ACCC, 2003, *Final Determinations for model price terms and conditions of the PSTN, ULLS and LCS Services* released in October, p88.

¹⁷ Since the declaration of LCS, Telstra has made both pricing constructs available (ie deduction of basic access retail costs from basic access or local calls). However, access seekers have never taken up the option to have basic access retail costs deducted from the basic access retail price. Therefore, Telstra has set LCS prices consistent with the approach all access seekers have preferred. If Telstra were to set LCS prices by deducting only local call retail costs (and not basic access retail costs) then the resulting LCS price would be 17.69 cents per call.

retail business for the basic access (referred to as “end-user access” in the RAF) and local call products. The retail costs in the RAF are comprised of organisational, product and customer and cost of capital costs. The only adjustment made to these costs is to remove installation costs (line item 4-2-01) from the product and customer costs.

101 The total retail costs are divided by the volume of retail local calls from Schedule 8 of the RAF to convert the retail costs to a cost per call. The Schedule 8 volume of local calls is also presented in the table below. The result is an average retail cost of 10.95c per call, comprised of [c-i-c] per call of basic access retail costs and [c-i-c] per call of local call retail costs.

	End-user Access	Local Calls
4-1 Organisational	[c-i-c]	[c-i-c]
4-2 Product and Customer	[c-i-c]	[c-i-c]
Retail cost of capital	[c-i-c]	[c-i-c]
Total	[c-i-c]	[c-i-c]
Schedule 8 volumes		[c-i-c]
Unit retail costs per call	[c-i-c]	[c-i-c]

102 The 10.95c per call of retail costs is deducted from the GST exclusive retail price of 20c per call to arrive at the LCS price of 9.05c per call.

103 In addition to this, an adjustment for absorbing the GST is also made, consistent with the Commission’s previous methodology. This methodology involves allocating to the LCS price the “retail cost share” of the GST that was required to be absorbed in the local call price when the GST was introduced. This is done by calculating the retail cost share of the LCS price, which is $2.54c/22c = 11.53\%$ and then multiplying this by the GST on local calls of 2c per call. This gives $11.53\% * 2c = 0.23c$. This amount is added back to the LCS price to give a GST adjusted price of 9.28 cents per call.

F5 **Headline PSTN OTA prices**

104 For PSTN OTA prices, the following steps are taken to calculate the undertaking prices.

1. The lower bound of Telstra’s efficient IEN costs of [c-i-c] for 2006/07 is taken as the starting point.

2. The contribution made to the IEN costs from local calls is then deducted. The contribution from local calls is calculated by multiplying the 2006/07 forecast volume of retail local calls and LCS calls by the proposed LCS price (excluding the adjustment for the GST) of 9.05c per call. The forecast volume of retail local calls for 2006/07 is [c-i-c] calls and the forecast volume of LCS calls for 2006/07 is [c-i-c] calls. Therefore, the total contribution from local calls to the IEN cost pool for 2006/07 is [c-i-c].
3. The contribution made to the IEN costs from local call interconnection is then deducted. Local call interconnection describes local calls originating on non-Telstra infrastructure and terminating on Telstra infrastructure. Telstra has commercial and reciprocal arrangements in place for local call interconnection, which involves application of the PSTN TA price up to a cap of [c-i-c] cents per call. To calculate the contribution from local call interconnection, Telstra has used the maximum price that could be imposed of [c-i-c] cents per call. In practice, there will be short duration calls that make a lower contribution and hence Telstra's methodology over-allocates costs to local call interconnect and correspondingly under-allocates costs to PSTN OTA, which means that the resulting PSTN OTA costs are understated. The forecast volume of local call interconnect calls for 2006/07 is [c-i-c] and so the total contribution to the IEN cost pool for 2006/07 from local call interconnection is [c-i-c].
4. The remaining IEN cost pool that needs to be recovered from PSTN OTA services (retail and wholesale) is then calculated as:
 - a. the total IEN cost pool of [c-i-c] less;
 - b. the contribution from local calls of [c-i-c] less;
 - c. the contribution from local call interconnection of [c-i-c];
 - d. which equals [c-i-c] .
5. The remaining IEN cost pool of [c-i-c] is then divided by the 2006/07 forecast of total PSTN OTA minutes (retail plus wholesale) of [c-i-c] minutes. This gives the headline rate of 2.18 cents per minute. This is the price that is applicable for PSTN TA and PSTN non-preselect OA traffic.

6. The 2.18 cents per minute headline rate is converted to a two-part price for PSTN preselect OA traffic by allocating the fixed component of the charge between a per minute charge and a per customer charge on a 50:50 basis. Telstra's choice of a 50:50 allocation is based on an assessment of what it believes is a reasonable structure of charges. While it would be possible to allocate a much smaller share (or even none) of the fixed costs to the per minute charge, this would have the impact of significantly increasing the per service charge. Therefore, it is Telstra's view that a 50:50 allocation is reasonable. The fixed cost share of the headline rate is calculated by taking the headline rate of 2.18 cents per minute and deducting the long run variable costs of carrying a minute of PSTN OTA traffic. Telstra's estimate of the long run variable cost of PSTN OTA is estimated by running the PIE II model with varying levels of traffic volumes to determine how total costs change. The upper bound of these runs was [c-i-c] per minute and this was used as the measure of long-run variable cost. Therefore, the per minute and per customer components of the PSTN preselection OA price are calculated as follows:

- a. per minute component: $[c-i-c] + (2.18 - [c-i-c]) * 50\% = 1.19$ cents per minute; and
- b. per customer component: $(2.18-1.19) * \text{forecast 2006/07 PSTN preselection originating minutes/ number of basic access plus ISDN lines}/12 = \1.44 per preselected line per month.

F6 Deaveraging of PSTN OTA prices

105 The headline prices for PSTN OTA are geographically deaveraged and are split between a flagfall and per minute price. The methodology used to deaverage the prices is as follows.

PSTN TA and PSTN non-preselect OA

106 The steps involved in deaveraging the PSTN TA and PSTN non-preselect OA prices are as follows.

1. The total contribution that PSTN TA and PSTN non-preselect OA volumes (retail plus wholesale) make to the total IEN cost pool is calculated. This is done by multiplying the headline rate of 2.18 cents per minute as calculated in step 5 of section F5 above by the total forecast volume of PSTN terminating and PSTN non-preselect originating minutes, which in 2006/07 is [c-i-c]. This gives the total contribution of [c-i-c]. Half

of this amount is recovered as geographically averaged charges and half is recovered as geographically deaveraged charges. Telstra has chosen to deaverage only half of the contribution to avoid extremely high prices in rural areas. If the contribution was fully deaveraged, the per minute price in rural areas would be 6.00 cents per minute rather than 3.87 cents per minute. This is also consistent with the approach used for PSTN preselect OA, where 50% of the price is recovered as a geographically averaged charge, but in that case on a per customer basis.

2. Of the total [c-i-c] contribution, 20% is treated as a flagfall charge and 80% as a per minute charge. This allocation was chosen for a number of reasons. First, the share of the price that is recovered as a flagfall charge impacts different call categories and access seekers in different ways. It increases the effective price for calls and access seekers with lower than average call hold times and increases the effective price for those with higher than average call hold times. The 20:80 split ensures that no call categories or access seekers are impacted disproportionately. Second, the 20:80 split is reflective of Telstra's retail PSTN price structure, with approximately 20% of Telstra's PSTN revenue being recovered as flagfall charges. Telstra notes that the approach of reflecting Telstra's retail pricing structure in the PSTN OTA structure is consistent with the Commission's preferred approach as described in its assessment of Telstra's previous PSTN OTA undertaking.¹⁸
3. The flagfall component of the price is calculated by summing together the geographically averaged and deaveraged flagfall rates. The averaged flagfall rate is calculated by taking half of the [c-i-c] cost pool and multiplying by 20% to arrive at [c-i-c]. This is then divided by the average volume of PSTN terminating and non-preselect originating call ends to arrive at the averaged flagfall rate of [c-i-c]. The deaveraged flagfall rate is calculated by taking the other half of the cost pool and also multiplying by 20% to arrive at [c-i-c]. This amount is allocated across geographic areas based on the share of IEN costs incurred in each area from PIE II. These shares are presented in the table below. The costs allocated to each geographic area are divided by the volume of PSTN terminating and non-preselect originating call ends in each area to arrive at the deaveraged flagfall price in each area. The deaveraged and averaged flagfall prices are summed together to calculate the total flagfall for each geographic area.

¹⁸

ACCC, 2004, *Assessment of Telstra's undertakings for PSTN, ULLS and LCS*, December, p45.

4. The per minute component of the price is calculated by summing together the geographically averaged and deaveraged per minute prices. The averaged per minute price is calculated by taking half of the [c-i-c] cost pool and multiplying by 80% to arrive at [c-i-c]. This is then divided by the average volume of PSTN terminating and non-preselect originating end-use minute to arrive at the averaged per minute rate of [c-i-c]. The deaveraged per minute rate is calculated by taking the other half of the costs pool and also multiplying by 80% to arrive at [c-i-c]. This amount is allocated across geographic areas based on the share of IEN costs incurred in each area from PIE II. These shares are presented in the table below. The costs allocated to each geographic area are divided by the volume of PSTN terminating and non-preselect originating end-use minute in each area to arrive at the deaveraged per minute rate in each area. The deaveraged and averaged per minute rates are summed together to calculate the total per minute for each geographic area.

	CBD	Metro	Provincial	Rural
2006/07	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
2007/08	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]

5. The results are presented in the table below

	2006/07		2007/08	
	flagfall	per minute	flagfall	per minute
CBD	\$0.0107	\$0.0136	\$0.0108	\$0.0141
Metro	\$0.0112	\$0.0139	\$0.0115	\$0.0145
Provincial	\$0.0134	\$0.0144	\$0.0137	\$0.0151
Rural	\$0.0378	\$0.0387	\$0.0386	\$0.0402

PSTN preselect OA

- 107 The steps involved in deaveraging the PSTN preselect originating access prices are as follows.

1. First the contribution made to the IEN cost pool from the per minute component of the PSTN preselect OA price was calculated. This was done by multiplying the per minute price of 1.19 cents (as calculated in step 6 of section F5 above) by the forecast

volume of PSTN preselect originating minutes, which is [c-i-c] minutes. This gives a contribution of [c-i-c].

2. The contribution was then allocated across geographic areas using the same methodology as set out in step 3 of the PSTN terminating and non-preselect originating section above.
3. The flagfall component of the charge was then calculated as 20% of the costs allocated to each geographic area divided by the number of call ends in that geographic area. The 20% was chosen for the same reasons as discussed above for PSTN terminating and non-preselect originating access (see step 2).
4. The per minute component of the charge was calculated as 80% of the costs allocated to each geographic area divided by the number of end-use minutes in each geographic area.
5. The results are set out in the table below.

	2006/07		2007/08	
	flagfall	per minute	flagfall	per minute
CBD	\$0.0035	\$0.0051	\$0.0034	\$0.0052
Metro	\$0.0042	\$0.0055	\$0.0043	\$0.0058
Provincial	\$0.0068	\$0.0065	\$0.0069	\$0.0068
Rural	\$0.0343	\$0.0340	\$0.0349	\$0.0352

G TELSTRA'S UNDERTAKING PRICES AND COMPETITIVE NEUTRALITY

108 As discussed in section D3, the legislative criteria require that access prices are set on a competitively neutral basis. Telstra has ensured that this is the case in calculating the Undertaking prices by ensuring that all lines, calls and minutes are treated identically in the calculations regardless of whether they are retail or wholesale services.

109 For LCS, all local calls were allocated 9.05 cents of IEN costs, regardless of whether they were retail local calls or wholesale local calls. Similarly, with PSTN OTA, all Telstra's retail traffic – domestic long distance, international and fixed-to-mobile were converted to PSTN originating and terminating minutes in order to ensure that all traffic was treated equally.

110 To demonstrate the relative contributions from retail and wholesale services, each of the proposed prices in the Undertaking for 2006/07 has been multiplied out by the corresponding retail and wholesale volumes to demonstrate that when every retail and wholesale call, minute and preselected customer makes exactly the same contribution to the cost pool then the total IEN cost pool of [c-i-c], and no more, is recovered.

	Undertaking Price	Retail service volumes, millions	Wholesale service volumes, millions	Retail contribution, \$ millions	Wholesale contribution, \$ millions	Total, \$ millions
TA and Non-preselect OA	\$0.0218	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Preselect OA per minute	\$0.0119	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Preselect OA per customer	\$1.4360	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
LCS	\$0.0905	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
LCI	\$0.0700	[c-i-c]	[c-i-c]		[c-i-c]	[c-i-c]
Total						[c-i-c]

111 Finally, Telstra has conducted imputation testing of its Undertaking prices using the imputation test that is constructed for the purposes of Limb 2 of Accounting Separation (September quarter)¹⁹. The test was first adjusted to reflect Telstra's increase in wholesale basic access charges, so that these are fully reflected in the test results. Telstra also made a downward adjustment to the mobile termination rates to align these with the Commission's proposed glidepath for 2006/07 and 2007/08. The results of the imputation tests are presented in the tables below.

112 While the margin available for residential customers is substantially below the margin presented in Telstra's September quarter Limb 2 report, the contribution of the Undertaking prices to this decline is only [c-i-c] of a percentage point. Further, the decline in the mobile termination rate from [c-i-c] cents per minute in the September quarter to the Commission's glidepath rate of 13.5 cents per minute for 2006/07 more than offsets this margin reduction. The margin between 2006/07 and 2007/08 also increases, due to the decline in the mobile termination rate to the end of the Commission's glidepath rate of 12

¹⁹ An imputation test should test whether the margin between retail and wholesale prices is sufficient to cover the avoidable costs of transforming the wholesale service into the retail service. The Limb 2 imputation test requires Telstra to use average rather than avoidable costs, which means the test is likely to be a conservative measure of the margins available to access seekers.

cents per minute, more than offsetting the increase in the Undertaking prices between the two years.

113 The margin for business customers is substantially higher than reported in Telstra's September quarter Limb 2 results. Of this [c-i-c]percentage point improvement, [c-i-c]of a percentage point is attributable to the proposed Undertaking prices, while the remainder is due to the decline in mobile termination rates.

2006/07	Total Bundle of Fixed Voice Products		
	Business	Residential	Total
Retail price	[c-i-c]	[c-i-c]	[c-i-c]
Access price	[c-i-c]	[c-i-c]	[c-i-c]
Unit cost	[c-i-c]	[c-i-c]	[c-i-c]
Imputed margin	[c-i-c]	[c-i-c]	[c-i-c]
Imputed margin %	[c-i-c]	[c-i-c]	[c-i-c]

2007/08	Total Bundle of Fixed Voice Products		
	Business	Residential	Total
Retail price	[c-i-c]	[c-i-c]	[c-i-c]
Access price	[c-i-c]	[c-i-c]	[c-i-c]
Unit cost	[c-i-c]	[c-i-c]	[c-i-c]
Imputed margin	[c-i-c]	[c-i-c]	[c-i-c]
Imputed margin %	[c-i-c]	[c-i-c]	[c-i-c]

H CONCLUSION

114 In summary, Telstra believes that the prices in the Undertakings are reasonable, as demonstrated by the above analysis. In particular:

- The Undertaking prices are set to recover the lower bound of Telstra's estimate of the efficient costs of the IEN.
- The lower bound of Telstra's estimate of the efficient costs of the IEN are below the level of historic costs, current costs and the Commission's own TSLRIC estimates.

- The LCS price in the Undertaking is set with respect to the methodology that the Commission has indicated is reasonable.
- As far as possible, Telstra has structured the PSTN OTA prices to encourage more efficient use of the PSTN.
- The Undertaking prices have been calculated by allocating exactly the same level of costs to all calls, minutes and customers, regardless of whether the volumes are retail or wholesale volumes. Therefore, the Undertaking prices are competitively neutral.
- The Undertakings prices pass imputation testing.

On this basis, Telstra urges the Commission to accept the Undertaking.

Dated 22 March 2006