Optus Submission to

Australian Competition and Consumer Commission

in response to the

Review of the Domestic Transmission Capacity Service

Pricing Principles

(Public Version)

July 2010

Table of Contents

1. Executive Summary

1.1 In April 2010 the Australian Competition and Consumer Commission (the ACCC) commenced a public inquiry into the pricing principles of the declared Domestic Transmission Capacity Service (DTCS). The review seeks comments on a number of different approaches for pricing the DTCS, taking into account recent developments in the regulatory environment. Optus is pleased to take this opportunity to contribute to the ACCC's review.

1.2 Under the ACCC's current pricing principle for transmission capacity services, prices are to be calculated by revaluing network assets at the cost of replacement with modern equivalent assets, using a cost model which designs a hypothetical transmission network (as opposed to compensating the service provider for the costs it has actually incurred). However, the ACCC has stated that it is open to considering other approaches to pricing.

1.3 The ACCC's willingness to consider alternatives to a "replacement cost" approach is entirely appropriate. Optus has argued in the context of fixed line services that alternate pricing approaches are more likely to meet the competition objectives of the Trade Practices Act, and this argument also applies in large measure to the pricing of transmission capacity services.

1.4 Transmission routes fall into one of two broad categories: competitive (such as the high traffic inter-capital routes) and non-competitive (including low traffic backhaul routes, tail-end routes and access infrastructure). Routes that are judged to be competitive are removed from the scope of price regulation, through either a review of the scope of declaration or an exemption process. Accordingly, Optus' comments in this submission are concerned principally with pricing principles for non-competitive transmission.

1.5 In Optus' view, the replacement cost approach to pricing places too great an emphasis on "investment incentives" as the means to promote the long term interests of end-users. For the foreseeable future, substantial network investment on non-competitive transmission routes is likely to occur only with the assistance of substantial Government subsidy programs such as the Regional Backbone Blackspots Program. It follows that that duplication of network infrastructure by access seekers on such routes is neither efficient nor likely to occur. This conclusion is only reinforced by the anticipated deployment of the National Broadband Network throughout Australia.

1.6 In practical terms, a core problem with the current approach is that it would result in a regular upward revaluation of assets that would inevitably lead to higher and higher access prices for transmission capacity. Such prices would stifle competition and would discourage efficient utilisation of transmission infrastructure. Moreover, such prices are not justified, since they compensate the service provider for investment costs it has long since recovered and which in practice will not recur in the future. As the ACCC itself has recognised, a replacement cost approach "*allows for the costs of a replacement asset to be reflected in access prices without requiring that investment in the replacement asset to actually take place*".

1.7 The current approach is also inconsistent with the efficiency criteria set out in the Trade Practices Act. The Australian Competition Tribunal roundly

criticised the use of hypothetical cost models to set replacement cost-based prices in its May 2010 judgement on Telstra's ULLS Undertaking. The Tribunal's view was that a price estimated by Telstra's model would encourage neither the economically efficient use of its network nor efficient investment by access seekers. The Tribunal also found that Telstra's legitimate business interests are "*to receive a commercial return on its prudent (past) investment in the infrastructure used to supply the ULLS, not a hypothetical new investment…*" The current pricing approach is discussed in the context of the Trade Practices Act criteria in Section 2 of this paper.

1.8 Consistent with a correct focus on prudent past investment in the infrastructure used to supply the service, a critical component of designing a new pricing approach for transmission services will be to ensure that appropriate regard is given to the age of the service provider's assets and the extent to which it has already recovered the original construction cost. In this submission Optus will argue that application of a Depreciated Actual Cost ("DAC") Pricing Principle will:

- enable the service provider to recoup its prudent investment in the network assets;
- enable access prices to be clearly linked to actual costs incurred or likely to be prudently incurred: and
- be clear, transparent and practical (capable of being implemented).

1.9 Optus submits that it is in the interests of end-users and of competition that a pricing approach based on DAC valuation is adopted, which will align access prices to the costs the service provider has actually incurred. By taking account of historic depreciation this will ensure that the service provider is not able to recoup the costs of its investment in assets several times over.

1.10 The ACCC has asked for stakeholders' views on a number of specific issues. In response, Optus submits that:

- The pricing of transmission services should not be burdened with the costs of network elements that are not required by access seekers. Transmission pricing should reflect costs that take into account the requirements of end users, that is, the price should not reflect the cost of a bundle that includes additional requirements beyond the access seeker's required grade of services (this is discussed in Section 3).
- On non-competitive routes, including "tail" or "terminating" routes and also a significant proportion of backhaul or "trunk" routes, regulated prices should be set with the objective of maximising utilisation of existing infrastructure and promoting competition, subject to ensuring recovery of investment costs which have not yet been recovered. Quite different considerations apply to competitive routes, which in any case are unlikely to remain subject to declaration (Section 4).
- The ACCC should set uniform prices reflecting the cost of transmission services, calculated by allocating the depreciated historic cost of Telstra's national transmission network according to forecast demand and route distance, adjusted for redundancy requirements and contract length as appropriate (Section 5).

2. Legislative Criteria

2.1 Optus considers that in order to determine the appropriate price-setting method for transmission services, and to calculate a proper valuation of network assets for these purposes, the ACCC must give serious consideration to the legislative criteria in the Trade Practice Act. This section of the paper sets out Optus' views on how each of the key criteria should be interpreted and the implications of each criterion for the transmission pricing principles.

2.2 In this section particular attention is paid to pricing based on 'replacement cost'. Under such an approach prices are set by revaluing network assets at the cost of replacement with modern equivalent assets, using a cost model which designs a hypothetical transmission network (as opposed to compensating the service provider for costs it has actually incurred).

2.3 The ACCC appears to be seriously contemplating a replacement cost approach for pricing transmission services. The current pricing principle for transmission is "TSLRIC+", a term which is often used to refer to a replacement cost approach. Further, "bottom up long run incremental cost" (which generally means replacement cost) is set out in the discussion paper as one of the potential methods being considered for pricing transmission.

2.4 Optus will conclude in this section that a replacement cost pricing principle would be inconsistent with the legislative criteria, and that application of a Depreciated Actual Cost ("DAC") Pricing Principle would be in the interests of end-users and of competition.

Efficient use of and investment in infrastructure

2.5 This criterion contains a number of objectives, and is best analysed by breaking it down into its constituent parts, which are:

- encouraging economically efficient investment in telecommunications infrastructure (by access seekers);
- encouraging economically efficient use of telecommunications infrastructure; and
- encouraging economically efficient investment in telecommunications infrastructure (by the access provider).

<u>Encouraging economically efficient investment in infrastructure (by access seekers)</u>

2.6 This aspect of the criterion is directed to the 'build or buy' signals sent to access seekers through access prices. The Commission has recognised that decisions of access seekers to build by-pass infrastructure are generally based on the relative resource cost of doing so.[3]

2.7 This criterion recognises that in some circumstances it will be efficient for access seekers to build their own network infrastructure that will bypass the incumbent's infrastructure, rather than purchasing access to services on that infrastructure.

[3] ACCC, *Access Pricing Principles: Telecommunication – a guide*, July 1997, p.29

2.8 In considering a price which promotes efficient investment in infrastructure by access seekers, it is important to recognise that the price must achieve two related goals, that is it must:

- promote efficient infrastructure investment; and
- avoid promoting inefficient duplication of infrastructure.

2.9 That is, for the purposes of satisfying this criterion, it is critical to be clear about the circumstances in which the construction of new bypass infrastructure will be efficient and the circumstances in which it will not.

2.10 In its judgement on Telstra's 'HFC exemption' appeal the Tribunal made the following comments regarding the meaning of efficient investment in Part XIC, in the context of an argument about potential additional investments in Optus' HFC network:

> *"commercial viability is not the same as efficient investment. As Optus submitted, to say that the Optus HFC Network is technically and commercially capable of delivering better services to more premises, and that Optus may plausibly be able to recover the costs of making the necessary infill investments, says little or nothing about the efficiency of making those investments, or indeed the likelihood of them being made. Relative to service provision over the existing infrastructure, the investments may not be efficient. The appropriate calculus is of social cost benefit, not the private cost benefit to Optus."*[4]

2.11 The use of a calculus of social cost benefit ensures that the total costs and benefits of developing a particular facility, relative to use of existing facilities, are brought to account.[5] An investment which is commercially viable or privately efficient may not be a socially efficient investment.[6]

2.12 The Tribunal noted that if alternative measures of provision are available at a cheaper cost then this will be relevant to the question of whether investment is efficient in social terms. It noted:

> *"As Optus submitted, even if in the future with the exemption Optus were to expand the reach of its HFC network and offer services via that network to end-users who it currently services through a Relevant Service, this might not represent socially efficient investment if alternative measures of provision were available at a cheaper cost. This, Optus said, would plainly not be in the LTIE."* [7]

2.13 In the context of such analysis of social welfare, the "cost" of access over the existing network does not include the costs which have already been sunk. Since sunk costs cannot be avoided, they are irrelevant to the question of which mode of service provision (ie, whether the access seeker chooses to

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[4] *Application by Telstra Corporation Limited* [2009] ACompT 1 at [16]
[5] See *Re Sydney International Airport* [2000] ACompT 1 at [205]; quoted with approval in *Application by Telstra Corporation Limited* [2009] ACompT 1 at [17].
[6] See *Application by Telstra Corporation Limited* [2009] ACompT 1 at [129], [131].
[7] *Application by Telstra Corporation Ltd* [2009] ACompT 1 (22 May 2009), at [112]

build or buy) requires society to incur the least cost.[8] The correct comparison is between the avoidable costs of the access seeker providing services on:

- bypass infrastructure (which includes the full construction cost of that infrastructure); and
- the existing infrastructure (which does not include full construction costs).

2.14 Given that the construction cost of new infrastructure is likely to outweigh the cost of operation, it will not be surprising that for transmission networks generally and particularly for non-competitive transmission routes including low traffic regional routes, tail-end routes and access infrastructure, the socially efficient outcome is that the infrastructure should not be duplicated. In rejecting Telstra's arguments in the HFC case, the Tribunal concluded that duplication of 'last half-mile' access infrastructure would be a socially wasteful investment.[9] The same argument applies to any infrastructure used to deliver transmission capacity services on non-competitive routes.

2.15 It follows that the access price for non-competitive transmission routes must not be set too high. If it is too high, then there is the possibility that it will fail to promote the efficient use of the incumbent's transmission network. That is, it will encourage infrastructure investment by access seekers in the highly likely circumstances where to "buy" would be a more efficient use of society's resources.

2.16 The consequence of this discussion is that a 'replacement cost' pricing approach for transmission services does not encourage economically efficient investment in infrastructure (by access seekers). This approach has been criticised by the Australian Competition Tribunal in its recent judgement on Telstra's ULLS undertaking. The Tribunal concluded that a price estimated by Telstra's cost model "*would not encourage efficient investment by access seekers…*"[10]

2.17 Nevertheless, the construction of bypass infrastructure will not in all cases be socially inefficient. In certain circumstances, if the duplicate access infrastructure involves particularly low cost construction (lower than the avoidable costs of service provision on the existing network), or if there are external benefits of bypass which are considered extremely high, it may be judged socially efficient for a new access network to be constructed – and for access prices to be set so as not to encourage such investment. These circumstances are likely to apply in the case of competitive transmission routes, such as the high traffic routes between capital cities.

<u>Encouraging economically efficient use of infrastructure</u>

2.18 This aspect of the criterion is directed to the use of existing infrastructure in such a way that provides greatest utility at lowest cost. In the 'HFC exemption' judgement the Tribunal provided guidance on the socially optimal use of infrastructure, stating:

[8] Note that whilst sunk costs are not relevant to the criterion under discussion, they are relevant to other criteria, eg efficient investment by the access provider and the legitimate business interests of the access provider.
[9] *Application by Telstra Corporation Ltd* [2009] ACompT 1 (22 May 2009), at [115-116]
[10] *Application by Telstra Corporation Ltd* [2009] ACompT 1

> *"…by using what might otherwise be excess capacity in the CAN, use of the Relevant Services* [which include the ULLS] *may be likely to lead to more efficient use of the CAN as well."*[11] [explanation added]

2.19 The Tribunal's conclusion in the HFC case that duplication of 'last half-mile' access infrastructure would be socially wasteful was premised on the assumption that the existing infrastructure is likely to have unused excess capacity, as is clear from the following quotation:

> *"There is no suggestion in Telstra's submissions or the s 152AW(4) material to which the Tribunal was directed that Telstra's CAN or its HFC network lack capacity. The infill investment Telstra submits would flow from the exemption would, in effect, be but a duplication of Telstra's CAN and its HFC network. Such duplication of this 'last half-mile' infrastructure, if it were to occur, would, on the face of it, be a socially wasteful investment.*
>
> *Nothing put to the Tribunal convinced it otherwise."* [12]

2.20 Where there is excess capacity, access pricing should be directed towards maximising utilisation of the existing infrastructure. These observations have relevance for the pricing of transmission services, and particularly for services that are delivered over non-competitive transmission routes including low traffic regional routes, tail-end routes and access infrastructure. Access prices on such infrastructure (which is likely to be under-utilised) should be set as low as possible, consistent with the objective that the service provider recovers its actual prudent cost of investment.

2.21 The consequence of this discussion is that a 'replacement cost' pricing approach for transmission services does not encourage economically efficient use of infrastructure. This conclusion is supported by the Competition Tribunal's ULLS undertaking judgement, in which it found that a price estimated by Telstra's cost model "*would not encourage the economically efficient use of Telstra's network…*"[13]

<u>Encouraging economically efficient investment in infrastructure (by access provider)</u>

2.22 This aspect of the criterion is directed to ensuring the access provider has appropriate incentives to carry out future investment in its own network. The Commission has taken the view that an access provider will have the appropriate incentives for future investment if it is able to earn a normal commercial return on efficient infrastructure investments (in the long term).[14]

2.23 At a minimum, access prices must provide compensation sufficient for the access provider to recover prudent network-related costs that have been incurred historically and have not yet been recovered. Investment incentives would be harmed if this level of cost recovery was not assured.

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[11] *Application by Telstra Corporation Ltd* [2009] ACompT 1 (22 May 2009), at [114]
[12] *Application by Telstra Corporation Ltd* [2009] ACompT 1 (22 May 2009), at [115-116]
[13] *Application by Telstra Corporation Ltd* [2009] ACompT 1
[14] ACCC, *Access Pricing Principles – Telecommunications – a guide*, July 1997, p.29

2.24 At least in ordinary circumstances, an access price which does not provide sufficient incentives to the access provider (and other, potential network operators) to maintain existing infrastructure and make necessary and efficient new investments in infrastructure is not in the LTIE.[15] For example, an access price based only on short-run marginal cost, while serving some objectives such as allocative efficiency, may remove the incentive for investment in new and existing infrastructure.[16]

2.25 In Optus' view this aspect of the criterion requires the Commission to take into account the extent to which future investment in the access provider's network would be efficient and would be likely to take place. That is, if circumstances arise such that it would no longer be efficient for the access provider to rebuild or renew its transmission infrastructure, then it would be unnecessary (and counter-productive) to design access prices with the aim of seeking to encourage such investment. In such circumstances, prices should be sufficient only to allow the access provider to recover the costs of its actual past investment (over the economic life of the infrastructure) and its operating costs, together with a normal return on its capital.

2.26 The same argument applies if the access provider will not be required to make continuing investments in existing infrastructure. In the current circumstances, the Commission will need to consider this possibility given that Telstra's role in providing transmission services on some non-competitive routes may be taken over by the NBN Co in the near future. Telstra is unlikely to remain the long term supplier of transmission services given the recent announcement of a deal between Telstra and NBN Co. This agreement will facilitate the reuse of suitable Telstra infrastructure, including backhaul fibre, by NBN Co.[17]

2.27 Optus considers that for the foreseeable future, substantial network investment on non-competitive transmission routes is likely to occur only with the assistance of substantial Government subsidy programs such as the Regional Backbone Blackspots Program. If the ACCC agrees with this view, then access prices for transmission capacity on such routes should be sufficient only to allow the service provider to recover the costs of its actual past investment.

Legitimate business interests

2.28 The Commission is required to have regard to the access provider's "legitimate business interests". In the context of an access price determination, the reference to the carrier's "legitimate business interests" in the Act is to be understood as a reference to "the interest of a carrier in recovering the costs of its infrastructure and its operating costs and obtaining a normal return on its capital".[18] A carrier's legitimate business interest refers to recovering its actual investment, and does not extend to the recovery

[15] ACCC, *Access Pricing Principles – Telecommunications – a guide*, July 1997, p 7
[16] *Seven Network (No 4)* [2004] A Comp T 11, at [136].
[17] Minister for Broadband, Communications and the Digital Economy, "Agreement between NBN Co and Telstra on the rollout of the National Broadband Network," Joint Media Release, 1 June 2010, http://www.minister.dbcde.gov.au/media/media_releases/2010/060
[18] *Telstra Corporation Limited* [2006] ACompT 4 at [89] (referred to with approval in Re *Telstra Corporation Ltd (No 3)* [2007] ACompT 3 at [180].

of costs which were never actually incurred.[19] This is supported by the Tribunal's ULLS undertaking judgement, in which it found that a price estimated by Telstra's cost model *"[would not] reflect Telstra's legitimate business interests, which are to receive a commercial return on its prudent (past) investment in the infrastructure used to supply the ULLS, not a hypothetical new investment…"*[20]

2.29 Asset valuation at replacement cost compensates the service provider 'as if' it had constructed a new modern network, and so provides compensation for 'hypothetical' expenditure that is never actually incurred. It treats the service provider's depreciated network assets as if they were brand new. Replacement cost pricing ignores the fact that the service provider has already recovered much of its original investment, effectively allowing double returns on its investment. The ACCC has recognised this, noting that:

> *"[b]ecause these recovered costs are <u>never</u> taken into account, the period over which Telstra is able to recover its investment costs on these assets is, in effect, never-ending"* [21]

2.30 Optus submits that a 'replacement cost' pricing approach for transmission services (under which prices are set using a cost model which designs a hypothetical transmission network as opposed to compensating the service provider for the costs it has actually incurred) is not consistent with the access provider's legitimate business interests. Rather, an access price which allowed the access provider to recover the unrecovered capital costs of its prudent past investment in the transmission network (plus a normal return on that investment), together with an allowance for any operating and maintenance costs (and any additional, prudent capital expenditure to maintain the service potential of the transmission network) would be consistent with the access provider's legitimate business interests.[22]

Promotion of competition

2.31 The promotion of competition involves creating appropriate conditions or an environment for improving competition from what it would otherwise be.[23] Part XIC is intended to provide *"equality of opportunity for all downstream rivals to compete on the same terms as the vertically integrated infrastructure owner in relation to the costs of supply and access to the infrastructure needed to supply telephony and broadband services"*.[24]

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[19] Provided the access provider is efficient, it would not be in its legitimate business interests if the level of access prices required its shareholders to make a sub-normal return on the investment in the network. However, it is also necessary to consider whether the transmission access price might permit the access provider to make an above-normal return. The access provider's "legitimate business interests" do not extend to extracting monopoly rent for the transmission network or receiving a price that reflects the value of the transmission network derived from its natural monopoly characteristics.

[20] *Application by Telstra Corporation Ltd* [2009] ACompT 1

21 ACCC, National broadband network: Regulatory reform for 21st century broadband, Submission to the Department of Broadband, Communications and the Digital Economy, June 2009, p30

[22] Note that this is the same level of recovery as that which would be consistent with encouraging efficient investment in infrastructure by the access provider.

[23] *Telstra Corporation Limited v Australian Competition Tribunal* [2009] FCAFC 23 at [224]; quoted with approval in *Application by Telstra Corporation Limited* [2009] ACompT 1 at [10]

[24] *Application by Telstra Corporation Limited* [2009] ACompT 1 at [44]

2.32 In the context of access pricing, competition is promoted where service providers face equivalent costs for access to the declared service. [25]

2.33 The implications of this point are that setting an access price which is higher than the access provider's actual (long run) costs (including capital costs that have not already been recovered) would give the access provider a competitive advantage over the access seekers and stifle competition in the provision of listed services to end-users.[26] In such circumstances the access provider could price its retail services at a level at or below the access price without jeopardising its own capacity to make a profit.

2.34 Consequently, in order to promote competition, access prices should be set at a level sufficient only to allow the access provider to recover the costs of its actual past investment infrastructure which have not already been recovered and its operating costs and obtain a normal return on its capital.

2.35 Optus submits that an access price which allowed the access provider to recover the unrecovered capital costs of its prudent investment in the transmission network (plus a normal return on that investment) together with an allowance for any operating and maintenance costs and any additional, prudent capital expenditure to maintain the service potential of the transmission network would promote competition.

Certainty

2.36 Replacement cost pricing involves a cost modelling exercise which is subject to numerous uncertainties over parameters and assumptions employed, each of which is typically contentious. There can be a large variation in the resulting access price estimates. This approach creates significant variation in asset value resulting in uncertainty over the level of the access price in each regulatory period. As CEG has concluded:

> *The existing approach under Part XIC re-values existing assets annually (or every few years) using a highly ambiguous methodology for estimating the cost of replacing those assets today. The regime creates significant regulatory uncertainty for access provider and access seekers to the ultimate harm of end users because it provides very little certainty on either (a) or (b) above. The value placed on the existing assets can change dramatically from one period to another despite the costs actually incurred in building those assets being*

[25] There is a connection between the objective of promoting competition and the interests of persons who have rights to use transmission services. The interests of access seekers (that is, persons who have a right to use a declared service) are "served by an access price that enables them to compete on their merits (that is, on the basis of their own efficiency) in downstream markets". *Telstra Corporation Limited* [2006] ACompT 4 at [138]; cited with approval in *Re Telstra Corporation Ltd* (No 3) [2007] ACompT 3 at [262]

[26] This assumes that the reference to costs that an access provider "would need to recover… to remain viable" is a reference to costs *actually incurred* by the access provider (as opposed to costs determined by reference to 'market prices' for the assets involved). This assumption is reasonable, given the reference to viability. It is also reasonable since there is no functioning market for the natural monopoly access network assets involved (indeed this is the very reason the services produced by the CAN are regulated). Further, any attempt to derive a 'market price' for the transmission network based on the income stream able to be generated falls foul of circularity – since that income stream depends on the prices set in these very regulatory proceedings (a point recognised by the ACCC in its 1999 Draft Statement of Principles for the Regulation of Transmission Revenues (page 39)).

> *unchanged. This causes large fluctuations in prices from one period to the next, which are associated with windfall gains and losses to the relevant parties (eg, windfall gains to access providers when prices rise unexpectedly and vice versa). This source of uncertainty over the regulatory price is unnecessary and also counterproductive to any objective of encouraging efficient investment in infrastructure.*[27]

2.37 Optus submits that locking in a value for the regulated infrastructure assets on non-competitive routes,[28] rather than the current approach of continually re-valuing the assets, would create more certainty both for the access provider and for access seekers. As CEG has concluded:

> *The NPV=0 rule could be achieved by locking-in an initial DORC valuation of existing monopoly assets and predictably rolling-forward that value for net capital expenditure. This would significantly increase regulatory certainty for both the access provider and access seekers in contrast to the current regulatory regime.*[29]

2.38 Increased certainty would improve the level of comfort of both the access provider and access seekers that they would be able to recover the cost of their sunk investments. Consequently, Optus submits that improved certainty would assist all parties to make efficient decisions regarding future investment and general business plans.

Conclusion

2.39 In this section Optus has demonstrated that a 'replacement cost' approach to asset valuation is inconsistent with the legislative criteria, and is not an appropriate basis for a pricing methodology for transmission capacity services, particularly on non-competitive routes. Further, Optus has argued that an access price which allowed the access provider to recover the unrecovered capital costs of its prudent past investment in the transmission network (plus a normal return on that investment), together with an allowance for any operating and maintenance costs, would be consistent with the legislative criteria.

2.40 Such an access price should be based on the valuation of assets using the Depreciated Actual Cost (DAC) method. The depreciated actual cost (DAC) is the value of the original cost of acquisition or rollout of the infrastructure, *adjusted* for the proportion of costs that have been recovered (past compensation). Optus submits that the Depreciated Actual Cost (DAC) method is an appropriate methodology for valuing infrastructure for the purposes of pricing transmission capacity services on non-competitive routes.

2.41 Optus notes that DAC is a simple and transparent method which does not involve complex models of efficient network design. Further, the regulator needs more than a range of possible values: it must choose a particular asset value. The written down audited book value of the service provider's

27 CEG, *Reform of Part XIC: Regulatory Certainty*, June 2009, p.2.

28 'Locking in' the RAB would involve establishing an initial asset valuation at the commencement of the regulatory regime (i.e. the 'opening' RAB) and 'roll-forward' that value in the next regulatory period with the objective of achieving NPV=0. Past depreciation of the existing assets will be taken into account in each regulatory period.

29 CEG, *Reform of Part XIC: Regulatory Certainty*, June 2009, p.2.

infrastructure assets provides such a value, calculated in accordance with generally accepted accounting principles.

2.42 The written down book value of the service provider's network assets is likely to be consistent with cost recovery by the service provider. In this regard, Optus notes the ACCC's view that the "*backward looking perspective (historic/actual costs) provides more certainty with regard to investment cost recovery…*"[30]

2.43 Optus submits that the ACCC should value the service provider's sunk assets according to the DAC methodology, using the written down book value, since it is a method which is simple and transparent and results in values that are consistent with cost recovery, fairness to investors and the other legislative criteria. Application of a Depreciated Actual Cost ("DAC") Pricing Principle will:

- enable the service provider to recoup its prudent investment in the network assets;
- enable access prices to be clearly linked to actual costs incurred or likely to be prudently incurred: and
- be clear, transparent and practical (capable of being implemented).

2.44 A pricing approach for transmission capacity services based on DAC is discussed further in section 5.

[30] ACCC, *Assessment of Proposals – national broadband network process*, A report to Expert Panel, Appendices, Public Version, January 2009, p.64 cited in ACCC, *National broadband network: Regulatory reform for 21st century broadband*, Submission to the Department of Broadband, Communications and the Digital Economy, June 2009

3. Issues Relevant to DTCS Pricing

3.1 The Commission has noted that there are a number of general factors which will affect the pricing of the DTCS, including network structure and the level of resilience, and the allocation of common costs.[31] In this section Optus discusses each of these general factors in turn.

3.2 In summary, Optus submits that transmission pricing should be reflective of costs that take into account the requirements of end users; that is, the service should not in general be priced at levels which reflect premium requirements beyond the typical access seeker's required grade of services.

Network structure and the level of resilience

3.3 The Commission notes that *"Routes that fall under the current DTCS declaration tend to be characterised by a 'ring structure'. This involves a 'worker' path (which carries the traffic) and a 'redundant' path (which provides protection) between two locations through the availability of at least two geographically distinct transmission paths."*[32]

3.4 However,

> *"The DTCS declaration does not distinguish between worker and redundant paths. DTCS pricing can therefore either be based on either Telstra's current DTCS network infrastructure or one which is a combination of point-to-point and ring based-links. Given that access seekers may need to purchase separate transmission links and will require switching in the event of a failure to promote network quality, reliability and resilience, the ACCC is of the preliminary view that* ***efficient pricing of transmission services must provide for a resilient network structure including the availability of redundant paths, particularly on regional backhaul routes****. As such, the ACCC considers a pricing mechanism that encourages investments in networks with ring structures to be desirable."* [33] **[emphasis added]**

What grade of network do service providers and businesses require?

3.5 The grade of network requirements should be considered from two perspectives. First, the needs of consumers will invariably differ from those of business customers. Second, access seekers should be given the option to choose between protected and non-protected services. Optus submits that different prices should apply for:

(a) consumers as opposed to business customers, on the basis of differences in service level requirements; and

(b) non-protected as opposed to protected routes.

[31] In addition, as the Commission is yet to finalise its recent inquiry into the Proposed Variation to the DTCS service description and recognition of the emergence of Ethernet as an industry standard, this will also have implications on the pricing of the DTCS.
[32] ACCC, *Domestic transmission capacity service*, Discussion Paper, April 2010, p.9
[33] ACCC, *Domestic transmission capacity service*, Discussion Paper, April 2010, p.10

Uniformity of service (eg. contention, availability)

3.6 Optus submits that different prices should be determined for consumers as opposed to business customers on the basis of service level requirements. This is important given the implications of increased demand for data applications by end users and the subsequent impact on backhaul infrastructure, in respect of which the Commission has commented that:

> *"Depending upon the applications being used by customers it is normal to expect customers to not be using the full potential rate of the backhaul connection 100 per cent of the time. … This is often referred to as the 'contention ratio'.*[34] *Contention ratios of 1:10 to 1:100 are not unusual."* [35]

3.7 This has several implications for access seekers, particularly with respect to the efficient use of infrastructure. For example, a transmission service using SDH technology is deterministic so there is no issue of contention. As such, the service levels (or service level assurances, SLAs) can be more appropriately defined in terms of reliability/availability and 'mean time to repair' (MTTR).

3.8 Availability SLAs refer to the level of resilience provided for in transmission leases. These represent the availability targets access seekers can expect from suppliers when they lease transmission services, in terms of the period of expected outage in the event of a fault.[36]

3.9 In contrast, the MTTR metric can be used to indicate the time required to rectify a fault. In general, it is a function of operational and maintenance costs and will include components for travel time to site and time required for repair. However the MTTR is normally considered in terms of the latter component.

3.10 Hence,

> *"A key implication of the selected contention ratio is the required capacity of the backhaul transmission link and the scale of the core IP network.* ***The level of capacity can have very significant impact on network cost****, meaning that the contention ratio is a matter of trading-off cost versus customer capability."* [37] **[emphasis added]**

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[34] The contention ratio is the ratio of the potential maximum demand to the actual bandwidth, given the maximum rate possible over each access user's access line. The higher the contention ratio, the greater the number of users that may be trying to use the actual bandwidth at any one time and, therefore, the lower the effective bandwidth offered per user, especially at peak times. As cited in ACCC, *Assessment of Proposals: National Broadband Network – Report to Expert Panel* , Appendices, January 2009, p.203

[35] ACCC, *Assessment of Proposals: National Broadband Network – Report to Expert Panel* , Appendices, January 2009, p.203

[36] In the event that the access seeker may want additional service assurances, this can be purchased from the suppliers as an enhanced SLA. An enhanced SLA can be purchased to obtain a higher availability SLA and mitigate business risks for customers with mission critical requirements, however the costs incurred to achieve this is high. If required, this work will be long term and a premium will be charged to obtain the higher availability including the costs required to upgrade the existing service

[37] ACCC, *Assessment of Proposals: National Broadband Network – Report to Expert Panel* , Appendices, January 2009, p.203

3.11 It follows that where there is significant impact when a transmission link is down, Optus would expect a determined level of availability of service and MTTR to be satisfied in fault restoration. This may also involve higher availability or enhanced SLAs in the case of business and enterprise customers.

Reliability of service (eg. redundancy)

3.12 Optus submits that access seekers should be given the option to choose the reliability of service available along selected transmission routes. This will promote competition by allowing access seekers to choose the service level that best suits their needs, while also encouraging the most efficient use of infrastructure. As such, the pricing of all transmission services should not be burdened with the costs of a protected service, particularly given that protected services are not required in all cases.

3.13 A highly reliable service may be achieved under a number of network architectures. It can be achieved by using a number of protected (redundant) or non-protected (non-redundant) network configurations.

3.14 The Commission recently acknowledged that with respect to redundancy, *"a feature of transmission networks is the ability to provide a protected transmission service through the availability of at least two geographically distinct transmission paths between the points of transmission. However, where geographically distinct paths are operated by different providers the ACCC's view is that redundancy can be provided on a point to point network by an access seeker purchasing services from different providers. The ACCC is aware through industry inquiries that in practice a protected transmission service is obtained in this way."* [38]

3.15 There are several options access seekers can choose to provide reliability/availability of service. Redundancy as described by the Commission is based on path diversity, where there are separate but distinct routes between two points. It is also possible for redundancy to be provided along a single route (or 'folded ring') which involves resilience being supplied along the same route.

3.16 The majority of transmission routes are currently supplied as protected routes, with the exception of 'tail-end' routes which are generally unprotected. This difference in the applicability of redundancy to different transmission types supports the observation that different service levels should be taken into account, for example while the majority of 'tail-end' routes are unprotected, the only exception to this occurs when the end-user requires a business grade 'tail-end' service.

3.17 In contrast the need for resilience along long backhaul routes is generally accepted because any fault along that route is likely to impact on a large number of customers. However this should not imply that redundancy should be provided by the same access provider, rather it should be equally possible for access seekers to purchase two non-redundant routes and control their own level of resilience in their network.

[38] ACCC, *Telstra's domestic transmission capacity service exemption applications*, Final Decision, Public Version, November 2008, p.74

3.18 As noted above, the level of protection can also be represented in terms of availability SLAs. In addition to providing a period of expected outage in the event of a fault, it can also be used to identify the type of network architecture and level of resilience available..

3.19 Resilience is further subject to interpretation by access providers, and can be provided in several forms. It follows that where an access seekers requires higher service availability for mission critical uses (eg. business grade 'tail end' services), this may also incur an additional charge for any electronics and power redundancy required. As such, a fully protected service (with 99.99% service availability) is likely to have full path diversity (usually a ring structure) with interface protection.

3.20 The following summarises the general resilience categories for Optus' wholesale transmission offerings: **CiC**

3.21 Optus' suppliers generally provide availability targets of 99.95%[39] (which represents the expectation that an outage would be restored within a 48 hour timeframe) or better in their respective contracts with Optus. This is not outside the current level of industry norm. In addition, most suppliers offer the option for protected and non-protected routes, with the notable exception of Telstra which only offers the option for protected routes (where a standard offering includes **CiC**).

3.22 As such, Optus considers that access seekers should be given the option to choose between protected and non-protected routes. Therefore any pricing of transmission services should not be burdened with the costs of a protected service, particularly given that protected services are not always warranted.

3.23 It follows that the pricing of transmissions services should not as a general rule reflect the costs of a protected service since this would not promote competition or encourage the efficient use of infrastructure. Rather this would lead to an over-recovery of costs along certain routes, which distorts efficiency by discouraging the efficient use (utilisation) of the infrastructure.

Point-to-point and ring structures

Should the ACCC seek out to cost and set regulatory prices for DTCS based on ring structures, point-to-point links or some other network design?

3.24 As noted in section 2, Optus considers that a replacement cost pricing approach based on modelling a hypothetical network design is not an appropriate approach. Nevertheless, to the extent that the ACCC does decide to consider an efficient network design, Optus submits that the network design for DTCS should primarily be based on point to point links, with the exception of (fibre) ring structures in CBD areas. In general, Optus considers ring structures are an efficient network configuration for CBD areas because such structures allow the flexibility to carry both single path non-protected traffic and path-protected traffic along the dimensioned network structure, which then caters for businesses that require full redundancy. The only

[39] The only exception Optus would consider is where the supplier provides a single path for use as a diverse link. In this case, a 99.45% availability target will be accepted.

exceptions in CBD areas are the last sections of the lead-in cable to the building, which are all point to point links.

3.25 Typically a large transmission network will be made up of both 'ring' and 'point to point' systems. The balance between the degree of ring and point to point architecture used will ultimately depend upon the maturity of the network and the density of services along a route.

3.26 Point-to-point systems are often used between major exchanges. Routes are likely to have high capacity (e.g. 2.5Gbs or 10Gbs) and high utilisation with no intermediary drop points between the end points. In contrast, a ring topology will be used to connect multiple regional sites along a route and is often employed at start up to minimise capital expenditure and increase utilisation levels.

3.27 Frontier in its review of the GQ-AAS model noted a number of conditions where a ring topology is appropriate[40] however it also stated that "*These conditions would be likely to apply only in some circumstances. In most networks, there are multiple paths that may appear to be ring models but in reality are a series of point-to-point links with different dimensions for each.*" [41]

3.28 Optus submits that costing of transmission services on the basis of a pure ring topology will have the potential to over-estimate the efficient cost of providing the transmission service. Frontier also recognised this scenario, noting that:

> *"In such circumstances, the cost of offering a guaranteed redundant path would be very high and, in reality, the access seeker would probably seek to get around such problems by purchasing lower quality redundancy. Often there is contention, so that should there be a break in the primary link, the full bandwidth may not be offered in the disaster recovery mode."* [42]

3.29 As such, while ring structures may have short term cost benefits, a point to point network structure will be more efficient for long term capacity management because it is easier to upgrade or reconfigure in a way that minimises impact on other customers connected to the network. The most efficient network configuration for the majority of current transmission network architecture is and will continue to be physical point-to-point structures.

Allocation of common costs

3.30 The Commission notes that: *"Assets and infrastructure are shared across routes and there is a high level of fixed and sunk costs (and low incremental costs). … Prices also need to provide for allocation of common costs to other*

[40] Frontier, *Peer review of the GQ-AAS model of transmission capacity services*, A report for the ACCC, August 2007, p.4
[41] Frontier, *Peer review of the GQ-AAS model of transmission capacity services*, A report for the ACCC, August 2007, p.4
[42] Frontier, *Peer review of the GQ-AAS model of transmission capacity services*, A report for the ACCC, August 2007, p.5

telecommunication services (such as fixed services and mobile backhaul) which use the same infrastructure." [43]

3.31 It goes on to note that,

> *"… appropriate cost allocation is a major issue in efficient cost recovery and sending the correct build/buy market signals (where appropriate)."* [44]

How should the ACCC allocate costs between competitive and non-competitive routes, declared and non-declared routes?

3.32 Transmission infrastructure on non-competitive routes (such as tail-end transmission links and single provider backhaul routes) should be treated as natural monopoly infrastructure. Optus considers that the consequence of this approach is that common costs should be allocated to competitive routes and non-competitive routes should not have to bear any common costs.

3.33 This approach would lead to better efficiency and cost recovery outcomes for several reasons.

3.34 First, the likelihood of overbuild along non-competitive routes is minimal given the presence of high barriers to entry. The Commission recognises that:

> "*the barrier to entry into the transmission services market is high and there is likely to be spare capacity in current networks. It is apparent, particularly in the tail-end transmission market, that there is little prospect of entry.* ***The ACCC considers that where there is no prospect of entry, it is unnecessary to send a build/buy signal****. Utility-style pricing based on the Regulatory Asset Base (RAB) approach may be more appropriate in these circumstances."* [45] **[emphasis added]**

3.35 Optus agrees with these observations. In general, the majority of recent backhaul transmission infrastructure investments have been stimulated by external factors, in particular the NBN Regional Backhaul Blackspots Program (RBBP).

3.36 Second, given the limited demand for transmission services along non-competitive routes, it remains in the LTIE to encourage greater utilisation along such routes – with respect to both cost recovery and efficient use of infrastructure objectives.

3.37 Consequently allocating common costs to competitive routes only would promote the efficient use of infrastructure along non-competitive routes – particularly in regional areas where alternative service providers have been slow to establish, and compete against the incumbent operator. Accordingly, the Commission should allocate common costs to competitive routes and not to non-competitive routes.

How should the ACCC allocate costs that use the same infrastructure for mobile backhaul, fixed services and transmission services?

[43] ACCC, *Domestic transmission capacity service*, Discussion Paper, April 2010, p.11
[44] ACCC, *Domestic transmission capacity service*, Discussion Paper, April 2010, p.11
[45] ACCC, *Domestic transmission capacity service*, Discussion Paper, April 2010, p.11

3.38 Optus considers that a traffic-based cost allocation across services using the same infrastructure could be taken into account to the extent that such an approach does not conflict with the position on common costs set out above.

Is it appropriate for the ACCC to adopt different regulatory pricing methodologies for 'tail' segments and 'trunk' segments of the transmission network?

3.39 The EU currently defines the 'tail' and 'trunk' segments of the transmission network to be separate market segments, noting that:

> *"At the wholesale level, it is possible to distinguish separate markets, in particular between the terminating segments of a leased circuit (sometimes called local tails or local segments) and the trunk segments. What constitutes a terminating segment will depend on the network topology specific to particular Member States and will be decided upon by the relevant NRA.*
>
> *While many trunk segments on major routes are likely to be effectively competitive in certain geographic areas in Member States, other trunk segments may not support alternative suppliers..."* [46]

3.40 This highlights that even within the 'trunk' segments of the transmission network, there remain both competitive and non-competitive routes, which again raises the issue that "*where there is no prospect of entry, it is unnecessary to send a build/buy signal.*" [47]

3.41 Furthermore the EU recognises the transmission network boundaries can be delineated where:

> *"The terminating segments of leased lines cover circuits between client site and the first network node, whereas trunk segments are the backbone linking the terminating segments.*" [48]

3.42 Translated into the current Australian context, the 'terminating' segments (or 'tail' segments) correlate to the Commission's service description for tail-end transmission services, while the 'trunk' segments refer to the broader range of transmission services.[49]

3.43 Optus considers there is scope for the Commission to adopt different regulatory pricing methodologies for the 'tail' and 'trunk' segments of the transmission network; however the over-riding classification between transmission services should be the following two broad categories:

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[46] EC, *Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications network and services (second edition) {C(2007) 5406}*, Explanatory Note {SEC(2007) 1483/2}, 13 November 2007, p.38

[47] ACCC, *Domestic transmission capacity service*, Discussion Paper, April 2010, p.11

[48] EUROPA, "Telecommunications: Commission requests more market data before assessing draft regulatory measures for the German wholesale leased lines markets," Press Release {IP/06/1304}, 4 October 2006, http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/1304 [accessed 4/5/10]

[49] This also aligns with Optus' current classification of transmission services where IEN includes all inter-capital, capital-regional and inter-exchange transmission routes. Tail-end transmission routes are from the local exchange to the customer site, however when Optus purchases tail-end transmission leases from Telstra these may traverse multiple exchange sites from the Optus network to the customer site.

competitive (such as high traffic 'trunk' segments) and non-competitive (including low traffic 'trunk' segments and 'tail' segments). Routes that are judged to be competitive are removed from the scope of price regulation, through either a review of the scope of declaration or an exemption process. Non-competitive transmission routes should be priced in order to promote competition on the route and maximise utilisation of the infrastructure.

3.44 This is further discussed in Section 4 of this submission.

What level of spare capacity is available within the current transmission network configurations? How should future capacity be accounted for in network cost calculations?

3.45 As noted in section 2, Optus considers that a replacement cost pricing approach based on modelling a hypothetical network design is not an appropriate approach. Nevertheless, to the extent that the ACCC does decide to consider an efficient network design, Optus submits that transmission networks should only be costed and dimensioned for currently forecast demand. This is supported by the following considerations.

3.46 Firstly, Telstra is unlikely to remain the long term supplier of transmission services given the recent announcement of a deal between Telstra and NBN Co. This agreement will facilitate the reuse of suitable Telstra infrastructure, including backhaul fibre, by NBN Co.[50]

3.47 Second, Frontier has identified congestion to be a potential cost driver for transmission service. It considers that the presence of excess capacity or congestion could be considered inefficiency in the operation of the transmission networks. The scenario for excess capacity may arise because *"Access providers make decisions about capacity well in advance of that capacity actually being used, and the access provider knows that the incremental cost of adding capacity later (such as adding fibre to trenches or additional multiplexing equipment to exchanges) can be very costly relative to adding it to begin with. The decision will therefore be weighted towards adding the capacity in advance, even if there is a relative small probability of that demand actually materialising."* [51] However within the context of a competitive market, this decision to build additional capacity is generally a risk that is borne by the access provider (however it is likely to also be mitigated as result of prudence checks and formation of a suitable business case for the investment).

3.48 Frontier similarly concludes that the case for congestion (or excess demand) is also unlikely to arise in practice because *"there is rarely likely to be excess capacity on a given fibre route that is not able to be met by adding extra electronics to the route to be able to 'light-up' fibre or to add extra wavelengths."* [52]

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[50] Minister for Broadband, Communications and the Digital Economy, "Agreement between NBN Co and Telstra on the rollout of the National Broadband Network," Joint Media Release, 1 June 2010, http://www.minister.dbcde.gov.au/media/media_releases/2010/060

[51] Frontier Economics, *Economics of transmission capacity services*, A report for the ACCC, June 2009, p.24

[52] Frontier Economics, *Economics of transmission capacity services*, A report for the ACCC, June 2009, p.24

3.49 As such, Optus submits that transmission networks should only be costed and dimensioned for currently forecast demand.

4. Setting Prices for Transmission Services

4.1 This section Optus sets out its position on cost drivers for transmission capacity services. In general, the cost of serving a transmission route will depend on a number of factors, including but not limited to distance and capacity.

4.2 Whilst there are a number of potentially valid alternative categorisations for transmission services (including "tail" or "terminating", and metro/regional), Optus submits that the most important distinction is that between competitive and non-competitive routes. On non-competitive routes, regulated prices should be set with the objective of maximising utilisation of existing infrastructure and promoting competition. Quite different considerations apply to competitive routes, which in any case are unlikely to remain subject to declaration.

Cost drivers

4.3 The Commission has made a number of broad observations on transmission pricing in Australia, surmising in the following two key observations:

i) "*connection charges vary by capacity, but increase at a diminishing rate with respect to capacity, and*

ii) *annual charges vary both by capacity and radial distance of the transmission link. Distance charges tend to increase at a diminishing rate with respect to radial distance for longer routes but display a more linear relationship with respect to very short routes."* [53]

4.4 It goes on to note that:

> *"Access seekers will require access to transmission routes along both declared and non-declared routes. Non-declared routes will have at least three fibre providers. Declared routes may have one or two fibre providers. Any regulated pricing approach will have to be cognisant that some declared routes may be subject to some (although limited) competitive entry and pricing pressure."* [54]

Are capacity and distance the critical cost drivers for transmission services?

4.5 Frontier has considered capacity and distance to be the significant cost drivers for the DTCS.[55] Frontier also notes a number of other factors including service volumes, bundling of wholesale services, length of contract and congestion[56] as other potential cost drivers for transmission services.

[53] ACCC, *Domestic Transmission Capacity Service*, Discussion Paper, April 2010, p.13
[54] ACCC, *Domestic Transmission Capacity Service*, Discussion Paper, April 2010, p.14
[55] Frontier Economics, *Economics of transmission capacity services*, A report for the ACCC, June 2009, pp.19-22
[56] Frontier Economics, *Economics of transmission capacity services*, A report for the ACCC, June 2009, pp.23-24

4.6 The European Commission similarly has recognised a number of cost drivers for transmission services. For example, in the EU Recommendation's Explanatory Memorandum,[57] it refers to transmission capacity as *"dedicated connections and capacity (leased lines),"* for which the following key elements are identified:

> "*The key elements in the demand for and supply of dedicated connections are service guarantees, bandwidth, distance and the location or locations to be served. There may also be qualitative characteristics because in some cases distinctions are still made between voice grade and data grade circuits."* [58]

4.7 Optus also notes that in practice a significant influence on commercial pricing of transmission capacity is contract length. At a basic level, the owner of a fibre link recovers its costs through sales of capacity. If it sells capacity to customers via relatively short contracts (eg. one year) there is (i) a reduced period over which is can recover its costs and (ii) potentially a risk that it will never recover its costs, especially if there is no rollover of the service (contract renewal). In this way the price of longer term contracts (eg. 3 to 5 years) will generally be discounted as the seller has a longer period over which it can recoup costs and therefore a lower risk of under-recovery.

4.8 Other factors that may affect cost are redundancy and SLAs, as discussed in section 3.

4.9 It follows that the cost of serving a transmission route will depend on a number of factors, including but not limited to distance and capacity.

Are fixed connection charges an appropriate method to recover costs?

4.10 Optus submits that fixed connection charges can be an appropriate method to recover costs but only if they are appropriately set.

4.11 In general the industry norm is to pay some form of connection charge for new services; however these charges may vary depending on the transmission supplier and/or the lease duration.

4.12 In Optus' experience, Telstra's connection charges are significantly higher than other transmission suppliers and require a minimum term of one year for each service. In some circumstances, Telstra also charges a special linkage charge in addition to its standard connection charges. This combination of charges and minimum duration is not justified, particularly given that due to the high capital costs involved it may be unreasonable for access seekers to pass through these costs to their end customers.

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[57] EC, *Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications network and services (second edition) {C(2007) 5406}*, Explanatory Note {SEC(2007) 1483/2}, 13 November 2007

[58] EC, *Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications network and services (second edition) {C(2007) 5406}*, Explanatory Note {SEC(2007) 1483/2}, 13 November 2007, p.38

Are distance based charges appropriate? If so, on what basis should distance charges be calculated (eg. actual distance, radial distance or by geographic region)?

4.13 Optus considers that there is a relationship between costs and distance but that this relationship is not clear, as a result of technical factors and market dynamics.

4.14 Technical factors often dramatically increase build costs by essentially adding upward step-functions to the cost curve. For example, the need to build repeaters to boost the signal along long cable routes, and the need to power such repeaters using solar power and/or generators (which are especially costly in remote areas and inland links).

4.15 The incremental costs required to provide services along long backhaul routes and to support spurs along those routes will significantly add to build costs, and it is Optus' experience that fixed costs outweigh the variable costs of fibre by a significant proportion.

4.16 Similarly, a 'one size fits all' based on an averaged cost approach to pricing may fail to properly account for the variations in costs and benefits along all transmission routes. The Commission should ensure that actual costing is based on the most efficient architecture applicable to particular routes and services (to the extent that the ACCC does decide to consider an efficient network design).

4.17 Therefore although clearly the length of the link is likely to be a factor, it is evident that other factors also have a significant influence.

Should regulated prices vary between transmission service types (eg. tail-end and inter-exchange transmission)?

4.18 Optus considers there is scope for the Commission to set regulated prices that vary between different transmission types; however the over-riding classification between transmission services should be between competitive (such as high traffic inter-exchange transmission) and non-competitive (including low traffic inter-exchange segments and tail-end transmission). Routes that are judged to be competitive are removed from the scope of price regulation, through either a review of the scope of declaration or an exemption process. Non-competitive transmission routes should be priced in order to promote competition on the route and maximise utilisation of the infrastructure.

4.19 It has continually been highlighted that tail-end transmission links are non-competitive. The Commission has concluded that *"… Telstra, even if it does not supply 100 per cent of the buildings in a CBD, is still the dominant provider of connections to tail-end transmission customers."* [59]

4.20 This is supported by the EU's continued recognition that:

> *All Member States (CY, ES, CZ, LT, EL, FR, SK, MT, SI, NL, IT, DK, SE, HU, PT, IE, AT, FI, UK) that so far have notified the wholesale*

[59] ACCC, *Telstra's domestic transmission capacity service exemption applications*, Final Decision, Public Version, November 2008, p.72

terminating segments for leased lines markets, found the market (including leased lines above 2 Mbit/s) not to be competitive." [60]

4.21 NBN Co similarly recognises the monopolistic nature of 'tail end' transmission, and considers there should only be a single access line per premises served because allowing direct access to the fibre exchange (that is, bypass of the NBN Co transit service) would not provide a level competitive playing field. This approach would be in the LTIE as it encourages an efficient network configuration with no overbuild, which promotes the efficient use of infrastructure particularly on non-competitive routes.

4.22 Optus further notes that the Commission has similarly noted that the lack of demand and supply substitutability between these two services also provides a valid case for this distinction.[61]

4.23 It follows that there is the potential for different pricing methodologies and subsequently different indicative prices to be applied for the different transmission service types.

Should regulated prices for transmission vary between different regions (eg. metropolitan and regional)?

4.24 Optus considers there is scope for the Commission to set regulated prices that vary between different regions; however the over-riding classification between transmission services should be between competitive (such as high traffic metropolitan routes) and non-competitive (including low traffic regional routes and tail-end transmission).

4.25 As the Commission has previously stated, *"Given that competition is developing unevenly across different geographic regions, future regulatory decisions should be based on robust geographically delineated empirical data.*[62]

4.26 The majority of regional routes are non-competitive and this is unlikely to change due to high barriers to entry. It follows that it would be in the LTIE for non-competitive routes in regional areas to be priced in order to promote competition on the route and maximise utilisation of the infrastructure. Again, Optus considers that similar issues raised in Section 2 and Optus' discussion on competitive and non-competitive routes will equally apply in this context.

What type of pricing relationship should exist between distance and capacity?

4.27 Optus considers that there is a relationship between distance and capacity, however this is not a clear relationship for all transmission types, given its dependence on the incremental costs of equipment required over longer transmission routes.

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[60] EUROPA, "Telecommunications: Commission requests more market data before assessing draft regulatory measures for the German wholesale leased lines markets," Press Release {IP/06/1304}, 4 October 2006, http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/1304 [accessed 4/5/10]
[61] ACCC, *Telstra's domestic transmission capacity service exemption applications*, Final Decision, Public Version, November 2008, p.37
[62] ACCC, *ACCC infrastructure record-keeping rule 2007 – Regulation impact statement*, December 2007, p.7

4.28 In the 2004 DTCS pricing principles review, the Commission acknowledged that *"it is aware that transmission prices usually take the form of a logarithmic function to reflect the quantity/capacity purchased. That said, the Commission does not have the necessary information to derive appropriate price ratios. As such, this is an issue the Commission will need to consider in an arbitral context."* [63]

4.29 There is currently no observed general price ratio for the distance and capacity requirements for different transmission types; however a greater distance does require a greater investment in fibre and the additional equipment required. It should be noted that once fibre is in the ground its capacity can be upgraded by changing the transmission equipment.

Would prices set according to a trunk/terminating segment approach be more appropriate?

4.30 'Terminating' segments (or 'tail' segments) correlate to the Commission's service description for tail-end transmission types, while 'trunk' segments refer to the broader range of transmission types. A number of characteristics of trunk/terminating segments are summarised in the table below.

	'terminating' segment	**'trunk' segment**
Transmission types as per DTCS service description	Tail-end	Inter-capital; Inter-exchange; Other (Capital-regional)
Transmission end-to-end link	Customer site to IEN (ie. last mile)	Largely backhaul links between POIs and network nodes (ie. local exchanges)
Level of competition	Non-competitive	Competitive and non-competitive
Network structure	Point-to-point only	Point-to-point and ring structure (in CBD areas only)
Level of resilience	Non-redundant only	Redundant and non-redundant
Geographic regions	Metro and regional	Metro and regional

4.31 Optus notes that the following recognition made by the EU between the 'trunk' and 'terminating' segments is equally valid in the Australian context:

> *"In relation to terminating segments, the existence of high and non-transitionary entry barriers and the absence of a tendency towards effective competition across the EU are more obvious.* ***Often the terminating segments of leased lines rely in some form or another on the former incumbent's ubiquitous access network. The control over that ubiquitous access network continues to provide the incumbent with a legacy advantage on the terminating segments of the leased line market*** *that new entrants, across the EU have not yet overcome.*

[63] ACCC, *Pricing principles for declared transmission capacity services*, Final Report, September 2004, p.29

Even more than with trunk segments, there is little dynamic towards effective competition and competition law cannot alone address the failures on the trunk segments market." [64] **[emphasis added]**

4.32 As discussed in Section 3, Optus considers there is scope for different pricing methodologies (hence different indicative prices) to be applied using the 'trunk' and 'terminating' segment approach, subject to the over-riding competitive/non-competitive distinction. Non-competitive transmission routes (both 'trunk' and 'terminating' segments) should be priced to promote competition on the route and maximise utilisation of the infrastructure.

Pricing structure

What are the main types of transmission charges (eg. are there connection/disconnection charges, special charges, monthly charges or annual charges)?

4.33 The current structure for transmission charges include:

- Connection charges based on the capacity connected, and no disconnection charge;
- Special linkage charges which occurs when Telstra's network infrastructure is extended or they undertake any trench, duct or cabling work between the property entry point and the network boundary, or undertake any work beyond the network boundary;
- Annual rental charges invoiced on a monthly basis (however these remain subject to a one year minimum term); and
- Enhanced service assurance fees (optional).

Are transmission products typically purchased as specific point-to-point links or as part of a bundle? If the latter, then what products are typically included in the bundle(s)?

4.34 Transmission products are generally purchased as both point-to-point links or as part of a bundle – however this is dependent on the type of transmission link and also needs to take into account the presence of redundant routes.

4.35 A bundled transmission product generally refers to a product arising from separate negotiated arrangements between the access seeker and the access provider. In general, this may involve the purchase of transmission services at a price which deviates from the access provider's standard pricing tables.

4.36 Bundled deals often involve longer term, high capacity routes such as the **CiC** transmission routes. In general, these routes often involve long term commitments and are commercially negotiated. Furthermore due to the nature of long term commitment, this may provide access seekers with an

[64] EC, *Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications network and services (second edition) {C(2007) 5406}*, Explanatory Note {SEC(2007) 1483/2}, 13 November 2007, p.39

opportunity to introduce discounts or additional SLAs during the negotiation process.

Do transmission prices vary according to capacity, distance, some other factors (please specify), or a combination (please specify) of different factors? If so, how?

4.37 Transmission prices currently vary according to capacity and radial distance then further varied by geographic categories. In addition, where service assurances are required this may trigger higher costs if diverse routes and duplicated equipment are required to provide a higher availability service.

4.38 Capacity is limited to bandwidths set by industry standards, currently defined by PDH and SDH interface standards (with a minimum bandwidth of 2 Mbps). However as Ethernet interfaces are introduced, transmission capacities can increase to bandwidth capacities including 1Gbps, 10Gbps, 100Gbps and higher orders as further standardisation occurs.

4.39 In contrast, distance aggregations are provided by the access provider, for example in Optus' transmission arrangements with Telstra, **CiC**

Does transmission pricing differ among geographic categories (ie. inter-capital, 'other', inter-exchange local and tail-end transmission)?

4.40 As previously noted, in Optus' transmission arrangements with Telstra, Telstra currently sets different transmission prices **CiC**

Are the pricing structures for declared and non-declared routes different? If so, then what are the differences?

4.41 In Optus' transmission arrangements with Telstra, Telstra's transmission pricing structure is currently set until **CiC**

Are there volume discounts based on the number of links purchased, capacity, distance, or other factors (please specify)? Are there term discounts based on contract length?

4.42 As previously noted, access seekers may obtain discounts by making long term commitments during commercial negotiations. Variations to standard SLAs may also impact the price.

4.43 In Optus' experience, discounts in the past have generally been based on contract length, volume, minimum spend, or a combination of the individual factors.

Where a supplier other than Telstra is present, are commercially negotiated transmission charges substantially different for an equivalent or comparable service?

4.44 Commercially negotiated transmission charges vary on a route-by-route basis. In general terms, the price differences are often minimal along main competitive routes. However along the non-competitive routes (such as tail-end and regional routes) the price difference can be highly variable.

4.45 In Optus' experience, where an alternative supplier (other than Telstra) is considered this is because their transmission charges are cheaper than Telstra. **CiC**

If you are an access seeker, how important is the availability of redundancy in choosing a suppliers for transmission services where two or more suppliers are present?

4.46 Optus submits that while desirable the availability of redundancy is not the most critical factor when choosing a supplier. Rather in the first instance access seekers would likely require higher availability or enhanced SLAs.

4.47 Business and enterprise customers will generally require business grade services and demand an availability SLA. In addition where mission critical connectivity is required, these customers may need a higher availability SLA not possible without redundancy, however in general only a small percentage of sites will require the redundancy option.

4.48 For backhaul capacity, Optus submits that suppliers may be chosen for non redundant routes if they provide a diverse path where the primary route is an Optus transmission service. However, while access seekers may sometimes request non-redundant backhaul routes so they can control their own traffic. The option of non redundant routes is not offered along all routes or by all suppliers of transmission services.

If you are an access seeker who purchases/purchased transmission products from a supplier other than Telstra, is/was redundancy automatically included? If not, and you purchase/purchased redundancy separately, who performs/performed the switching in the event of a failure?

4.49 Optus submits that redundancy is not usually included in transmission products offered from suppliers other than Telstra, given that most customers also purchase an availability SLA with their service. Also refer to Optus' discussion on network resilience discussed in Section 3.

4.50 Depending on the service, the switching in the event of a failure is performed at the customer CPE or if they offer a managed router, the service provider's equipment will activate the switch between access links.

5. Pricing Methodologies

5.1 This section sets out Optus' views on each of the Commission's proposed pricing methodologies for the pricing of transmission services including:

- Cost modelling;
- Fully allocated cost; and
- Benchmarking approaches

5.2 Optus submits that a hybrid approach based on fully allocated cost (FAC) using depreciated actual cost (DAC) will better align access prices to costs actually incurred. By taking account of historic depreciation this will ensure that the service provider is not able to recoup the costs of its investment in assets several times over.

5.3 In summary, Optus submits that the ACCC should set uniform prices reflecting the cost of transmission services, calculated by allocating the depreciated historic cost of Telstra's national transmission network according to forecast demand and route distance. This approach is capable of being adjusted to take into account a number of other transmission cost drivers such as redundancy requirements and contract length as appropriate.

Bottom-up long-run incremental cost

5.4 The Commission has previously engaged Gibson Quai AAS to develop a TSLRIC+ based transmission cost model (the GQ-AAS model) for the purpose of informing the Commission's estimation of the costs of providing transmission services, [65] by modelling a representative network [66] which can be capable of estimating the cost of particular transmission routes, as well as estimating the efficient costs of particular routes or areas that can be used as domestic benchmarks.

5.5 The Commission has noted that TSLRIC+ has traditionally been accepted to be an appropriate methodology in determining the cost-reflective prices for the pricing of transmission services.[67] However the Commission has recently acknowledged that the objective of TSLRIC+ *"may become less relevant where the build/buy decision is less of a priority."* [68]

5.6 As set out in Section 2 of this paper, Optus' considers that TSLRIC+ (when this is taken to refer to a 'replacement cost' approach to pricing) places too great an emphasis on "investment incentives" as the means to promote the

[65] ACCC, *Transmission network cost model*, Discussion Paper, p.5
[66] The GQ-AAS model was "based on Telstra's current optical fibre network architecture for the provision of transmission capacity services. This includes the arrangement of optical fibre routes in rings and deployment of transmission technologies located at exchange sites to complete the transmission capability. The Commission understands that this reflects current 'best-in-use' technology, and that other suppliers of optical fibre transmission services would configure their networks in a broadly similar manner." ACCC, *Transmission network cost model*, Discussion Paper, p.12
[67] ACCC, *Domestic transmission capacity service*, Discussion Paper, April 2010, p.16
[68] ACCC, *Domestic transmission capacity service*, Discussion Paper, April 2010, p.16

long term interests of end-users and is inconsistent with the legislative criteria in the Trade Practices Act.

5.7 Optus considers that replacement cost based pricing is likely to stifle competition and discourage efficient utilisation of transmission infrastructure. Optus therefore does not consider cost modelling approaches based on replacement cost to be an appropriate methodology for the pricing of transmission services. However to the extent that a cost modelling approach is adopted, Optus submits that the following comments should be taken into account.

Is it appropriate to model a ring structure that provides for high levels of resilience or point-to-point links that better reflect how competitive entry has so far developed?

5.8 As discussed in Section 3, Optus considers that to the extent a cost modelling approach is adopted, it should allow for a configuration that primarily uses point to point links, with the exception of ring structures in CBD areas.

5.9 Outside CBD areas, point to point links are prevalent. This configuration is unlikely to compromise resilience given that a series of point to point links when connected will in effect create a ringed structure, hence provide a redundant route.

What is the appropriate level of aggregation that would most accurately reflect costs? For example, the existing classification could be maintained, or horizontally aggregated into 'trunk' and 'terminating'. Alternatively, services could be disaggregated into geographic bands and/or into different service capacities (eg. bandwidths)?

5.10 Optus considers that a replacement cost based bottom up modelling approach will not accurately reflect costs because pricing is not based on costs actually incurred by the service provider and such an approach will not take into account costs which have already been recovered by the service provider.

What is the appropriate network size to model? For example, would a state be representative or would a more extensive model be necessary in order to increase the reliability of the costing?

5.11 Optus submits that (to the extent a cost modelling approach is adopted), given a purpose of the BU LRIC approach is to be able to set prices for all transmission routes, this assumes that a network size representative of the national network should be modelled.

5.12 In contrast, if only a smaller section of costs need to be modelled then it may be appropriate to apply a state-based representation. A state-based network size can potentially increase the reliability of costing in terms of the applicability of unit input prices to each state, such as labour and material costs. However a key disadvantage could be its inability to accurately capture all transmission costs for the state and take into account the shared costs of transmission routes that span state borders.

5.13 Therefore given the intended purpose of the BU LRIC approach is to set prices for all transmission routes then it would be more appropriate for a national network to be modelled.

Would a TSLRIC+ model of this nature best promote 'build' or 'buy' signals across the entire DTCS network or is it better suited to particular categories of transmission?

5.14 Optus submits that a TSLRIC+ model of this nature is unlikely to promote build/buy signals particularly for non-competitive routes such as tail-end transmission links and non-competitive regional routes. Discussion of TSLRIC and build/buy signals was set out in Section 2 of this paper.

5.15 For most capital-regional routes, there remain high barriers of entry for access seekers. Similarly, tail-end routes continue to remain enduring bottleneck services. These services are unlikely to benefit from continued use of the TSLRIC approach for a number of reasons.

5.16 Firstly Telstra's market dominant position is largely entrenched due to its incumbent status. The NBN Implementation Study acknowledges that Telstra is the only national backhaul provider, and as a vertically integrated operator, this provides incentives for it to set higher prices on backhaul to reduce competition from its retail competitors. [69]

5.17 Second there are high barriers to entry involved in the installation of additional transmission links. Physical transmission costs are generally sunk once the transmission link has been installed and only recoverable once the fibre has been lit. This creates high barriers to entry for new entrants along existing transmission routes, particularly for non-competitive routes such as the capital-regional and tail-end transmission routes.

5.18 For example, there are often high build costs which discourage the deployment of new fibre links. As such, there are high levels of capital investment required to roll out to regional and rural areas. In addition, for tail-end transmission there is limited demand for multiple connections to premises, coupled with high costs for installing additional links from the main transmission network to end premises.

5.19 Third since the competitive regime has been in place, there has been limited development of competition along the regional and rural transmission routes and Telstra remains the dominant access provider along most of these routes. Recent developments, such as the Government's RBBP has helped stimulate some competition to develop in priority areas which otherwise would have remained non-competitive.

5.20 Finally the NBN Implementation Study succinctly summarises the complexity of maintaining a LRIC approach in setting prices for transmission services such that:

> *"As the unit cost for capacity varies, effective LRIC regulation requires the regulator to maintain a cost model for each backhaul route and keep track of the capacity on each route.* ***Effective price regulation of backhaul routes could therefore be administratively onerous and problematic to implement."*** [70] **[emphasis added]**

[69] KPMG-McKinsey, *NBN Implementation Study*, 2010, p.326
[70] KPMG-McKinsey, *NBN Implementation Study*, 2010, p.329

5.21 Optus submits that a TSLRIC model of this nature is unlikely to promote efficient use of and investment in infrastructure, particularly along non-competitive routes.

Is a price formula based on a linear relationship between price and transmission rates appropriate? Or should prices exhibit a diminishing relationship to increasing transmission rates?

5.22 Optus submits that a price based on a linear relationship between price and transmission rates is not appropriate.

5.23 The approach taken by Analysys, in its 'transmission modelling' component of its fixed line services model, dimensions capacity within the transmission network in terms of E1 virtual containers (VCs).[71] Analysys also noted that:

> *"This calculation also takes into account the cost threshold associated with deploying these transmission assets. It is assumed, based on benchmark data, that such cost increases approximately 2.5 times with respect to a quadrupling of speed, i.e. an STM-4 is approximately 2.5 times more expensive than an STM-1. Consequently, instead of deploying three STM-1 links, the model will deploy a cheaper solution of one STM-4 link."* [72]

5.24 It is in Optus' experience that capacity and distance contribute to cost at a diminishing rate. For example, in Optus' transmission arrangements with Telstra, the cost multiplier for monthly access **CiC**. A diminishing relationship is further justified given the acknowledgement that upgrades to existing transmission links can be achieved with relatively small additional expenditure, such that the high build costs are largely due to the construction of the initial physical link. [73]

5.25 It follows that prices should exhibit a diminishing relationship to increasing transmission rates, and should not exceed the multiplying effect imposed by the additional costs incurred for equipment requirements and upgrades.

How appropriate is this methodology for promoting the objectives of both the current and proposed regulatory regimes?

5.26 As set out in Section 2 of this paper, Optus' considers that bottom up TSLRIC+ modelling (when this is taken to refer to a 'replacement cost' approach to pricing) places too great an emphasis on "investment incentives" as the means to promote the long term interests of end-users and is inconsistent with the legislative criteria in the Trade Practices Act.

Top-down long-run incremental cost

5.27 Similar to the issues raised under BU LRIC approach, Optus reiterates its view on replacement cost approaches (as summarised in Section 2 of this

[71] These have been derived from industry standards, where the following PDH/SDH transmission levels correlated with the following number of E1 VCs. E1=1 (E1 VC); E3=14; STM-0=21; STM-1=63; STM-4=252; STM-16=1008; and STM-64=4032. Cited in Analysys, *Fixed LRIC cost model documentation*, December 2008, p.79

[72] Analysys, *Fixed LRIC cost model documentation*, December 2008, pp.79-80

[73] KPMG-McKinsey, *NBN Implementation Study*, 2010, p.328

paper). In general such prices would stifle competition and would discourage efficient utilisation of transmission infrastructure. Optus therefore does not consider cost modelling approaches to be an appropriate methodology for the pricing of transmission services.

5.28 As such, Optus considers that the use of a top-down LRIC approach (when this is taken to refer to a 'replacement cost' approach to pricing) is not appropriate for the setting of prices for the DTCS.

Fully allocated cost

Is a FAC approach based on improved RAF appropriate for deriving prices for the DTCS?

5.29 A FAC approach recognises that both fixed and variable resources contribute to the delivery of a service. The basic principle follows that the total cost incurred in delivering a single service should be attributed to that service, while taking into account the allocation of common or joint costs.

5.30 A fully allocated cost (FAC) approach based on depreciated actual cost (DAC) would ensure that all actual incurred costs were taken into account.[74] Optus considers that the use of a FAC approach may be appropriate for the setting of prices for the DTCS, particularly when based on DAC as set out later in this section in Optus' discussion (under a combined approach).

Should price caps or other kinds of incentive regulation be set in conjunction with a FAC pricing approach?

5.31 Optus considers that it is not necessary to introduce incentive mechanisms with a FAC pricing approach.

What is a realistic timeframe for access providers to implement major changes (such as those envisaged above) to their reporting obligations under the RAF RKRs?

5.32 Optus submits that where major changes are required this would be subject to a separate inquiry from which the appropriate timeframe would be set.

International and/or domestic benchmarking approaches

5.33 The use of benchmarking (both domestic and international) has been considered in various pricing principles inquiries in recent years. In the 2004 DTCS pricing principles, the Commission concluded that:

> *"In the absence of readily available TSLRIC information, the Commission considers that benchmarking approaches may be*

[74] In addition, should a FAC approach be chosen, the pricing methodology would need to heed the Commission's initial observation that: "Decisions would first have to be made about the appropriate areas or regions to cost and how the different transmission services should be disaggregated. To maximise efficiency and reduce incentives for inefficient bypass, it would be necessary to identify clusters of routes that have similar cost characteristics. For example, identifying similar geographic regions and deciding whether the existing four classifications should be retained or aggregated into 'trunk' and 'terminating.' Once the relevant services are determined then the structure of prices can be determined — generally prices based on distance and capacity." ACCC, *Domestic transmission capacity service*, Discussion Paper, April 2010, p.21

appropriate for determining interim, or in some cases, final prices for the declared transmission capacity service in an arbitral or undertaking context. At the very least, such approaches may be useful for sanity checking any cost-based estimates, after having regard to differences that may exist between the respective transmission services and the markets in which they are supplied." [75]

Are international and domestic benchmarks an appropriate tool for deriving prices for the DTCS?

5.34 Optus considers that the appropriateness of benchmarking will depend on the classification of the transmission routes, given that comparability of benchmark prices may be lost if the appropriate cost drivers (such as distance and capacity) are significantly different. In addition, the applicability of international and domestic benchmarks will vary depending on the pricing methodology used to set prices.

International benchmarking

5.35 International benchmarking may be used as a point of reference in assessing whether the indicative prices set fall within the reasonable bounds set by international practice.

5.36 The Australian Competition Tribunal (Tribunal) has in the past discussed the use of international benchmarking evidence, hence setting a high standard for benchmarking evidence:

> *"In order to place any reliance upon the international benchmarking analysis it would be necessary to know much more about the regulatory environment within which they were determined, the state of the relevant markets and the socio-economic environment in which the mobile services were operative."*[76]

5.37 Historically, the Commission has put less weight on international benchmarking relative to other information before it, due to difficulties in finding appropriate comparators for areas with a low population density.[77] International benchmarking evidence therefore will only be useful if appropriate adjustments are made. As the Commission stated,

> *"…international benchmarking is a useful comparative tool <u>when appropriate regard is had to country specific characteristics.</u>"* [78]

5.38 For example, the Commission has considered the following to encompass suitable adjustments:

> *"... international cost benchmarking is a useful input in determining the cost of supplying fixed services. In using benchmarked data, account must be taken of differences between benchmarked countries.*

[75] ACCC, *Pricing principles for declared transmission capacity services*, Final Report, September 2004, p.23
[76] *Re Optus Mobile Pty Ltd v Optus Networks Pty Ltd* [2006] ACompT8, para 297
[77] ACCC, *Draft Pricing Principles and indicative prices for LCS, WLR, PSTN OA, ULLS LSS,* August 2009 Determination pp.11-12
[78] ACCC, *Draft Pricing Principles and indicative prices for LCS, WLR, PSTN OA, ULLS LSS,* August 2009 Determination pp.11-12

> *Many of the adjustments that need to be considered include network considerations (usage and scale), geography, vertical/horizontal integration, population density, land and labour costs, the use of different technology, retail prices, scope of services offered and the quality of services offered."* [79]

5.39 It follows that international benchmarking can be a useful comparative tool when appropriate regard is had to country specific characteristics and to the methodology used to set prices in each jurisdiction. For example, Optus considers that international benchmarks set according to a bottom up TSLRIC+ cost model would be inappropriate since they would result in prices that were too high to be of any use in setting Australian prices that would be consistent with the legislative criteria (for the reasons set out in Section 2 of this paper).

Domestic benchmarking

5.40 Optus submits that domestic benchmarks are unlikely to provide an appropriate reflection of the actual costs incurred in order to provide transmission services. Domestic benchmarks are likely to only be available for competitive routes given the presence of more than one access provider along a designated route. In contrast, non-competitive routes have monopolistic characteristics and prices set commercially on such routes are unlikely to provide appropriate benchmark values. While domestic benchmarks could be taken from prevailing commercial prices, there is no guarantee that these prices are cost-reflective.

5.41 Also, it would be difficult to compare the different domestic routes given the differences in a number of factors including distances, capacities and geographic regions. This may further be complicated by differences in pricing structure between different access providers, for example even if two or more suppliers provide transmission services using a similar pricing table structure, these may not be comparable because the total pool of transmission services being offered may differ.

Which are the appropriate benchmark countries from which transmission backhaul prices could be derived?

5.42 Few benchmark studies have been undertaken for transmission pricing, therefore there are few reference points from which to determine suitable benchmark countries to use.

5.43 In selecting benchmarks, appropriate regard must be had to country specific characteristics and to the methodology used to set prices in each jurisdiction. Importantly, the benchmarking approach should only take into account transmission prices that have been derived using an appropriate cost-reflective approach that satisfies the Commission's objectives (eg if a FAC approach is adopted, then the benchmark countries should also only include countries in which a FAC approach has been adopted). As noted above, Optus considers that international benchmarks set according to a bottom up TSLRIC+ cost model would be inappropriate (see Section 2 of this paper).

[79] ACCC, *Pricing Principles and indicative prices for LCS, WLR, PSTN OA, ULLS, LSS*, December 2009 Determination, p.16

5.44 Some recent benchmark studies are noted below. Optus does not offer a view on whether or not these studies contain appropriate benchmarks.

OECD study

5.45 The OECD publishes a range of performance indicators for telecommunication services in OECD countries, where leased lines is one such indicator. Using the latest data, the OECD leased lines price index shows that Australian prices for 2 Mbps leased lines were 29 per cent above the OECD average.[80]

5.46 The benchmark countries considered include the set of 30 member countries within the OECD, of which only 25 countries have data points for 2 Mbps transmission services (and 20 countries, excluding Australia have data points for 34 Mbps services).

Teligen study

5.47 The European Commission (EC) releases an annual publication on Telecoms Price Developments produced by Teligen. The objective of the Teligen study has been to analyse the price developments over the last 12 years, as expressed in the OECD basket comparisons, and as found in prices of single calls. The study uses the OECD basket results in a slightly adapted form, in order to maintain consistency over the 12 years.[81] Data for leased lines is collected for each country over three distances: 2 km (local circuits), 50 km and 200 km. This is generally based on the most basic type of tariff option offered by the ex-incumbent operator in each country.

5.48 The benchmark countries considered include the 27 member countries within the EU, and the US and Japan.

LECG study – New Zealand

5.49 LECG recently conducted a benchmarking study commissioned by Telecom NZ in its response to the Commerce Commission's 2007 inquiry on standard terms for local loop and bitstream backhaul services. In its benchmark countries selection, LECG identified similar services with publicly available information in 54 jurisdictions including 48 US states, Canada, UK, Italy, France, Austria and Netherlands.[82] Following further assessment, to ensure that the countries selected meet the criteria of using a forward-looking cost-based pricing method, the US and Austria were excluded from the sample set. Price data from the remaining dataset was then used in a regression analysis to estimate a benchmark price which was applied in the NZ context.

5.50 The benchmark countries considered include Canada, UK, Italy, France and Netherlands.

Is the NZ regression-based benchmarking approach appropriate?

[80] This value has been calculated using the data provided in Table 7.16. In particular, the values listed within the '2 Mbps USD PPP' column have been converted into an indexed value (with the OECD equivalent taken to be the base indicator). OECD, *Communications outlook 2009*, August 2009, p.311
[81] Teligen, *Report on Telecom Price Developments from 1998 to 2009*, Produced for the Directorate General for Information Society, European Commission, December 2009, p.7
[82] LECG, *Price benchmarking of UBA and UCLL backhaul services*, 14 March 2008, p.15

5.51 While Optus considers there may be some merit in the NZ regression-based benchmarking approach, it remains wary of the approach's use of distance and bandwidth as the only two critical cost drivers of transmission pricing. In particular, as discussed in Section 4, Optus considers that the cost of serving a transmission route will depend on a number of factors, including but not limited to distance and capacity.

5.52 In selecting a sample for a regression-based benchmarking approach, Optus submits that appropriate regard must be had to the methodology used to set prices in each jurisdiction. Importantly, the sample should only include transmission prices that have been derived using an appropriate cost-reflective approach. The sample should not include international benchmarks set according to a bottom up TSLRIC+ cost model.

What are the relevant cost drivers in determining prices based on a benchmarking approach?

5.53 In any benchmarking approach, Optus considers the relevant cost drivers as discussed in Section 4 should be taken into account where possible.

How should information on domestic benchmark prices be collected?

5.54 As discussed previously, Optus considers that the use of domestic benchmarks is unlikely to provide an appropriate reflection of the actual costs incurred in order to provide transmission services. Domestic benchmarks are likely to be based on commercial prices negotiated on commercial terms. As such it may not be appropriate to use these prices as a benchmark in the setting of prices for regulated services.

A combined approach

5.55 Consistent with a correct focus on prudent past investment in the infrastructure used to supply the service, a critical component of designing a new pricing approach for transmission services will be to ensure that appropriate regard is given to the age of the service provider's assets and the extent to which it has already recovered the original construction cost.

5.56 As such, Optus submits that an approach based on depreciated actual cost (DAC) will better align access prices to the costs the service provided has incurred and may continue to incur.

Is it appropriate and/or preferable to use a combination of costing methodologies to price DTCS services?

5.57 The Commission in its discussion paper noted that:

> *"In summary, the Frontier Report recommends using multiple sources of cost information to set prices for monopoly routes, which could include bottom-up TSLRIC modelling reconciled with top-down FAC or domestic and international benchmarks. Where competitive entry has occurred, the Frontier Report suggests a more light-handed pricing approach to reduce reliance on cost-modelling."* [83]

[83] ACCC, *Domestic transmission capacity service*, Discussion Paper, April 2010, p.24

5.58 Optus considers it may be appropriate to use a combination of costing methodologies to price DTCS services. However, Optus disagrees with any use of bottom-up LRIC TSLRIC+ modelling based on replacement cost as part of this combination, for the reasons set out earlier in this section and in section 2.

5.59 Frontier has commented that:

> *"One rationale for adopting a mix of approaches would be to reflect the different demand and supply conditions of transmission capacity services.* ***In particular, it would seem desirable to impose less intrusive or 'light touch' regulation in areas that are prospectively competitive (i.e. for routes or services in which some entry has already occurred or seems highly likely to occur), and to reserve cost-based methods for where there are discrete markets in which competition seems unlikely****."* [84] **[emphasis added]**

5.60 Optus' view is that transmission routes fall into one of two broad categories: competitive (such as the high traffic inter-capital routes) and non-competitive (including low traffic backhaul routes, tail-end routes and access infrastructure). Routes that are judged to be competitive are a good prospect for 'light touch' regulation – indeed there is at present the opportunity for such routes to be removed from the scope of price regulation, through either a review of the scope of declaration or an exemption process. This allows the existing regime to support the continued development of competition in the market. In contrast, where there is no current or prospective competition an approach based on DAC valuation focusing on enduring bottlenecks should be adopted.

5.61 Frontier also concludes it is their view that:

> *"using multiple sources of cost information to set prices would be the best approach. This could include a combination of bottom up TSLRIC modelling with CCA FAC regulatory accounting information, but could also include international and domestic benchmarks (this will depend on the specific route or service at issue)."* [85]

5.62 Optus similarly considers it may be appropriate to use multiple sources of cost information to price DTCS services however Optus disagrees with the use of cost modelling based on replacement cost as one of the sources.

If it is appropriate to use a combination of costing methodologies, which combination of methodologies would be the most effective in terms of estimating costs accurately and in the most resource effective way (eg. for different services)?

5.63 Optus submits that a fully allocated cost (FAC) approach based on depreciated actual cost (DAC) will better align access prices to the costs the service provided has incurred and will continue to incur. By taking account of historic depreciation this will ensure that the service provider is not able to recoup the costs of its investment in assets several times over.

[84] Frontier Economics, *Economics of transmission capacity services*, A report for the ACCC, June 2009, p.67

[85] Frontier Economics, *Economics of transmission capacity services*, A report for the ACCC, June 2009, p.71

5.64 The application of a DAC pricing principle will:

- enable the service provider to recoup its prudent investment in the network assets;
- enable access prices to be clearly linked to actual costs incurred or likely to be prudently incurred; and
- be clear, transparent and practical – that is, capable of being readily implemented.

5.65 The following discussion sets out Optus' view on the DAC approach and how it can be applied in the pricing of transmission services.

A pricing approach based on depreciated actual cost (DAC)

5.66 Optus proposes the following approach to pricing transmission services, particularly on non-competitive transmission routes.

Valuation of assets

5.67 The historic (or actual) cost of an asset can be defined as the original cost of acquisition or rollout of an asset. The depreciated actual cost (DAC) is the value of the historic cost of the asset *adjusted* for the proportion of costs that have been recovered (past compensation).

5.68 In the first instance, the Commission will be required to obtain the access seeker's total unrecovered (depreciated) historic cost of the existing transmission network. In order to determine the historic cost of the asset, information is required on the service provider's costs and on the amount of those costs that have been recovered in the past (i.e. past depreciation).

5.69 In determining DAC, one approach is to take as the starting point the cost of construction of the asset. Alternatively, given that the intention is to ensure that investors receive a normal commercial return on their investment, it may be appropriate to focus on cost recovery from the point of view of investors.[86]

5.70 In either case the next step is to estimate the extent of cost recovery that has occurred to date. To the extent that net compensation (after operating and maintenance costs have been taken into account) has been in excess of a normal commercial return on investment, it should be treated as a return of capital to the service provider (i.e. past depreciation).

5.71 An alternative approach is to estimate the extent of cost recovery based on the regulated entity's accounting records. The book value of an asset may be treated as a reasonable approximation of its DAC. For example, the ACCC has noted that *"[t]he Western Australia Full Court in Re Michael observed*

[86] In the case of Telstra's infrastructure, this might involve estimating the value that it would have been reasonable for investors to ascribe to the assets on privatisation as the starting point.

that in calculating the DAC it is usual to take the net book value and to depreciate this in line with accounting standards." [87]

5.72 It should be possible to estimate the compensation received by the service provider based on publicly available wholesale and retail revenue data.

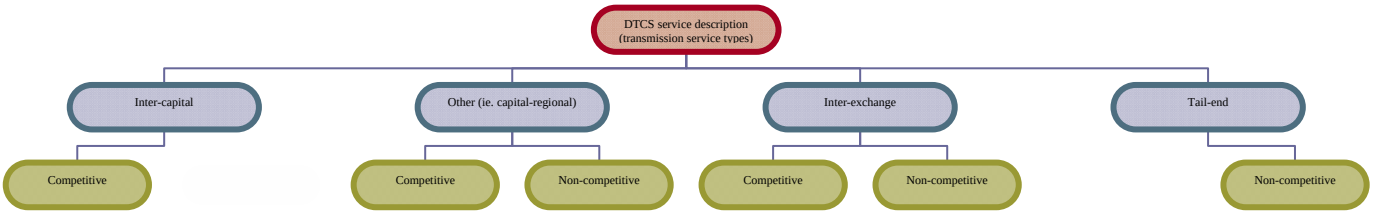
5.73 Further adjustments may be made including deductions for excessive capacity levels and non-prudent expenditure. This gives the total unrecovered prudent past investment in network infrastructure.

Approach to Transmission Pricing

5.74 Once DAC has been employed in this way to set an opening value for the infrastructure used to supply transmission services, that value should form a regulatory asset base (RAB) for the service provider which should then be rolled forward from one regulatory period to another, with the objective of ensuring the service provider recovers its costs (but does not over-recover), taking account of ongoing depreciation and new expenditure. The general approach to pricing non-competitive transmission services should be similar to the approach Optus has recommended for fixed line services.[88]

5.75 In order to set transmission prices, current forecast levels of demand and route lengths will be required. This information could then be aggregated according to the existing DTCS transmission service types, with each transmission service type potentially having a different derived capacity-distance cost relationship. Using this methodology (based on forecast demand and distance information), direct costs can be allocated across all transmission routes and service types.

5.76 Each of the transmission service types should be disaggregated according to competitive and non-competitive routes, as shown in the following diagram:



5.77 Based on the direct costs, a relationship can be determined to represent the proportion of costs made up by competitive and non-competitive routes for each transmission service type.[89]

5.78 The access price for non-competitive infrastructure will be a non-linear function of capacity and distance. This function may be applied to determine

[87] *Re Dr Ken Michael AM; ex parte EPIC Energy (WA) Nominees Pty Ltd & Anor* [2002] WASCA 231, para 163 cited in ACCC, *Revised access arrangement by APT Petroleum Pipelines Ltd for the Roma to Brisbane Pipeline*, Final Decision, December 2006, p.17

[88] Refer to Optus Submission to ACCC in response to discussion paper, Telecommunications Access Pricing Principles for Fixed Line Services, February 2010

[89] This relationship is then used to adjust the common cost component, such that all common costs are only allocated to competitive routes.

the price of individual transmission capacity requirements on particular routes in the form of individual contract price schedules for each transmission service type.

5.79 In applying this general approach, the Commission should also take into account a number of issues, as raised in Section 3 and Section 4 of this paper. These include (but are not limited to) issues relating to:

- Network structure and network resilience (where the pricing of transmission services should not be burdened with the costs of network elements that are not required by access seekers – the requirements of end users vary with respect to grade of service and level of network resilience and access seekers should have the option to choose between non-protected as opposed to protected routes);
- Other transmission cost drivers such as contract length. This may involve the introduction or discounts or additional SLAs.

5.80 In summary the Commission should set uniform prices reflecting the unrecovered cost of transmission infrastructure, calculated by allocating the depreciated historic cost of Telstra's national transmission network according to forecast demand and route distance, adjusted for redundancy requirements and contract length as appropriate.

Appendix A: Recent regulatory developments

There are a number of recent regulatory developments that may be relevant to the current DTCS pricing review, including:

- Proposed reform to the access regime;
- Review of access pricing principles for regulated fixed services;
- Proposed variation to the DTCS service description ;
- The Regional Backbone Blackspots Program; and
- NBN Co's deployment of backhaul

There is significant uncertainty around these developments (in particular, if and when they are likely to be finalised). One key objective of this review will be to set pricing principles that appropriately reflect the long term interest of end users and take proper account of the policy decisions being implemented by Government which will ultimate shape the future direction of the fixed line market.

The following table summarises the current status for each of these developments.

Process	**Status / Likely timeframe**
Proposed reform to the access regime	Under consideration by the Senate
ACCC review of access pricing principles for fixed services	Under consideration by the ACCC
Proposed variation to the DTCS service description	Under consideration by the ACCC
Regional Backbone Blackspots roll-out	$250m tender awarded to Nextgen Networks for first round of priority rollout in December 2009. Work began in North Queensland in February 2010. Nextgen advises that all links are expected to be progressively completed from September 2011 (for Darwin, Broken Hill) to March 2012 (for Geraldton, Victor Harbor and South West Gippsland).
NBN Co infrastructure roll-out	TasNBN Co announced Stage 1 of its roll-out in July 2009, with first services expected to be available by July 2010. Stage 2 announced in October 2009, and Stage 3 announced in March 2010. NBN Co announced its first release project in March 2010, with construction to begin late 2010 and completed by early 2011. A further 14 locations were announced as part of the second release sites in July 2010.