IT'S HOW
WE CONNECT

TELSTRA CORPORATION LIMITED

Public inquiry into final access determinations for fixed line services—primary prices

Response to Draft Decision

1 May 2015

Public version

Table of Contents

Executive Summary

Introduction

Telstra welcomes the opportunity to respond to the Australian Competition and Consumer Commission's (**ACCC**) Draft Decision on primary price terms for the Final Access Determinations (**FADs**) for the declared fixed line services.[1]

As has been previously acknowledged by Telstra, the ACCC and other industry participants, this inquiry comes at a critical time for the industry as over the period for which prices are to be determined, the industry will be undergoing a major and permanent structural transition and a significant proportion of end-users and services are forecast to migrate from Telstra's fixed line network to the National Broadband Network (**NBN**).

The NBN transition is unprecedented. No other incumbent has been required to shut down its local access network and migrate customers to a government-owned alternative. The technical and commercial complexity of this task is formidable and means that the next five years are likely to be highly dynamic and uncertain.

The Fixed Principles were established at the time of the 2011 FADs with an eye to the challenge of this industry transition. They are orthodox and involve a well-understood model of price regulation applied in most Australian regulated utilities. The central benefit of moving to a "building block" model (**BBM**) through Fixed Principles in telecommunications was that it would provide a stable, predictable and transparent model for updating and rolling forward the existing capital base with prudent new expenditure, and then allocating costs in a causal way to demand.

The Fixed Principles were designed to avoid the need for the ACCC, Telstra and the industry to re-contest at each regulatory reset the "optimum" shape of the existing network, by focusing on prudency of new expenditure only. This was seen at the time, rightly, to be especially important for industry and the ACCC. Telstra and industry therefore rely on the ACCC setting prices under the current FAD process in accordance with, and reasonably applying, those Fixed Principles.

It is against this challenging and dynamic backdrop, and the critical role of the Fixed Principles in providing an appropriate and predictable pricing methodology for industry, that Telstra makes the following observations about the ACCC Draft Decision.

Response to key draft findings

1. The adoption of a fully allocated cost model is appropriate, but needs to be properly and consistently applied

Telstra supports a consistent and orthodox application of the Fixed Principles and, therefore, welcomes the ACCC's acceptance of a fully allocated cost framework. This means that any use by NBN Co of FLSM assets will form part of the allocation model and reduce the proportion of fixed line services model (**FLSM**) costs allocated to fixed line services, as NBN usage ramps up.

For a fully allocated cost model to work as intended, however, costs must be included in the model if they relate to shared *asset classes* (not specifically to *FLSM services*). The share of costs for common or shared assets that is recovered from declared services is determined at the allocation stage, where costs are allocated across all uses of those assets – by fixed line services and other users, including Telstra Retail, NBN Co and its customers.

However, the ACCC, based on input from its technical consultant WIK Consult (**WIK**), has proposed not including in the model a substantial amount of capital and operating expenditure associated with shared or common assets, despite a share of FLSM costs still then being allocated to non-FLSM uses. The effect of this would be to disallow capital expenditure incurred on assets

[1] Unconditioned Local Loop Service (**ULLS**); Line Sharing Service (**LSS**); Wholesale Line Rental (**WLR**); Local Carriage Service (**LCS**); Fixed Originating and Terminating Access (**FOAS and FTAS**); and Wholesale ADLS (**WDSL**).

used by NBN Co and other parties, whilst use of the same assets by NBN Co is still taken into account in allocating FLSM costs – an internally inconsistent position.

2. The ACCC's Draft Decision to set stable price relativities during NBN transition will benefit industry

Maintaining stable price relativities between different wholesale services will better promote the efficient migration of end-users to the NBN and avoid inefficiently "stranding" investment by access seekers (in supporting different legacy services/business models) during the transition to a structurally separated industry.

3. All users of the network should bear the diseconomies of scale that arise from NBN transition, not just Telstra's retail customers

Telstra does not accept that it should be the only user of the fixed line network that is required to bear the rising unit costs which result from the implementation by Telstra of the Government's NBN policy. This outcome would result from number of measures proposed or discussed in the Draft Decision, including:

- writing off approximately [redacted] from Telstra's regulated asset base by wrongly deeming that less utilised equipment amounts to an "asset disposal" (and, in the case of switching equipment, only after having first incorrectly *extended* the economic lives for those assets); and

- excluding NBN-related capital expenditure and operating expenditure (in the propex category) relating to duct remediation ahead of NBN deployment – and despite NBN's use of these assets nonetheless being included in the fully allocated model.

Telstra estimates that if the ACCC were to maintain this approach in the Final Decision, more than [redacted] in declared services revenues will be wrongly disallowed over the period FY2016-2019. By imposing the NBN transition cost caused by diseconomies of scale disproportionately on Telstra, the resulting under-recovery of costs from FLSM services amounts to an implicit subsidy from Telstra's retail customers to its wholesale customers.

The ACCC's consultant, WIK, infer that this outcome is justified on the basis that Telstra's commercial arrangements with NBN Co either *caused* the NBN migration to occur, or that they otherwise *compensate* Telstra for these diseconomies and transition costs.[2] Neither is correct.

The Draft Decision does not appear to suggest that Telstra should have acted differently – or that it somehow did not act prudently as an operator in choosing to cooperate with the NBN rollout. To the contrary, the evidence available to the ACCC, including provided by Telstra in this submission, shows:

- The NBN transition and associated loss of scale benefits are the result of Government policy, and are not caused by any action of Telstra.

- Telstra did not cause and does not 'win' from the NBN. Even with the deal payments, Telstra remains demonstrably worse off in value terms under any NBN scenario (i.e. whether or not it entered the definitive agreements). Indeed, both the Government and the ACCC acknowledge that access seekers – not Telstra – are the principal beneficiaries of structural reform being undertaken through the NBN migration.[3]

[2] WIK-Consult, Assessment on the efficiency and prudency of Telstra's expenditure forecasts, 5 March 2015, pp 23-24 (**WIK Report**); ACCC, *Public inquiry into final access determinations for fixed line services – primary price terms – Draft Decision*, March 2015, p 140, (**Draft Decision**).

[3] Explanatory Memorandum, Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2010.

- Telstra is compensated through NBN lease and infrastructure payments for the use of some leased assets by NBN Co and for the sale of some copper used by NBN Co for its FTTB and FTTN network. In the case of leased assets, this forecast use by NBN Co of leased assets is reflected in the FLSM Cost Allocation Framework. In the case of copper assets sold to NBN Co, Telstra accepts that these should be treated as an "asset disposal", and they should be removed from the asset base.

- The deal payments do not, however, compensate Telstra for the way in which migration to the NBN will reduce the use of legacy network assets that are not transferred to NBN Co. The deal payments were also not calculated with any expectation that the ACCC would substantially write-down the value of Telstra's regulatory asset base and deny capital expenditure as proposed in the Draft Decision, and in a manner directly inconsistent with the Fixed Principles.

4. No prudent operator would undertake the costly process of rationalising equipment in order to reduce operating expenditure or to fully/partially exit exchange building sites over the next five years, when a negligible number of exchange sites are expected to approach a post-migration "steady state" during this period

Based on analysis from WIK, the ACCC questions the speed and prudency of Telstra's network decommissioning as a result of NBN migration, and any resulting reduction in operating expenditure. The ACCC questions why network decommissioning does not more closely align with the NBN rollout.

A prudent operator would only rationalise equipment and exit exchange service areas (**ESAs**) once substantially all services have been fully disconnected and there is no need to continue to supply any new services (i.e. once the post-rollout network had reached a "steady state" ready for disconnection). The cost of rationalising or moving active services prior to this point outweighs any modest operating expenditure savings.

Based on the NBN Co rollout forecasts, as at March 2015, only [redacted] Telstra ESAs (or [redacted] of Telstra's ESA network) are expected to be fully covered by NBN rollout regions that have completed their migration of standard services by the first quarter of 2018. Even at this handful of locations, Telstra will be required to continue to supply a range of legacy services, including special services, services to non-premises (e.g. traffic lights) and services to common areas within apartment blocks and other "multi-dwelling units".

In this highly dynamic environment, in which a steady state will have been reached in a trivial number of ESAs (if any) and where Telstra must continue to supply a number of types of legacy services, no prudent operator would incur the substantial operating expenditure associated with rationalising and exiting exchanges early – which would outweigh any potential savings.

5. The 2011 FAD asset lives do not reflect a reasonable view of the economic lives of FSLM assets

The asset lives adopted by the ACCC in the Draft Decision are based on lives taken from the 2011 FAD decision. At the time they were first adopted, the asset lives used by the ACCC were not based on evidence of actual economic asset lives, but instead on the ACCC's own "total service long run incremental cost" (**TSLRIC**) pricing model, which has otherwise been abandoned.

Today, retaining the 2011 FAD asset lives results in asset lives that in some case are up to [redacted] different to those Telstra uses for its own accounting purposes, based on a proper technical review of service lives undertaken on an annual basis by Telstra and independently audited by Ernst & Young.

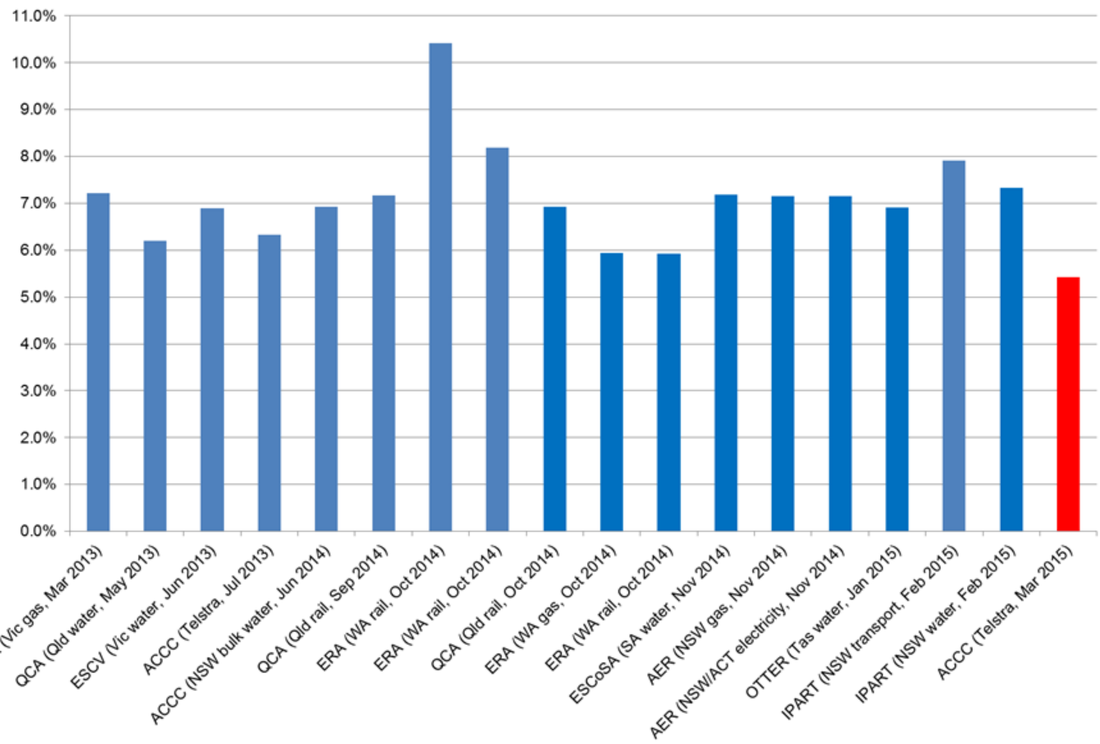
In some cases, the substantial differences between the asset lives in the Draft Decision and Telstra's proposed lives is because the assets included in the TSLRIC modelling upon which the 2011 FAD was originally based do not reflect the nature of the assets that make up the FLSM asset class. Simply, in a number of important cases, the asset lives used in the Draft Decision relate to the wrong set of assets.

Moreover, in the case of local switching equipment, the ACCC has extended the 2011 FAD asset lives substantially, while also then writing off a substantial portion of the value of those assets from the asset base (with allowing any recovery by Telstra) on the basis that they will be under-utilised – a directly inconsistent outcome.

6. The cost of capital proposed by the ACCC would be the lowest allowed by *any* Australian regulator in *any* regulatory decision over the past two years, despite the risks that Telstra faces compared with other more stable regulated utilities and sectors

As far as Telstra is aware, the cost of capital proposed in the Draft Decision is the lowest regulated cost of capital for any major regulated business that any Australian regulator has set in the past two years – implying that Telstra faces less risk and lower capital costs than for regulated water utilities, public transport operators and energy businesses.

Figure 1: Survey of recent WACC decisions (as at March 2015)



A key driver of this outcome is the ACCC's estimate of the debt risk premium (**DRP**), which is implausibly low and less than half the premium actually paid by Telstra on a very recent long-term bond issue.

Such a decision is unreasonable and inconsistent with the ACCC's own statements regarding the uncertainty Telstra and other telecommunications companies face during the rollout of the NBN.

7. Telstra has provided substantial evidence demonstrating how its base year operating expenditure has been derived as well as the prudency and conservatism of its opex forecasts

Contrary to the findings of WIK – which at times reflect a lack of understanding of the Australian market and Telstra's business – Telstra has no incentive to "inflate" or "overstate" expenditure on CAN assets, because this would impose an inefficient and costly burden on our unregulated activities.

In response to the ACCC's request for greater transparency around the determination of its base year operating cost forecasts, Telstra has provided significant further information detailing the derivation of its fixed line costs from its general ledger accounts (**GL**) and has had this reconciliation independently reviewed by KPMG. Telstra also commissioned international benchmarking on its baseline operating expenditure forecasts from NERA. Both reports clearly attest to the prudency of Telstra's base year operating expenditure.

Moreover, Telstra points to a number of areas in its derivation of base year opex where conservative assumptions adopted mean that the base year amounts are likely to *understate* FLSM operating expenditure. Examples of Telstra's conservative approach to determining base year operating expenditure (FY2014) are set out below.

Table 1: Conservative decisions underpinning extraction of base year opex from GL

Assumption	Impact on Telstra FLSM related opex
Restriction of FLSM related opex to Telstra Operations and Wholesale business units only For the purpose of deriving FLSM operating expenditure from Telstra's GL data, Telstra only examined costs incurred by either Telstra Operations or Telstra Wholesale Business Units, given this was where most relevant opex was expected to occur. However, this approach potentially excluded relevant FLSM operating costs incurred by other Telstra business units.	To test the potential materiality of this decision, Telstra undertook a high level analysis of two other Telstra business units – Telstra Retail and the Global Enterprise Services divisions (which services Corporate and Government customers). Based only on a review of these two divisions, Telstra identified approximately [redacted] of potentially relevant operating expenditure (i.e. that appears related to FSLM asset classes or products), that has not been included in its current forecasts. In the time available, Telstra was not able to undertake a similar review of all of the other Telstra BUs.
Networks cost identification Within the Networks Business Unit, Telstra's methodology for deriving opex was highly forensic and resource-intensive, in order to ensure that costs were appropriately identified. This limited the practicality of Telstra's review to only four (Customer Service Delivery (**CSD**), Networks, IT Solutions (**ITS**) and Telstra Service Operations (**TSO**)) of seven total lines of business within Networks (with the exception of accommodation costs).	Telstra has sought to assess the magnitude of the relevant operating expenditure that may exist in other divisions of Telstra Networks, but which have not been included in the FLSM. If Telstra had applied a more generalised approach to identifying opex at the Networks level (and not limited its analysis to only four lines of business) – base year opex for Networks would be approximately [redacted]
Accommodation costs Telstra used the results of its internal power management cost model (**NECM**) model as a proxy to apportion total accommodation expenditure, such as rent, power, and associated property overheads, to the FLSM.	Analysis of additional information on the distribution of accommodation costs between FLSM relevant assets and other network properties suggests that the NECM proxy is conservative and may understate relevant accommodation costs by approximately [redacted].

Telstra does not presently propose to adjust the FLSM forecasts to include this expenditure. However, any reasonable assessment of the prudency of Telstra's expenditure must take into account the overall conservatism of its approach – including the decisions made in the derivation of operating expenditure from the GL outlined above, which indicate that potentially up to [redacted] in relevant expenditure has been excluded from the FSLM base year opex.

The principal concern raised by the Draft Decision in relation to Telstra's operating expenditure forecasts is that, while they are forecast to decline substantially over the FY2016-2019 period by [redacted] in real terms, the ACCC questions whether this is sufficiently responsive to the decline in demand resulting from migration to the NBN.

The ACCC's concern appears to be predicated on a misunderstanding of how migration to the NBN will impact Telstra. The ACCC states that Telstra's "*network will shrink by* [redacted] *per cent*" over the forecast period[4] – but this is incorrect. Whilst there will invariably be a reduced number of services in operation on the network over this period, the network itself will – and must – remain largely intact.

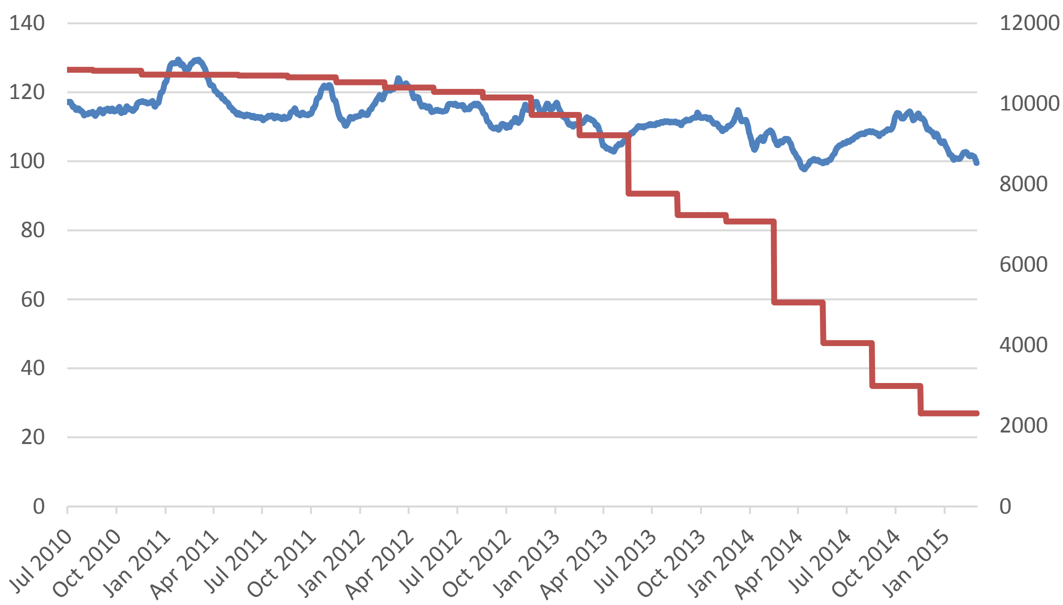
More specifically:

- Telstra's more than [redacted] exchange buildings are not expected to reduce and to the extent that a negligible number of exchange buildings may be partially or fully exited over the period, these are unlikely to be significant in terms of overall network cost. Further, the associated exit and decommissioning costs (which Telstra has not included as part of its forecasts) would likely exceed the operating expenditure requirements of these facilities over the regulatory period.

- Even at the end of the NBN rollout (beyond the next regulatory period), Telstra's fixed line network is expected to continue to operate – including in more than 4,000 ESAs in which NBN Co will make use (in full or in part) of fixed wireless and satellite technologies.

- Network equipment (including Digital Subscriber Line Access Multipliers (**DSLAM**s), switching equipment and transmission equipment) is not expected to materially reduce in number or be decommissioned. Further, the costs associated with the operation of equipment will not be materially affected by a reduction in active services. The experience in ESAs where the NBN rollout is taking place (such as Armidale below) highlights the inelasticity of expenditure such as power to the total number of Services In Operation (**SIO**s).

Figure 2: Armidale power usage (kW) v Number of SIOs



4 Draft Decision, p 35.

Telstra has observed a similar trend across a number of other ESAs where the NBN has commenced to be rolled.

- Telstra has provided evidence with this submission to demonstrate that it is not practical or economically efficient (or indeed viable) to rationalise network equipment within exchange buildings during the NBN rollout. The cost of undertaking rationalisation while there remain any material number of active services in an ESA will outweigh any limited opex savings associated with the activity.

8. Telstra's methodology for determining capital expenditure forecasts is conservative, as demonstrated by the most up-to-date data

Telstra's methodology for forecasting FLSM relevant capital expenditure is reasonable and appropriate by combining relevant historic trends with project and asset-specific capital expenditure planning information.

The forecasting approach adopted is conservative by design, in that:

- Telstra was selective in only forecasting capital costs on the basis of ongoing programs of work. Where prior years capital expenditure is used as the basis for forecasting future requirements, expenditure incurred under short-term and one-off programs has not been included. This means no allowance is provided in the forecasts for similar short-term or otherwise new programs of work over the forecast period.

- The approach used by Telstra sets aside almost [redacted] in past capital expenditure attributable to the FLSM Asset Classes on the basis that the programs under which this expenditure is incurred are not expected to continue past FY2014. If this expenditure had been included for the purposes of forecasting, capital expenditure on the FLSM Asset Classes for FY2015-2019 would be at least [redacted] higher in nominal terms.

- Forecast trends are "capped" where there is historic evidence of increased expenditure with respect to an FLSM Asset Class over time, whereas trends evidencing decline expenditure are forecast to continue unabated. If Telstra did not impose this cap, forecast capital expenditure on the FLSM Asset Classes for FY2015-2019 would be over [redacted] higher in nominal terms.

- The impact of the NBN is explicitly taken into account in determining capital expenditure forecasts. For FLSM Asset Classes where capital expenditure is considered likely to be impacted by the NBN, forecast expenditure is reduced in proportion to the NBN rollout. This approach assumes a "linear relationship" between the NBN rollout and Telstra's ability to reduce relevant capital costs – based on the nature of the NBN rollout, and the nature of Telstra's fixed line network. This relationship is likely to overstate the impact of the NBN on forecast capital expenditure – particularly in the first half of the forecast period.

More importantly, the forecasts produced by Telstra's forecast model are demonstrably conservative. Based on Telstra's recent capital planning round for FY2016, Telstra's budget for capital expenditure on the FLSM Asset Classes for that year will exceed the FLSM forecasts by more than [redacted].

Other observations

9. Telstra has provided substantial further information supporting the reasonableness of its proposed allocators

The ACCC and its consultant (Analysys Mason) have sought further information in relation to the operation of Telstra's proposed allocators.

Telstra has responded by providing the ACCC and its consultant substantial further detail on the underlying data and calculations used in the estimation of the individual cost allocators for each FLSM Asset Class. In addition, Telstra has undertaken analysis showing the reasonableness of Telstra's approach to those allocators questioned in the Draft Decision, including:

- For Transmission Equipment, Telstra converts transmission systems used by different service platforms to a common base (i.e. 2Mbps equivalent links). This is highly conservative in the sense that it will understate costs borne by lower-bandwidth connections (which are typically those most often used in the supply of regulated fixed line PSTN services) compared to higher speed unregulated services.[5] This conservative approach was not adopted by the ACCC's consultant Analysys Mason in its 2007-2008 fixed line services cost model for cost conversion factors. Had Telstra adopted those factors again, the costs attributed to the regulated wholesale services would increase by [redacted] over the period FY2016-2019.

- For Network Exchange Buildings, Telstra has tested the veracity and reasonableness of the use of the general revenue allocator for allocating costs associated with this Asset Class among the fixed line services and other Telstra services. Based on a review of detailed equipment inventory information, it is apparent that the use of the general allocator is reasonable and is likely, if anything, to understate the proportion of costs allocated to the fixed line services.

10. Telstra has continued to refine and improve the forecasts in the FLSM, including making a number of corrections to forecasts in response to a review by KPMG

Throughout the BBM RKR and FAD processes, Telstra has maintained a high degree of engagement with the ACCC and transparency around its FLSM modelling. This has led to continual refinement as issues have been identified (both by Telstra and the ACCC), and has resulted in changes being made that both increase and reduce regulated revenues.

Since the Draft Decision, Telstra has continued to work to refine its operating and capital expenditure forecasts, including engaging KPMG to undertake a review of the approach and calculations used to establish the FY2014 (base year) operating expenditure (**KPMG Opex Report**).

In undertaking this review, KPMG identified several issues that Telstra has now addressed. These include errors in the identification and method used to estimate attributable costs for IT Services and the calculation of business support mark-ups. The net result of these corrections is that forecast operating expenditure has increased by [redacted].[6]

Further, and following further assessment of the implications of the recently revised Telstra-NBN Definitive Agreements, Telstra has also separately reassessed and revised down its forecasts for capital expenditure on duct remediation by more than [redacted] over the period FY2015-2019. This reassessment also results in a reduction in forecast operating expenditure by [redacted] in nominal terms over the period FY2016-2019.

---

5 [redacted]

6 Appendix 12: Keith Lockey, *The basis for determining Telstra's base year operating expenditure for fixed line services*, April 2015, p 16.

Submission overview

Set out below is an overview of this submission.

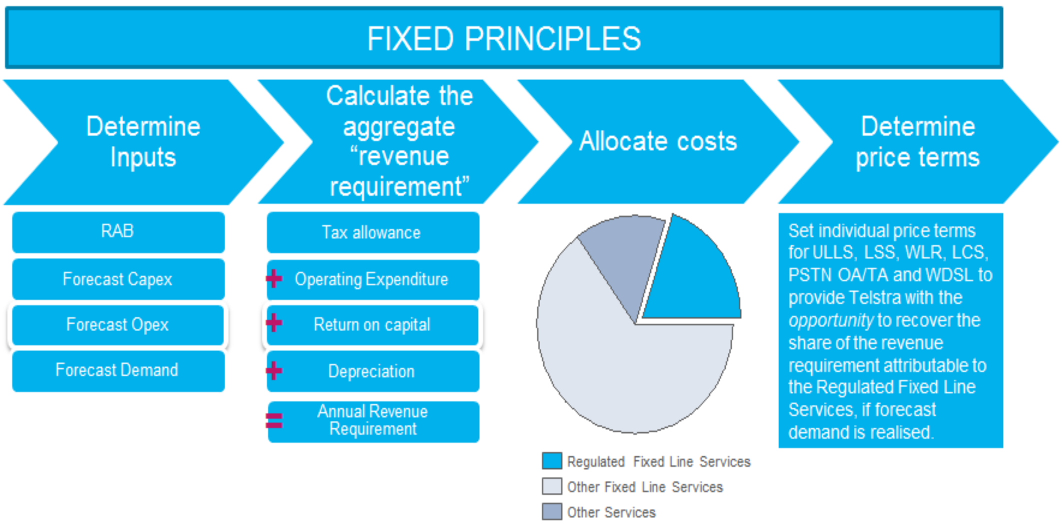
Pricing approach

Telstra agrees with the general framework adopted by the Draft Decision, which is to calculate a revenue requirement based on a set of defined inputs, allocate the recovery of that revenue requirement among network users in a way that reflects their relative usage, and then calculate prices for each service based on this allocation of costs and forecast service demand.

Consistent with the Fixed Principles, the FLSM uses an asset-based approach to determining the BBM revenue requirement and calculating prices. That is:

- each of the building block cost items are calculated for each fixed line network asset class;[7] and
- the costs attributable to each asset class re allocated among all uses of that asset class.

The process is set out below:



Under an asset-based costing method, it is critical that there is consistency between the way costs are attributed to asset classes and the way in which attributed costs are then allocated between users of that asset class. If all uses of the asset class are taken into account in allocating costs, then the costs attributed to the asset class must include all capital and operating costs associated with the relevant assets, regardless of which user caused those costs to occur. It would be fundamentally inconsistent with an asset-based costing approach for all uses of the asset class to be taken into account in allocating costs, while excluding some costs on the basis that they are caused by particular users – or are not related to particular FLSM services.

Several elements of the ACCC's approach involve a failure to consistently apply the asset-based costing methodology required by the Fixed Principles and the BBM, including:

- **RAB adjustments not permitted under the Fixed Principles**. The ACCC has sought to make certain adjustments to the RAB for assets decommissioned or utilised to a lesser extent by classifying these assets as "disposals". However these assets will not be 'disposed of' within any well understood meaning of that term, therefore removing these assets from the RAB is not permitted under the Fixed Principles.

7 [redacted]

- **Exclusion of prudent and efficient expenditure related to fixed network asset classes**. The ACCC has excluded certain expenditure associated with fixed-line network asset classes, on the basis that it is caused by a particular network user (NBN Co). This is fundamentally inconsistent with the asset-based costing approach that is adopted in the ACCC's FLSM. Moreover, excluding the costs that are caused by particular users, while still taking their use into account in allocating costs, will likely lead to under-recovery of prudent and efficient costs associated with the fixed-line network.

- **Errors in the determination of key inputs**. The ACCC has made material errors in its determination of key BBM inputs, including the rate of return and asset lives for fixed line network assets.

Treatment of the effects of the NBN transition

The proposed treatment of the NBN and its impact on Telstra is inconsistent with the Fixed Principles, the statutory criteria and would result in under-recovery of costs from FLSM services. This amounts to a transfer from Telstra's retail customers to its wholesale customers.

The Fixed Principles "lock in" the initial asset base, which was undertaken in the 2011 FAD decision, and for this asset base to be rolled forward each year in a predictable and transparent way. This formula and approach reflects an orthodox and well-understood approach to utility regulation in Australia using a 'building block' pricing methodology.

The replacement in 2011 of a forward-looking TSLRIC framework with Fixed Principles that established the BBM was said by the ACCC at the time to have the benefit of providing greater predictability and certainty and avoiding the risk of windfall gains and losses.[8]

> *Locking-in a value for the RAB will promote predictable revenue and price path, thereby minimising the likelihood of windfall gains or losses. This certainly promotes efficient use of and investment in infrastructure.*

Under this methodology, the only basis upon which capital expenditure can be excluded from the asset base is where either:

- in the case of new, forecast capex – the expenditure does not reflect prudent and efficient expenditure (clause 6.10); or

- for capex which has already been accepted into the RAB – where there has been an "asset disposal" in respect of the asset or assets during the regulatory period.

The notion of an "asset disposal" is a technical and precise one – which is well understood in both financial accounting and regulatory economics. KPMG clearly reject that the accounting requirements for an asset disposal have been met: [9]

> *…the ACCC's classifications of decommissioned assets and assets utilised to a lesser extent as asset disposals are inconsistent with Accounting Standards. These classifications do not meet the conditions of paragraph 14 of AASB118 that are necessary to account for an asset disposal.*

Mr Jeff Balchin says the following, from a regulatory economics perspective: [10]

> *The ACCC's approach is not consistent with the Fixed Principles. I say this because:*

---

[8] ACCC, *Inquiry to make final access determinations for the declared fixed line services – Final Report*, July 2011, p 133.
[9] Appendix 12: KPMG, *The basis of accounting for disposals of assets in Telstra's regulatory asset base for fixed line services* , April 2015, p 5.
[10] Appendix 10: Jeff Balchin, *Response to the ACCC Draft Decision on the impact of the NBN for Final Access Determinations for Fixed Line Services*, April 2015, p 3.

There quite clearly has not been a disposal in relation to the assets. The core ingredient for a "disposal" is that there has been a transaction in relation to the assets in question and, as a consequence, an alternative avenue for the recovery of any remaining cost associated with the assets in question.

More generally, the adjustment proposed by the ACCC will mean that Telstra will not be provided with a reasonable opportunity to recover its costs (including the value of its RAB), and so is not consistent with the intended outcome of the building block approach.

There is simply no provision under the Fixed Principles to "optimise" expenditure out of the RAB *ex post* to reflect a forecast reduction in the future utilisation of the network through falling demand. Indeed, the uncertainty and unpredictability associated with constantly "re-optimising" the network was a principal reason for adopting the BBM approach in 2010 and departing from a forward-looking TSLRIC approach, where the network configuration and relevant assets to meet forecast demand were "optimised" every time tariffs were set.

However, the Draft Decision seeks to return to the "optimisation" approach by interpreting as an "asset disposal" a substantial proportion of the value of FLSM assets that will become less utilised over the next four years – as a consequence of NBN migration. In reality, however, these assets will neither be disposed of nor transferred from Telstra's asset base.

The inconsistency of the ACCC using the first FAD process after the BBM was introduced in 2010 to try to avoid the central objective of the Fixed Principles and the BBM by "optimising out" a substantial proportion of Telstra's asset base, is pointed out by Dr Small: [11]

If the ACCC did indeed contemplate in 2010 that Telstra's RAB could be written down in the manner and for the reasons proposed, the case for even bothering to change the asset valuation method would have substantially evaporated. After all, the proposal seeks to reinstate the very first step in building a TSLRIC model as it was previously done (i.e. prior to the 2010 change). As noted above, the first step involves looking at end-user demand and building a network to serve that demand. This step was deliberately eliminated in 2010 (along with other subsequent steps), but the proposal seeks to re-instate it. If this was contemplated in 2010, there would have been serious doubt over the merits of changing the asset valuation method.

The ACCC Draft Decision reduces the RAB value of Telstra's existing copper and fixed line switching assets by more than [redacted]. Fundamentally, this proposal would force Telstra to transfer to its competitors more than [redacted] between FY2016 and FY2019 – to avoid them sharing the cost of reduced utilisation of fixed services assets and lost economies associated with implementing the Australian Government's NBN policy.

If the ACCC wishes to adjust the RAB value to reflect declining asset utilisation, this should be done through an impairment charge that reflects accelerated depreciation in Telstra's revenue requirement. This cost should be borne by all users of the fixed line network.

The approach of the ACCC is directly inconsistent with the plain meaning and intended operation of the Fixed Principles, and would lead to substantial under-recovery of Telstra's direct costs – undermining efficient investment incentives and the LTIE.

Telstra did not *cause* the NBN transition and does not benefit from it

The NBN transition is unprecedented. No other jurisdiction has sought to impose severe policy levers, in the manner applied in Australia to Telstra in 2010 under the *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* (Cth). The Government's NBN policy sought to force an incumbent to decommission its entire local access

[11] John Small, *Customer Migration Impacts on Telstra's Regulated Asset Base*, February 2015, 4.2

network, and to migrate its entire customer base to a wholly-government owned alternative network.

The NBN policy was introduced independently of Telstra and was to be implemented irrespective of whether Telstra cooperated with the project. It is not reasonable for the ACCC to act as if the NBN was not going to be rolled out in the absence of a deal between Telstra, the Australian Government and NBN Co.

The choice faced by Telstra as described by [redacted] [redacted]l[12] was not whether or not the NBN would proceed. The choice was rather whether Telstra would:

- undertake to structurally separate in a form acceptable to the Government – which would avoid the risk of functional separation and protect its HFC assets and ability to participate in upcoming spectrum auctions; or

- refuse to structurally separate (or undertake to do so only in a form that was not acceptable to the Government) – which would require Telstra to functionally separate and would likely exclude it from access to future 4G spectrum.

Moreover, Telstra was demonstrably worse off (in value terms) under both scenarios and both the Government and the ACCC acknowledged that access seekers – not Telstra – would be the principal beneficiaries of structural reform being undertaken through the NBN migration.

The NBN transition and associated diseconomies of scale are singularly the result of Government policy, and were not caused by any action of Telstra. There is no evidence to support any assumptions or speculation about the effect of the commercial NBN deal, if any (and whether positive or negative) on the timing of the NBN rollout, or migration of services, over the FY2016-2019 period.

Telstra did not anticipate, and is not compensated by deal payments for, the removal by the ACCC of approximately [redacted] in assets and more than [redacted] in prudent FLSM expenditure

In negotiating the deal with NBN Co and the Government, including the value of deal payments, Telstra did not anticipate that the ACCC (in a subsequent FAD process) would endeavour to:

- write off approximately [redacted] from Telstra's RAB by deeming that less utilised equipment amounts to an "asset disposal"; and

- exclude NBN-related capital expenditure of almost [redacted] and operating expenditure (in the propex category) of almost [redacted] relating to duct remediation ahead of NBN deployment – and despite NBN's use of these assets being included in the fully allocated model.

These amounts could also not have been readily anticipated – especially given that they conflict with the intended operation of the Fixed Principles which were settled at or around the same time as the NBN "deal".[13]

The deal payments also did not include or reflect any additional value to reflect an adjustment or shortening of Telstra's copper, duct or local switching asset lives for those parts of the legacy network that would become decommissioned/transferred to NBN Co. While the prospect of the NBN rollout shortening the economic lives of assets was explicitly considered by the Telstra Board Audit Committee at the time that the deal payments were originally determined (in or around 2009-

[12] Statement of [redacted], February 2015, p 4.
[13] Telstra, *Telstra signs NBN Definitive Agreements,* media release, 23 June 2011; Telstra, *Telstra signs Financial Heads of Agreement on NBN*, media release, 20 June 2010; ACCC, *Inquiry to make final access determinations for the declared fixed line services – Final Report*, July 2011.

2010), it was found not to be required in Telstra's annual service life reviews, as noted by [redacted]:[14]

[redacted]

The renegotiation of the Definitive Agreements in 2013-2014 introduced a new transfer in ownership of some copper and HFC assets to NBN Co for use in its fibre-to-the-node (**FTTN**) and fibre-to-the-basement (**FTTB**) connections. However these transfers were not included as part of the general "per subscriber address amount" (**PSAA**) amount paid to Telstra as individual premises were disconnected. Rather, the payments made for copper loops and other infrastructure transferred to NBN Co (including lead in conduits and some HFC infrastructure) were dealt with separately as an "Infrastructure Ownership Payment".[15]

The evidence clearly shows that Telstra's PSAA deal payments were not valued to, and do not in fact, reflect either explicitly or impliedly:

- any adjustment in Telstra asset lives associated with a shortening of useful lives due to the NBN rollout; or
- the cost of any transitional diseconomies of scale associated with reduced demand on the PSTN.

To the extent that under the renegotiated Definitive Agreements, Telstra is now selling some copper lines to NBN Co for use in its FTTN and FTTB connections (for which it receives an Infrastructure Ownership Payment), Telstra accepts that those copper loops should be properly treated as an "asset disposal" in the year in which they are transferred, and should be removed from the asset base at their regulatory values, as proposed in the Draft Decision.

Operating expenditure

Telstra's FY2014 operating expenditure (used as the base for forecasting) is prudent and efficient, and reflects a conservative view of the actual cost to Telstra of operating and maintaining the fixed line network.

Telstra's has strong commercial incentives to undertake only prudent expenditure

The ACCC's consultant WIK repeatedly suggests that Telstra is subject to inefficient incentives to "overstate" or "inflate" its expenditure forecasts. This claim, which is not supported by evidence, demonstrates a lack of understanding by WIK of Telstra's business and the Australian market in which it operates. Specifically:

- [redacted] of Telstra's revenues in FY2014 were derived from the supply of regulated fixed services.
- Only approximately [redacted] of FLSM relevant opex is allocated to regulated fixed services – the rest is required to be recovered from Telstra's unregulated business. In effect, this means that for every dollar of inefficient opex, Telstra would only be able to recover on average [redacted] through FAD pricing. The remaining [redacted] directly reduces Telstra's profitability and hampers

[14] Statement of [redacted], February 2015, p 13.
[15] Telstra, *Telstra signs revised NBN Definitive Agreements*, media release, 14 December 2014.

its competitiveness. Telstra has high incentive for its costs to be efficient, to be competitive in the marketplace and to ensure it is not unnecessarily foregoing returns to shareholders.

Even if Telstra could recover inefficient capex through FAD prices, it would not be commercially sensible for Telstra to do so as the regulated rate of return is substantially lower than the returns that could be made by employing this capital in other unregulated markets. The opportunity cost to Telstra of inefficiency is high.

Base year opex forecast (FY2014) – prudency and derivation from the GL

Telstra acknowledges that the work it has undertaken to provide more disaggregated financial and network data and to develop more detailed and internally-consistent has increased the complexity of the task and has resulted in the need to revisit and make updates to information provided over the course of the Inquiry. However, the provision of more accurate and up-to-date information is essential to ensuring that the costs used to set fixed line services pricing best reflect the intent of the Fixed Principles.

In the context of preparing these submissions, Telstra engaged KPMG to undertake a review of the approach and calculations employed by Telstra to establish the FY2014 (base year) operating expenditure for its FLSM forecasts, derived from its GL.

KPMG identified in Telstra's methodology only one material departure from the applicable principles, and a number of other minor issues: [16]

- Telstra's Network model overstates network maintenance contract operating expenditure by [redacted].
- KPMG does not consider that it is appropriate to use two years' data to develop allocators for a single year's direct operating expenditure for ITS direct, TSO direct (NITO) and ITS and TSO indirect operating expenditure – which leads to a total overstatement of opex by [redacted].
- Telstra Operation business support costs are not attributed to propex. This results in an understatement of opex by [redacted].
- A material error in the manner in which IT systems and applications were identified for the purpose of determining operating expenditure. This has implications across ITS, TSO and the business support and corporate support mark ups. Overall, KPMG identify that this error leads to an overall understatement of opex of [redacted].
- There is an unreconciled difference in propex adjustments, which results in an understatement of attributable opex of [redacted].

Telstra accepted KPMG's findings and adjusted both its General Ledger reconciliation document and the FLSM forecasts, to correct for these issues and errors, as set out in chapter 3 of this submission and Appendix 1. These corrections in aggregate, result in an increase in forecast operating expenditure of [redacted].

Based on the corrected documents and updated modelling, KPMG confirmed that the base year opex had been derived fairly from GL data:[17]

> *The principles and methods used by Telstra to attribute operating expenditure from the General Ledger fairly attribute operating expenditure to asset classes and services forming*

[16] Appendix 12: Keith Lockey, *The basis for determining Telstra's base year operating expenditure for fixed line services*, April 2015, p 16.
[17] Appendix 12: Keith Lockey, *The basis for determining Telstra's base year operating expenditure for fixed line services*, April 2015, p 10.

part of the FLSM for FY2014, taking into account generally accepted accounting and regulatory principles and precedents.

Telstra has also updated the Opex Explanation to reflect the description of the corrected ITS and TSO cost attribution methodology in Appendix 1.

In the course of documenting its attribution of opex from the GL, Telstra also identified that several of the assumptions and methodological decisions made by Telstra are inherently conservative and mean that the base year operating expenditure for FY2014 is likely to understate appropriate FLSM opex.

Examples of conservative assumptions include those in Table 2 below:

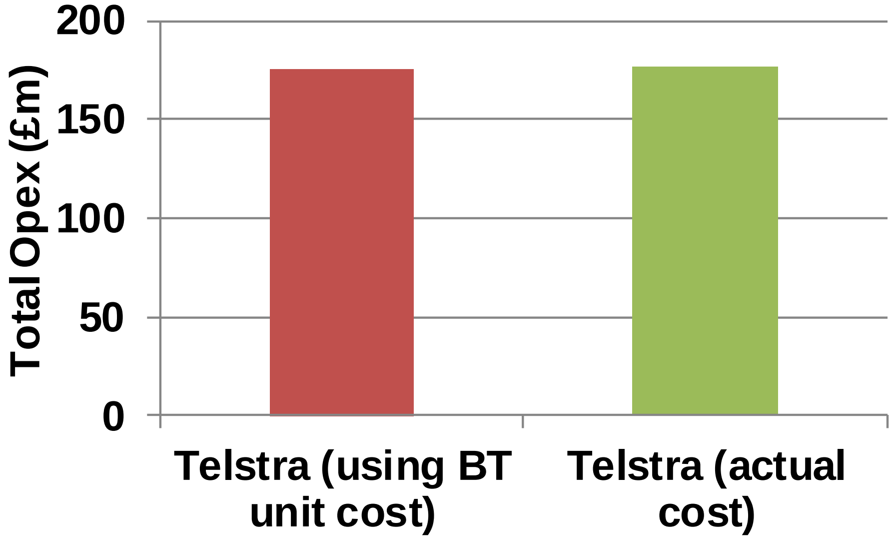
Table 2: Conservative decisions underpinning extraction of base year opex from GL

Assumption	Impact on Telstra FLSM related opex
Restriction of FLSM related opex to Telstra Operations and Wholesale business units only For the purpose of deriving FLSM opex from Telstra's GL data, Telstra only examined costs incurred by either the Telstra Operations or Telstra Wholesale Business Units, given this was where most relevant opex was expected to occur. However, this approach potentially excluded relevant FLSM operating costs incurred by other Telstra business units.	To test the potential materiality of this decision, Telstra undertook a high level analysis of two other Telstra business units – Telstra Retail and the Global Enterprise Services divisions (which services Corporate and Government customers). Based only on a review of these two divisions, Telstra identified [redacted] of potentially relevant operating expenditure (i.e. that appears related to FSLM asset classes or products), but which has not been included in its current forecasts. In the time available, Telstra was not able to undertake a similar review of all of the other Telstra business units.
Networks cost identification Within the Networks Business Unit, Telstra's methodology for deriving opex was highly forensic and resource-intensive, in order to ensure that costs were appropriately identified. This limited the practicality of Telstra's review to only four (CSD, Networks, ITS and TSO) of seven total lines of business within Networks (with the exception of accommodation costs).	Telstra has sought to assess the magnitude of the relevant opex that may exist in other divisions of Telstra Networks, but which have not been included in the FLSM. If Telstra had applied a more generalised approach to identifying opex at the Networks level (and not limited its analysis to only four lines of business) – base year opex for Networks would be [redacted] **higher.**
Accommodation costs Telstra used the results of its internal power management cost model (**NECM**) model as a proxy to apportion total accommodation expenditure, such as rent, power, and associated property overheads, to the FLSM.	Analysis of additional information on the distribution of accommodation costs between FLSM relevant assets and other network properties suggests that the NECM proxy is conservative and may understate relevant accommodation costs by [redacted]

While Telstra does not presently propose to adjust the FLSM forecasts to include this expenditure, any reasonable assessment of the prudency of Telstra's expenditure must take into account the overall conservatism of its approach. These three conservative methodological choices made by Telstra when deriving base year operating expenditure mean that Telstra's approach may have left up to [redacted] in relevant base year opex out of the FLSM.

To further confirm the prudency of its proposed base year operating expenditure, Telstra engaged NERA to undertake a comparison of operating expenditure with an international peer: BT in the UK. Based on this comparison, NERA found that Telstra's operating expenditure was within 1% of BT if it were catering to the same demand volume.

Figure 3: Comparison of Telstra base year opex with opex if Telstra had BT's Unit Costs



Source: NERA analysis of Telstra data and BT current cost financial statements.

Given BT's proven efficiency, which has been accepted by the UK regulator OFCOM[18], this provides further strong evidence that Telstra's base year FLSM operating expenditure can be regarded as prudent.

Prudency of forecast opex

The principal concern raised in the Draft Decision in relation to Telstra's opex forecasts is that, while they are forecast to decline substantially over the FY2016-2019 period by [redacted] in real terms, the ACCC questions whether this is sufficiently responsive to the decline in demand resulting from migration to the NBN.

The ACCC's concern appears to be based on a misunderstanding of how migration to the NBN will impact Telstra. The ACCC state that Telstra's "*network will shrink by* [redacted] *per cent*" over the forecast period[19] - but this is incorrect. Whilst services in operation (**SIOs**) on the network will reduce over this period, the network itself will – and must – remain largely intact.

The ACCC's consultant WIK also criticises Telstra's forecast assumption of its building space usage and argues that Telstra's forecast usage of exchange space over the regulatory period are "highly implausible". It argues that Telstra will need less building/rack capacity due to its migration of customers/services to the NBN and as a result, Telstra's allocation of overcapacity of building space emerging from the transition of customers from fixed line services to NBN is "not appropriate".[20]

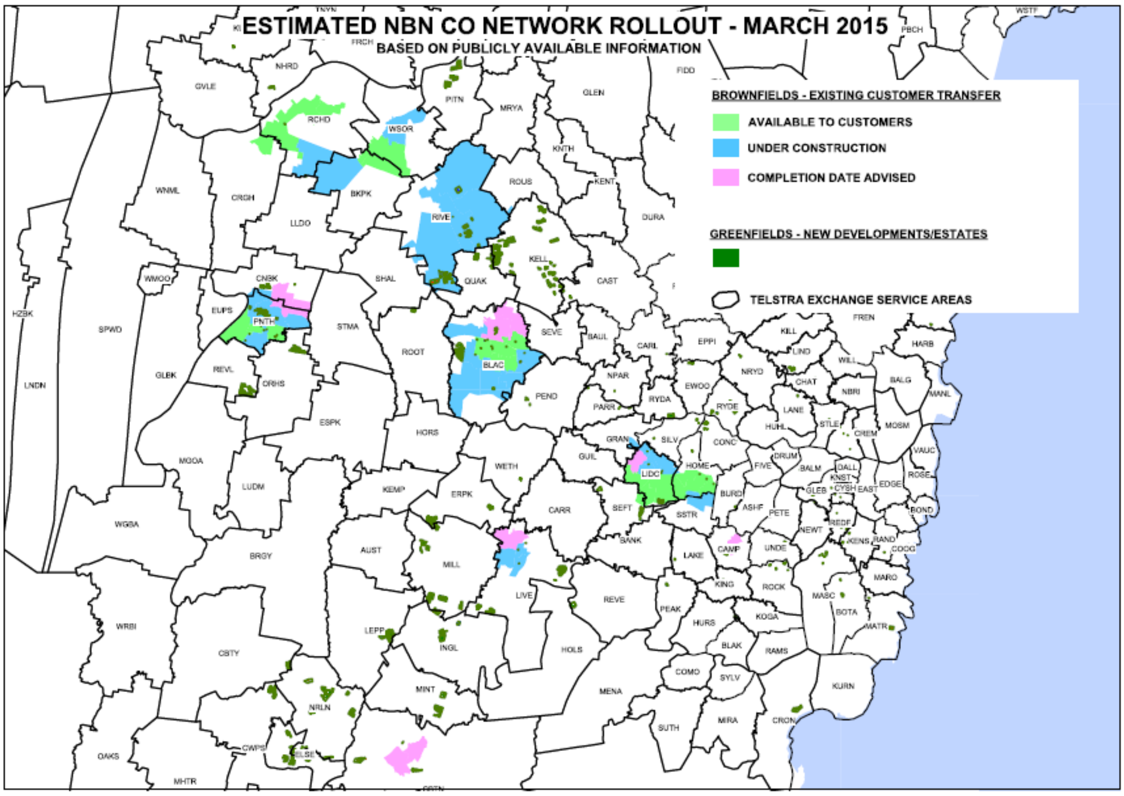
This view that significant operating expenditure savings should be available over FY2016-2019 because less building/rack capacity is required demonstrates a lack of understanding of the practical, commercial and technical realities of the NBN migration and the decommissioning process. As [redacted] states:[21]

[redacted]

[18] Deloitte, *Analysis of the Efficiency of BT's Regulated Operations*, 19 September 2013.
[19] Draft Decision, p 35.
[20] WIK Report, p 2.
[21] Appendix 15: Statement of [redacted], April 2015, p 3.

The reasons that the NBN rollout does not permit a predictable and steady decommissioning of the fixed line network over the period FY2016-2019 in line with the forecast migration of SIOs includes the following:

- The rollout timetable and locations chosen by NBN are irregular and not predictable and do not cover contiguous ESAs. Multiple rollout regions will therefore need to be completed at different times before all of the premises within a single ESA are covered and the ESA is even capable of closure. An example of the “patchwork” impact of the rollout and its coverage of ESAs is set out in the map of Brisbane below.



- As shown in Table 3 below, based on the NBN Co rollout forecasts as at March 2015, only [redacted] ESAs (or approximately [redacted] of Telstra’s ESA network) are expected to be fully covered by NBN rollout regions that have completed their migration of standard services by the first quarter of 2018.

Table 3: Expected coverage of ESAs by the NBN rollout, Q1 2018

% of premises within ESA covered and migrated to NBN by Q1 2018	ESAs	% of total ESAs
100%	[redacted]	
>90%		
>80%		
>50%		
>0%		
0% (no information)		

- Even at the negligible number of ESA locations for which a disconnection date has passed for 100% of premises, Telstra will still be required to continue to supply a range of legacy services, including special services, services to non-premises (e.g. traffic lights) and services to common areas within apartment blocks and other "multi-dwelling units". To date, NBN Co has not announced a replacement for any special services – meaning there is virtually no likelihood of all legacy CAN-supported services and equipment in any ESA being made redundant during this period and all ESAs will continue to serve, and need to be able to continue to connect, active PSTN services. Special services are present in more than [redacted] Telstra ESAs.[22]

- The cost of rationalising and moving active services is extremely high and outweighs any opex savings that may be associated with reduced active equipment within Telstra's network. The only basis upon which rationalisation may potentially be cost effective would be where Telstra could partially or fully exit an exchange (and sell the site) and, even then, this would only likely be for larger and more valuable and saleable sites. However, these sites will typically contain significant network equipment that will support not only customers within that ESA, but also dozens of surrounding ESAs. This means it is not enough for these sites to have reach a "steady state" but also all dependent ESAs.

- Even once the NBN rollout is completed (which will be after the FY2016-2019 period ends), Telstra will be restricted in its ability to exit exchange buildings. In up to [redacted] of ESAs (more than [redacted] sites) Telstra expects NBN Co to serve at least some premises with a combination of fixed wireless and satellite-based services. For these premises Telstra is required to continue make the fixed line network available.

For the upcoming regulatory period (FY2016-2019) in which a steady state is likely to have been reached in a trivial number of ESAs (if any) and where Telstra must continue to supply a number of types of legacy services, no prudent operator would incur the substantial opex associated with rationalising and exiting exchanges early – which would overwhelm any potential savings.

Further, as noted in Figure 2 above, Telstra will not benefit or see costs reduce with respect to the Networks business unit and other fixed costs as a result of SIO decline within an ESA.

As well as its networks-related operating expenditure, Telstra also provides further evidence to demonstrate why IT system and application costs, and related alarm monitoring and diagnostics costs (incurred by its ITS and TSO divisions) will also remain relatively inflexible relative to SIO volumes. As for costs associated with Networks, ITS and TSO will face substantially the same requirements and costs drivers in FY2019 as they do today. The cost drivers for these costs centres is the complexity of the fixed line network, the requirements of the fixed line services and the expectations of our retail and wholesale customers.

Specifically:

- ITS and TSO costs are not driven by changes in end user demand. The key drivers of these costs are:

    - the number and complexity of IT systems required to manage FLSM assets and services;

    - the functionality, service level requirements and service responsiveness required for these IT systems in order to meet the requirements of the business and our customers;

    - the renegotiation of vendor productivity and efficiency savings negotiated with IT vendor partners and realised over the course of a given service contract; and

[22] Based on the detailed ESA rollout information set out in DJP-08 attached to Appendix 15: Statement of [redacted]

- the number and complexity of network alarms – driven in turn by the number of monitored network elements and systems.

- The IT systems operated by Telstra and the costs associated with these systems will continue to be required to support the operation of the networks and equipment within FLSM Asset Classes and the provision and support of the fixed line services over the forecast period. There is no reasonable expectation that the complexity of the underlying network hardware or service offerings will reduce over the forecast period. Equally, Telstra's retail and wholesale customers will continue to expect at least current levels of service and performance in supply of the fixed line services.

- The fact that the number of active SIOs will reduce over the forecast period will not significantly impact on the cost drivers faced by TSO. In addition to operating IT systems (and so facing substantially the same cost pressures as ITS), TSO is responsible for monitoring the network of equipment and service alarms throughout Telstra's networks and to monitor customer experience and service performance. The number of alarms and the complexity of the fixed line network will not decrease over the forecast period. Equally, the impact of any particular event (such as a weather event or the accidental damage to monitored network equipment – such as a fibre optic transmission link) on the network will not reduce as customers migrate to the NBN.

CPI adjustment

Telstra has no material objections to the manner in which the ACCC has updated CPI within the FLSM v2.

However, Telstra has some concerns with the manner in which the FLSM v2 inconsistently applies the CPI adjustment in different parts of the model. The ACCC have applied inflation values and indices inconsistently through the model.

Capital expenditure

The appropriateness of Telstra's forecasting methodology

Telstra's methodology for forecasting FLSM relevant capital expenditure is reasonable and appropriate by combining relevant historic trends with project and asset-specific capital expenditure planning information. Telstra's forecasting approach captures information from across Telstra on capital expenditure in respect of each relevant FLSM asset class – and is drawn from the many hundreds of work programs and thousands of capex projects which Telstra undertakes each year.

In its November 2013 Explanatory Statement, Telstra set out in some detail the process by which it develops "bottom up" capital expenditure forecasts, based on data from its investment planning database.[23] Specifically, Telstra's Investment Management Group plans Telstra capital expenditure at a project level. Telstra has used historic (FY2012-2014) and budgeted (FY2015) capital project expenditure, with similar projects grouped together under program-specific codes (**IMC Codes**). Capital expenditure for each of these IMC Codes is then traced through to the assets to which the expenditure is applied, with expenditure on relevant asset mapped to the FLSM Asset Classes.

This bottom-up capex view for the years FY2012-2015 (historic) is then used as a basis for generating forecasts.

However, before this is done, two important and conservative judgements are made, whereby capital expenditure is excluded from the historic data where it is associated with a capital project that:

[23] Telstra, *Final Access Determination (FADs) Inquiry – confidential response to information request under the BBM RKR,* November 2013 (as amended February 2014), pp 26-28.

- has ended or is due to end in FY2014, and so will not continue through the regulatory period; or
- is one-off or overly variable and so may risk distorting the trend.[24]

Further, in developing the forecasts, no new capital projects (to replace those ending or which are removed because of variability) are incorporated in this process, meaning a highly conservative reduction is made to forecast capital expenditure, and a strong downward bias is present.

This downward bias can be demonstrated by comparing the FLSM forecasts provided by Telstra to forecasts generated on the basis of including all relevant historic expenditure. The conservative approach adopted by Telstra sets aside over [redacted] in historic capital expenditure attributable to the FLSM Asset Classes on the basis that the programs under which this expenditure is incurred are not expected to continue past FY2014. If this expenditure had been included for the purposes of forecasting, capital expenditure on the FLSM Asset Classes for FY2015-2019 would be at least [redacted] higher in nominal terms.

To reiterate what has been set out above, this method of incorporating information through the IMC codes is grounded in evidence and provides the most asset-specific approach that Telstra can reasonably generate. Telstra's modifications to the IMC trends then introduce a strong downward bias in the trend and lead to the capital forecasts being inherently conservative.

For these reasons, Telstra rejects the various criticisms made by the ACCC's consultant WIK in relation to Telstra's capital expenditure forecast methodology, being that:

- [redacted][25]) – WIK goes as far as to claim that acceptable forecasts must be *"based on underlying asset types and asset quantities -* [redacted]*".*[26]
- Telstra's approach, which relies in part on a modified linear trend analysis does not reflect an assessment of underlying asset volume requirements.
- WIK argues that Telstra's approach is "[redacted]" and "[redacted]".[27]

As well as being shown to be incorrect by the evidence above, each of these criticisms reflects a simplistic view of Telstra's network and capital planning approach and is not substantiated by evidence. Mr Smart describes the WIK assumptions as follows: [28]

> *WIK's report is notable for its lack of specific quantitative findings, given that its subject matter—regulatory pricing—is inherently quantitative. Instead, it contains many qualitative judgements that lack empirical foundation or that dismiss quantitative information submitted by Telstra that supports opposite conclusions. Despite claims that Telstra's submissions contain "faults and deficiencies" WIK's report does not establish that any mistakes have been made by Telstra. Therefore, WIK was incorrect to recommend a price freeze instead of the specific pricing proposals put forward by Telstra.*
>
> *…*
>
> *Simply put, WIK has not done the analysis that it was asked to do. Consequently it is forced to guess that regulated prices should be lower. Clearly it is not confident in that guess as it has recommended a price freeze. Instead of evidence, WIK has resorted to supposition in order to support its claim that forecast expenditure is not efficient.*

---

[24] Telstra, *Final Access Determination (FADs) Inquiry – confidential response to information request under the BBM RKR,* November 2013 (as amended February 2014), pp 28-29.
[25] Draft Decision, p 68.
[26] Draft Decision, p 69.
[27] Draft Decision, p 69.
[28] Appendix 13: Mike Smart, *Review of WIK report to ACCC – Final Report*, April 2015, p 6.

Telstra does not forecast its capital expenditure based on underlying asset types and quantities. Telstra's capital budget is in excess of [redacted] and across hundreds of programs of work, impacting thousands of asset and equipment types. Given this scale it is plainly unreasonable to expect Telstra for regulatory purposes to re-orientate its entire capital expenditure reporting system and internal management framework to attempt to develop forecasts to meet these requirements.

Mr Smart further states:[29]

> *It is true that Telstra did not provide physical asset information at the level of detail that WIK would prefer. This information would be extremely detailed and complex. For example, (par. 249) WIK states that a list of cost centres has to be prepared (to derive CVRs and AVRs), and (par. 251) WIK says that a separate primary cost centre would be required for each copper loop cable, each MDF, each DSLAM, and every piece of transmission or switching equipment. In a service area containing more than 10 million SIOs the proposed number of cost centres would be unmanageably large. This proposed bookkeeping structure would be very costly to manage in an accounting sense, but also disproportionately detailed for the task of benchmarking AVRs and CVRs.*
>
> *The apparent intention to benchmark AVRs and CVRs is also fraught with comparability challenges. Population and traffic densities in Australia are vastly different from those in Europe, where WIK's knowledge base is presumably founded (being a German firm).*

The prudency of Telstra's capex forecasts

As noted above in respect of operating expenditure, Telstra has similarly strong incentives to maintain efficient capital expenditure. As well as these incentives, the prudency and conservatism of Telstra's forecasts are apparent in that:

- forecast trends are "capped" where there is historic evidence of increased expenditure with respect to an FLSM Asset Class over time. If Telstra did not impose this cap, forecast capital expenditure reduces forecast capital expenditure on the FLSM Asset Classes for FY2015-2019 would be at over [redacted] higher in nominal terms;
- unlike forecast increases in capital expenditure, where trends evidence a *decline* in expenditure are not capped, these declines are forecast to continue unabated; and
- as set out above, forecasts reflect the removal of capital expenditure across projects from historic data (where these are highly variable or are not expected to continue through the regulatory period), but does not include or project the emergence of any new capital programs over the forecast period.

More importantly, the forecasts produced by Telstra's forecast model are demonstrably conservative. Based on Telstra's recent capital planning for FY2016, Telstra's budget for capital expenditure ion the FLSM asset classes for that year will exceed the FLSM forecasts by more than [redacted] (see Figure 4).

[29] Appendix 13: Mike Smart, *Review of WIK report to ACCC – Final Report*, April 2015, p 7.

[redacted]

The need to increase capital expenditure above what was originally budgeted for FY2016 reflects delays in the rollout of the NBN and unexpectedly strong growth in new estates and residential developments.

This reality highlights the most conservative aspect of Telstra's forecasting process. For FLSM Asset Classes where capital expenditure is considered likely to be impacted by the NBN, forecast expenditure is reduced in proportion to the NBN rollout. This approach assumes a "linear relationship" between the NBN rollout and Telstra's ability to reduce relevant capital costs – based on the nature of the NBN rollout, and the nature of Telstra's fixed line network this relationship is likely to overstate the impact of the NBN on forecast capital expenditure - particularly in the first half of the forecast period. This will particularly be the case where NBN Co is "slow off the mark" in meeting its forecast targets in the early years of the regulatory period.

The fact that Telstra's capital budget with respect to the FLSM Asset Classes significantly exceeds the forecasts for FY2016 is clear evidence of the overall conservatism of the approach taken by Telstra in forecasting capital expenditure.

Treatment of NBN related expenditure

In the Draft Decision the ACCC excludes NBN-related duct remediation expenditure on the basis that it is "incremental" to the NBN roll out and should be recovered from users of NBN Co.[30]

However, duct remediation capital expenditure and propex are both directly associated with FLSM asset classes. Accordingly, for the reasons set out above, a consistent application of the Fixed Principles and a fully-allocated pricing framework requires this expenditure to be included in the FLSM.

All services that make use of Telstra's duct network stand to benefit from the remediation activities, carried out under the NBN duct remediation program. This includes:

- copper-based fixed line services which will continue to operate and be provided during ahead of the ready for service date in any given NBN MTM area and prior to the disconnection date for services in that area;

[30] Draft Decision, p 73.

- special services which continue to operate past the disconnection date;
- copper services in areas where NBN Co determine to use with fixed wireless or satellite services will continue to be provided following the NBN rollout; and
- other services that make use of Telstra's duct network – including the rental of ducts by Telstra Wholesale customers.

It is simply incorrect to assume that once the NBN is established in an area that all other services (including fixed line services) will cease to be supplied or make use of the duct network. Therefore the costs of remediation of the shared asset should be borne by all services that will make use of it over the forecast period.

In order to forecast capital expenditure (and related operating expenditure) associated with NBN duct remediation, Telstra does not rely on the approach adopted for other capital expenditure types (outlined above). Rather information related to the expectations and forecast expenditure arising from the Definitive Agreements (**DA**) was used as the basis for the forecasts.

Following the conclusion of the DA process, Telstra has further reviewed its approach to forecasting. Telstra has updated its estimates for both NBN-related capital expenditure and NBN-related propex. As a result of this updating, NBN-related capital expenditure is now forecast to be [redacted] between FY2015-2019, while NBN-related propex is forecast to be [redacted] between FY2016 and FY2019.

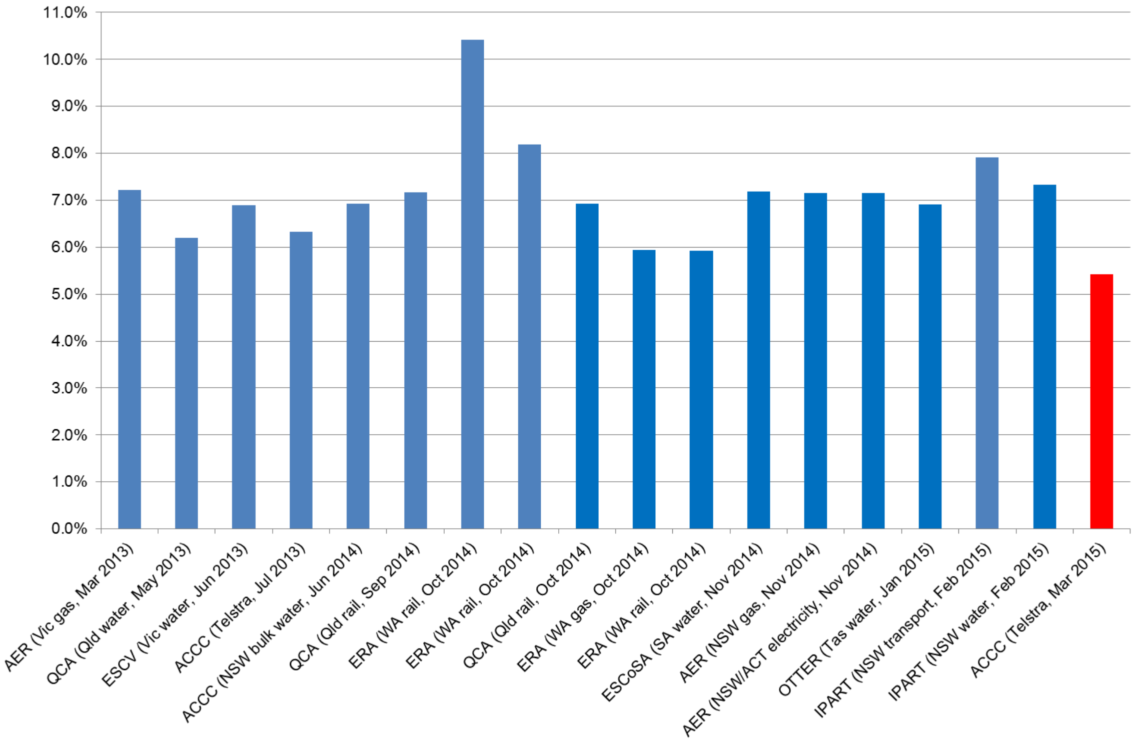
The reason for this reduction in forecast capital expenditure is due to the reappraisal of the responsibilities of Telstra and NBN Co in relation to duct remediation activities and payments from Telstra to NBN Co related to these activities, as well as the requirements for duct remediation arising from NBN Co's MTM rollout.

Return on Capital

The WACC applied in the Draft Decision (5.43%) is significantly lower than in any recent decision of the ACCC in the telecommunications sector. It is more than 3 percentage points lower than in the 2011 FADs (8.54%).

It is also the lowest WACC set by any Australian regulator in any decision that Telstra is aware of over the past two years (Figure 5). WACC values determined by other regulators over this period have ranged from 5.93% to 10.42%, with an average of 7.16%.

Figure 5: Survey of recent WACC decisions (as at March 2015)[31]



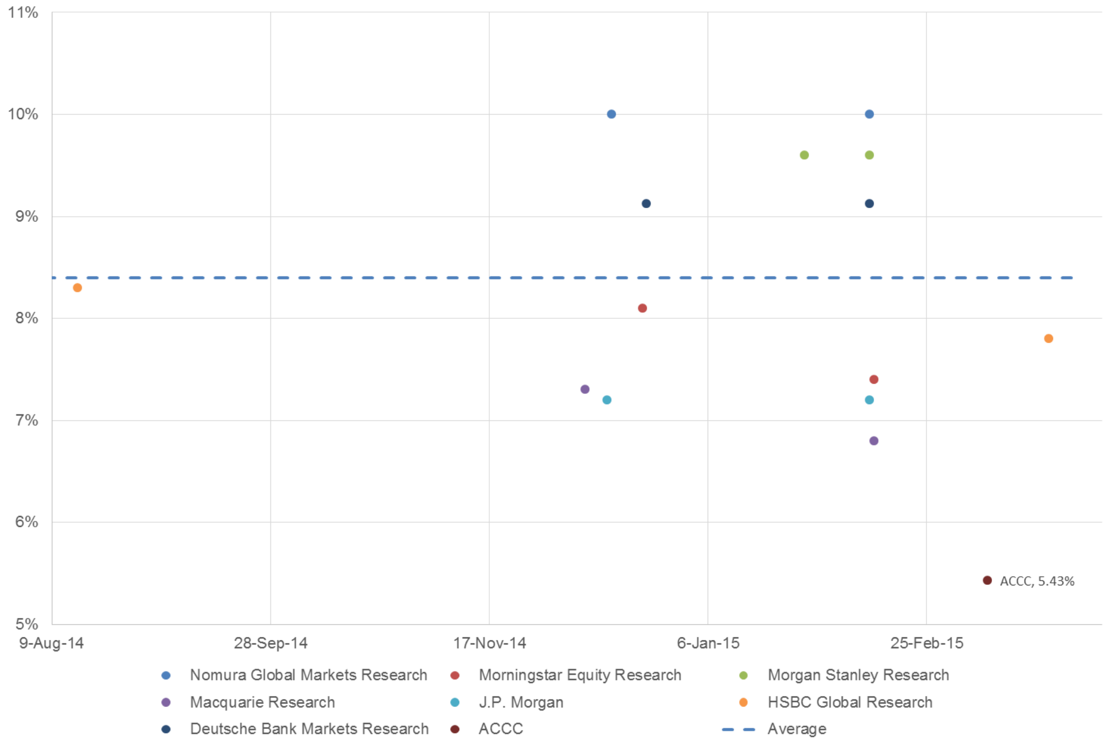
The WACC adopted in the Draft Decision is also significantly lower than any recent estimate of Telstra's cost of capital by independent market practitioners, such as brokers or analysts. Table 4 and Figure 6 below shows that the ACCC's WACC estimate of 5.43% is out of step with market practitioners' views of Telstra's cost of capital, as reflected in recent broker reports. The ACCC's WACC is more than 1% lower than the lowest estimate from recent broker reports and nearly 3% lower than the median estimate from these reports (8.2%).

Table 4: Recent market practitioner estimates of Telstra cost of capital

Research House	Date of report	WACC
HSBC Global Research	25 March 2015	**7.8%**
Morningstar Equity Research	13 February 2015	**7.4%**
Macquarie Research	13 February 2015	**6.8%**
Morgan Stanley Research	12 February 2015	**9.6%**
Deutsche Bank Markets Research	12 February 2015	**9.12%**
J.P. Morgan	12 February 2015	**7.2%**
Nomura Global Markets Research	12 February 2015	**10.0%**
Morgan Stanley Research	28 January 2015	**9.6%**
Deutsche Bank Markets Research	23 December 2014	**9.12%**
Morningstar Equity Research	22 December 2014	**8.1%**
Nomura Global Markets Research	15 December 2014	**10.0%**
J.P. Morgan	14 December 2014	**7.2%**
Macquarie Research	9 December 2014	**7.3%**
HSBC Global Research	15 August 2014	**8.3%**

[31] Telstra survey of recent decisions by the ACCC, AER, QCA, IPART, ESCV, OTER, ESCoSA and the ERA. Refer to Appendix 6 for details.

Figure 6: Comparison of ACCC WACC with broker estimates of Telstra cost of capital



A key driver of this outcome is the ACCC's estimate of the debt risk premium (**DRP**), which is implausibly low and less than half the premium actually paid by Telstra on a very recent long-term bond issue. Further detail on this recent bond issue is provided in Box 1 below and the statement of [redacted] (Appendix 16). Telstra considers that this recent bond issue provides the best possible information on the current cost to Telstra of raising ten-year debt.

Asset Lives

Telstra agrees that the asset lives in the FLSM must reflect the best and most up-to-date estimate available of the remaining economic lives of the relevant assets.

The asset lives Telstra has proposed in its BBM RKR material (as updated) reflect the economic lives of the relevant FLSM asset classes, used for its own internal accounting purposes[32], and are its best and most up-to-date view. Telstra reviews and updates its asset lives for accounting purposes on an annual basis, and its service life review process is independently reviewed by Ernst & Young.

Telstra has already supplied the ACCC with substantial information supporting the BBM RKR asset lives as part of the BBM RKR responses and the current FAD process.[33] However, in response to the criticisms made in the Draft Decision, Telstra provides with this submission further evidence in support of the asset lives that have been proposed, including:

- further detail on how Telstra has calculated its service lives, including how the asset lives in Telstra's internal systems align with the asset classes used by the ACCC (Chapter 6 and Appendix 7); and

[32] The asset classes outlined in the Analysys model are not equivalent to the asset classes in Telstra's internal systems. Telstra has previously highlighted this issue in its Cost Allocation Framework for the ACCC Fixed Line Services Model (see Telstra Corporation, Cost Allocation Framework for the ACCC Fixed Line Services Model, Framework and Model Guide, Version 1, July 2014, p 31). This is especially the case with regards to Switching Equipment, as discussed in chapter 6.
[33] Telstra Corporation Limited, *Final Access Determinations (FADs) Inquiry – confidential response to information request under the BBM RKR*, November 2013, pp 55-58.

- Ernst & Young's explanation of Telstra's service life review process (Appendix 19).

By contrast, the asset lives used in 2011 (and 2013) FADs do not reflect a reasonable, accurate or up-to-date estimate of asset lives for forecast capital expenditure. These asset lives were inaccurate and subject to criticism at the time they were first used, and have become substantially less accurate since. This is because:

- the data that the ACCC has insisted on using is at least five years old (and in some cases up to six years old); and

- in many cases, the data is drawn from a hypothetical cost modelling exercise for which the notional asset classes do not reflect the assets within the corresponding FLSM asset class. For example, the "Local Switching" asset class in the FLSM is made up of PSTN (Ericsson AXE and Alcatel Lucent S12) switching equipment. However, the benchmark asset life used by the ACCC in the 2011 FAD assumes that this asset class also includes the exchange building that houses this equipment. As a result, the ACCC benchmark overstates the economic life of this asset class by over [redacted].

In a number of significant cases, therefore, the asset lives applied in the 2011 FAD (and adopted in the Draft Decision) relate to the wrong assets.

The result is that the asset lives in the FLSM are, in the great majority of cases, substantially longer (between [redacted] and [redacted], only one category has an asset life shorter than Telstra advised) than those used by Telstra, as evidenced in Table 5 below:

Table 5: Comparison of asset lives

Asset class	ACCC average asset life (years)	Telstra average asset life (years)	Difference (%)
CA01 – Ducts and pipes	[redacted]		
CA02 – Copper cables	[redacted]		
CA03 – Other cables	[redacted]		
CA04 – Pair gain systems	[redacted]		
CA05 – CAN Radio Bearer Equipment	[redacted]		
CA06 – Other CAN assets	[redacted]		
CA07 – Other Communications Plant and Equipment	[redacted]		
CA08 – Network Land	[redacted]		
CA09 – Network Buildings/Support	[redacted]		
CA10 – Indirect Capital Assets	[redacted]		
CO01 – Switching Equipment - Local	[redacted]		
CO02 – Switching Equipment – Trunk	[redacted]		

Asset class	ACCC average asset life (years)	Telstra average asset life (years)	Difference (%)
CO03 – Switching Equipment – Other	[redacted]	[redacted]	[redacted]
CO04 – Inter-exchange Cables	[redacted]	[redacted]	[redacted]
CO05 – Transmission Equipment	[redacted]	[redacted]	[redacted]
CO06 – Core Radio Bearer Equipment	[redacted]	[redacted]	[redacted]
CO07 – Other Communications Plant and Equipment	[redacted]	[redacted]	[redacted]
CO08 – Network Land	[redacted]	[redacted]	[redacted]
CO09 – Network Buildings/Support	[redacted]	[redacted]	[redacted]
CO10 – Indirect Capital Assets	[redacted]	[redacted]	[redacted]
CO11 – LSS Equipment	[redacted]	[redacted]	[redacted]
CO12 – Data Equipment	[redacted]	[redacted]	[redacted]

Cost Allocation

The ACCC and its consultant (Analysys Mason) have sought further information in relation to the operation of Telstra's proposed allocators.

Telstra has responded by providing the ACCC and its consultant substantial further detail on the underlying data and calculations used in the estimation of the individual cost allocators for each FLSM asset class reflect and respond to the drivers of costs for each Asset.

In addition, Telstra has undertaken analysis showing the reasonableness of its approach to those allocators questioned in the Draft Decision, including:

- For the CO09 Asset Class (Core Network Buildings and Support) costs are allocated among fixed line services and other Telstra services using a so-called "general allocator". To test the reasonableness of this allocation approach, Telstra has undertaken further analysis to develop a specific allocator for CO09, based on rack usage. The results of this analysis show that not only is the general allocator a reasonable basis for allocation exchange cost among Telstra services, it likely understates the costs otherwise attributable to the regulated fixed line services.

- Telstra's "capacity based" approach to the allocation of transmission costs is also highly conservative and results in less costs from this asset class being allocated to declared services then would be the case under the "cost based" approach previously adopted by the ACCC under the Analysys Mason model. The overall impact if the Analysys Mason cost allocation factors were applied to the FLSM is that the costs attributed to the regulated wholesale services would increase by [redacted] over the period FY2016 to FY2019.

Demand

The ACCC has accepted that Telstra's forecasts of demand are reasonable.

More recent data supports the accuracy of key assumptions underpinning the demand forecasts. In particular, recent data on the rate of customer migration to the NBN is consistent with Telstra's assumptions in this regard.

Determination of Prices and other issues

Term of FADs

Telstra is of the view that the expiry dates for each of the replacement FADs should be 30 June 2019 and that the FAD should not contain a mid-term review.

Fixing fixed line services pricing to apply for the full four year regulatory period without a mid-term review offers all industry participants certainty and predictability – important during the early period of transition to the NBN.

Price structure

In its Draft Decision, the ACCC recognised that a geographically de-averaged price for FOAS and FTAS is more likely to result in cost reflective prices and reflect cost differences between areas. It nevertheless considered that a uniform price for these services should be retained in the interests of price stability.

Given the nature of traffic distributions for FOAS/FTAS, Telstra is of the view that there may be limited practical difference in aggregate terms for most access seekers (and Telstra) when considering a nationally averaged FAD price versus the alternative of a disaggregated approach to traffic terminated on Telstra's PSTN. However, where Telstra is the acquirer of FOAS or FTAS terminated on another fixed access provider's network the significant geographic cost differences noted by the ACCC become relevant in the context of FOAS/FTAS pricing charged by non-dominant network.

Telstra's expectation is that existing commercial arrangements with non-dominant operators will continue to be reflective of the lower costs of supplying FOAS and FTAS on non-dominant CBD and metro-only networks. However, in the unlikely event that non-dominant network operators did seek to charge prices significantly above their costs in CBD and metro areas, then Telstra believes that the ACCC should consider whether to utilise regulatory mechanisms to address this issue. This would be in line with guidance given by the ACCC in its 2011 Fixed Services FAD decision.[34]

Other observations on ACCC modelling

Telstra is aware that modelling of required price changes is complex and potentially subject to modelling or input errors. We would therefore encourage the ACCC to be as transparent as possible around any proposed modelling adjustments, and the calculation of price adjustments.

Telstra is concerned that the modelling underpinning the Draft Decision prices is not sufficiently transparent. Telstra has found it difficult to identify all changes made by the ACCC to the FLSM and impact of these changes on prices.

Telstra has identified at least two modelling errors, in relation to the tax liabilities calculation and application of inflation indices. In order to minimise the risk of further errors in determining final prices, we encourage the ACCC to be as transparent as possible around its approach to the modelling of price changes, and to allow time for an appropriate review of modelling changes.

---

[34] ACCC, *Inquiry to make final access determinations for the declared fixed line services – Final Report*, July 2011, pp 107-108.

Application of SAOs to CBD areas for WLR and LCS

Telstra disagrees with the ACCC's decision to revoke the WLR and LCS exemptions in CBD ESAs. The market evidence available does not support the ACCC's decision.

Specifically, the availability of substitutes such as fibre networks, the significant number of competitors and the small market for voice-only services in CBD ESAs are all strong reasons for continuing (or reinstating) the WLR and LCS exemptions. So too does the proper application of the competition framework in determining whether regulation is warranted.

Consequently, Telstra submits that the ACCC should reconsider its decision and provide for CBD SAO exemptions unconditionally. Telstra's alternative submission is that the ACCC provide for the CBD SAO exemptions to be subject to additional conditions and limitations, to ensure that the SAOs only apply to the extent required to meet the statutory criteria.

1. Pricing approach

Key points:

- Telstra agrees with the general framework adopted by the Draft Decision, which is to calculate a revenue requirement based on a set of defined inputs, allocate the recovery of that revenue requirement among network users in a way that reflects their relative usage, and then calculate prices for each service based on this allocation of costs and forecast service demand.
- However, Telstra considers that the ACCC has erred in its determination of some key inputs. Telstra's specific concerns in this respect are discussed in later sections of this submission.

1.1 Fixed Principles framework

The 2011 FADs for the declared fixed line services included Fixed Principles provisions to apply for a ten year period with a nominal termination date on 30 June 2021 (the **Fixed Principles**). This was intended to give the industry pricing certainty during the transition to the NBN.[35]

The Fixed Principles contained in the current FADs for the seven declared fixed line services lock in key elements of the pricing framework and provide the industry with certainty over time about how the ACCC will estimate prices for these services. At the time of making the Fixed Principles, the ACCC stated:[36]

> *The ACCC considers that the fixed principles provisions should specify the components of the revenue requirement as these components form the 'building blocks' of the BBM approach. Specifying the 'building blocks' will lock in the BBM framework for setting prices and provide certainty about the way the ACCC will estimate prices for future regulatory periods.*

The Fixed Principles accordingly lock in the methodology to be applied in determining prices for the declared fixed line services and establish principles to be applied in determining inputs into this methodology. The Fixed Principles lock in:

- the initial value of the RAB and tax asset base (**TAB**), as at 1 July 2011;
- the method to be applied in rolling forward the RAB, with only certain specified adjustments to be made between regulatory periods;
- the use of a BBM approach to calculating the annual revenue requirement. Under this approach, the revenue requirement is calculated as the sum of specific cost building blocks;
- principles to be applied in determining forecasts of capital and operating expenditure and demand;
- models and methods to be applied in estimating the return on capital and tax liabilities; and
- factors to be applied in allocating costs.

Thus, the Fixed Principles specify the pricing methodology that is to be adopted by the ACCC in subsequent FAD processes (for the term of the Fixed Principles), and constrain the way in which

[35] ACCC, *Inquiry to make final access determinations for the declared fixed line services: Final Report*, July 2011, p 127.
[36] ACCC, *Inquiry to make final access determinations for the declared fixed line services: Final Report*, July 2011 p 130.

inputs into this methodology may be adjusted between regulatory periods. For example, while the RAB may be adjusted between periods, it may only be adjusted in the manner allowed by the Fixed Principles. Similarly, while expenditure forecasts may be adjusted between periods, this may only be done to ensure that the forecasts reflect prudent and efficient costs.

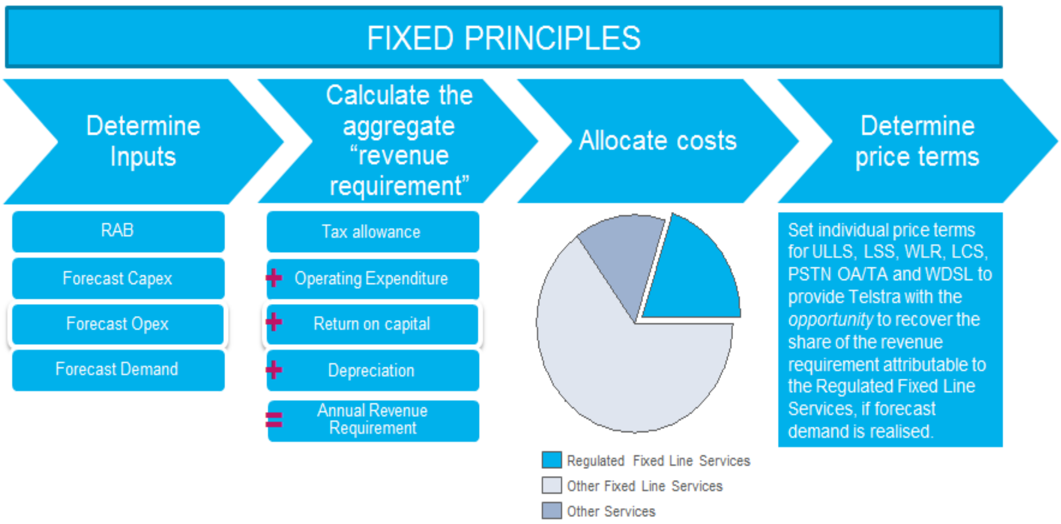
The matters addressed by the Fixed Principles were the subject of a determination by the ACCC in 2011.[37] The ACCC determined that it was in the LTIE to adopt the price-setting methodology that is reflected in the Fixed Principles – i.e. a BBM approach. Moreover, the ACCC determined that is was in the LTIE to "lock in" use of this approach for an initial period of ten years, until June 2021.

The BBM approach is applied to calculate prices for each of the declared fixed line services in the ACCC's FLSM. This broadly involves four steps:

- determination of key inputs, such as expenditure forecasts and the rate of return;
- calculation of the revenue requirement, as the sum of the four cost building blocks – operating expenditure, the return on capital, the return of capital (depreciation) and tax liabilities;
- allocation of the revenue requirement between the services expected to use the fixed line network over the regulatory period, based on their relative usage; and
- calculation of prices for each service to allow for expected recovery of the revenue requirement, by dividing the revenue requirement by expected demand over the regulatory period.

This process is illustrated in Figure 7 below.

Figure 7: Overview of the pricing process



In its commercial decision making, including in considering issues such as the nature and value of NBN deal payments, and in its approach to wholesale pricing, Telstra has relied upon the ACCC acting in accordance with the Fixed Principles in subsequent resets, as it committed to do at the time of the 2011 FAD.

---

[37] ACCC, *Inquiry to make final access determinations for the declared fixed line services: Final Report*, July 2011, p 129.

1.2 Use of an asset-based costing method in the FLSM

The FLSM uses an asset-based approach to determining the BBM revenue requirement and calculating prices. That is:

- each of the building block cost items are calculated for each fixed line network asset class;[38] and
- the costs attributable to each asset class re allocated among all uses of that asset class.

This can be contrasted with the service-based costing methods that were applied by the ACCC prior to 2011. Under the TSLRIC for example, the objective was to identify the long-run incremental cost of delivering a particular service, such as the ULLS.

Under an asset-based costing method, it is critical that there be consistency between the way costs are attributed to asset classes and the way in which attributed costs are then allocated between users of that asset class. If all uses of the asset class are to taken into account in allocating costs, then the costs attributed to the asset class must include all capital and operating costs associated with the relevant assets, regardless of which user causes those costs. It would be fundamentally inconsistent with an asset-based costing approach for all uses of the asset class to be taken into account in allocating costs, while excluding some costs on the basis that they are caused by particular users.

1.3 ACCC pricing approach in the Draft Decision

Several aspects of the approach adopted by the ACCC in the Draft Decision are consistent with the framework above. In particular:

- the use of a BBM approach to determine the revenue requirement; and
- the use of a fully allocated cost framework to allocate cost between users of the fixed line assets on the basis of relative usage.

However, there are several aspects of the ACCC's approach that are inconsistent with the BBM approach and the requirements of the Fixed Principles. These include:

- **RAB adjustments not permitted under the Fixed Principles**. The ACCC has sought to make certain adjustments to the RAB for assets decommissioned or utilised to a lesser extent, by classifying these assets as "disposals". However these assets will not be "disposed of" within any well understood meaning of that term, and therefore removing these assets from the RAB is simply not permitted under the Fixed Principles. This issue is discussed in chapter 2 below.
- **Exclusion of prudent and efficient expenditure related to fixed network asset classes**. The ACCC has excluded certain expenditure associated with fixed-line network asset classes, on the basis that it is caused by a particular network user (NBN Co). This is fundamentally inconsistent with the asset-based costing approach that is adopted in the ACCC's FLSM. Moreover, excluding costs that are caused by particular users, while still taking their use into account in allocating costs, will lead to under-recovery of prudent and efficient costs associated with the fixed-line network.
- **Errors in the determination of key inputs**. The ACCC has made material errors in its determination of key BBM inputs, including the rate of return and asset lives for fixed line network assets. These issues are discussed in chapters 5 and 6.

---

[38] There are some limited exceptions to this, where costs are service-specific, rather than asset-specific. These include costs related to LSS, and certain service-specific costs for the Telstra Wholesale business unit.

2. The ACCC's approach to taking into account the impact of the NBN is erroneous and inconsistent with the Fixed Principles

Key points:

- Telstra acknowledges that the ACCC has, in some places, taken into account the NBN rollout, notably in relation to demand forecasts and the adoption of a fully-allocated pricing model which includes NBN use of relevant asset classes.
- Nonetheless the effect of a number of adjustments proposed by the ACCC in the Draft Decision related to the NBN are directly inconsistent with the Fixed Principles. In particular, the ACCC's proposals to adjust the RAB for decommissioned and under-utilised assets is not permitted under the Fixed Principles BBM framework. Similar, any adjustment to operating expenditure to remove the effect of lost economies of scale would be inconsistent with this framework.
- These adjustments, if applied in the FADs, would result in Telstra under-recovering the costs of supplying the fixed line services by over [redacted] over the next regulatory period. This amounts to a transfer from Telstra's retail customers to its wholesale customers.
- It was not anticipated at the time of the NBN transaction that Telstra would be deprived of an opportunity to recover the cost of supplying legacy fixed line services, and therefore this is not factored into the NBN-Telstra deal payments.
- Telstra did not *cause* the NBN policy and the NBN deal payments do not fully compensate it for the loss of business value which the NBN will cause to its business – therefore there is no policy justification for the ACCC's proposed departures from the Fixed Principles framework to address NBN impacts.

2.1 The ACCC has made a number of erroneous NBN adjustments that have the overall effect of reducing Telstra's FLSM revenues by over [redacted] over the regulatory period

The ACCC, relying to a large extent on input from its consultant WIK, has undertaken a number of adjustments in its application of the FLSM, based on what is said to be a result of the NBN industry transition. The Draft Decision also suggests further adjustments may be made related to NBN impacts.

Telstra is concerned that many of the proposed adjustments to account for NBN impacts are inconsistent with the Fixed Principles.

Further, Telstra considers that the ACCC's justifications for departing from the Fixed Principles are flawed and based on erroneous assumptions regarding Telstra's role in the NBN transition and the nature of its commercial agreements with NBN Co.

The various adjustments are dealt with in more detail later in this chapter, but are summarised in Table 6 below:

Table 6: Summary of NBN adjustments in ACCC Draft Decision

Adjustment	ACCC Draft Decision	Summary of Telstra response	Estimated FY2015-2019 revenue impact
Reflects lease of assets to NBN Co as use of FLSM assets within the fully allocated framework	p 138	Telstra agrees that to the extent that NBN Co uses FLSM assets under lease arrangements, this usage should be properly reflected in the FLSM allocation of costs	[redacted]
Copper cables sold to NBN Co for use in FTTN are treated as an asset disposal and removed at their regulatory value	p 138	Telstra accepts this approach as consistent with the application of the Fixed Principles.	
[redacted] ($FY2009) is removed from the copper cable asset class (treated as an 'asset disposal') to reflect reduced utilisation of copper in forecast non-FTTN areas	p 139	Any forecast reduction in use of copper cables by Telstra does not constitute an "asset disposal". Rather, this amounts to an 'optimisation' of the RAB which is directly inconsistent with the Fixed Principles and the statutory criteria.	
[redacted] ($FY2009) is removed from the local switching equipment asset class (treated as an 'asset disposal') to reflect reduced utilisation of this equipment in forecast non-FTTN areas	p 139	As above, Telstra continues to own and use this equipment – it is not an "asset disposal". The ACCC approach is directly inconsistent with the Fixed Principles and the statutory criteria.	
Removes [redacted] from forecast opex and [redacted] from forecast capex, on the basis that is related to NBN duct remediation and not the supply of FLSM services	p 56 pp 70-72	The removal of expenditure in this way is inconsistent with a proper application of the Fixed Principles – and the ACCC's adoption of a fully-allocated cost model. Costs must be included in the FLSM where they are shown to be related to <u>asset classes</u>, and irrespective of whether they are shown first to relate to specific FLSM services. Once this is done, the allocation of NBN costs from those asset classes to NBN services (and not to FLSM services) is a matter for the FLSM allocation methodology. Any other approach undermines the integrity and consistency of a fully-allocated approach.	
Impact of forecast NBN migration on unit operating costs for its network (through assumed loss of network density and scale) is raised as a potential basis for removing further expenditure as not prudent or efficient	p 141	In areas where costs are more closely linked to demand, Telstra has adjusted operating costs to reflect demand (CSD and Telstra Wholesale). This was accepted by the ACCC. There is no material scope for Telstra to reduce operating expenditure in other parts of its network operations until very late in the NBN rollout, once the disconnection of the legacy ESA network has reached a "steady state". Less than [redacted] of ESAs are forecast to have reached this state by 2018, based on NBN Co rollout plans as at March 2015.	NA (no value has been specified in the Draft Decision)
Total revenue impact of ACCC NBN adjustments ***Note: Because of the manner in which a number of NBN adjustments interact with others, the cumulative impact of all adjustments is different to the sum of the individual adjustments.***			[redacted]

Telstra accepts that the first two adjustments set out in Table 7 are reasonable. However the balance of the adjustments are erroneous, with substantial overall impact which would result in under-recovery by Telstra of over [redacted] in revenue over the FY2016-2019 period (and further loss in future periods).

In this chapter, we address each of the proposed adjustments and respond to the rationale which the ACCC and its consultants have relied upon in justifying a departure from the proper operation of the Fixed Principles BBM framework.

2.2 Adjustments to the RAB for decommissioned and under-utilised assets

In the Draft Decision, the ACCC treats three classes of asset as "asset disposals" for the purposes of rolling forward the RAB:

- assets to be sold to NBN Co;
- assets that are not to be sold, but which are expected to be decommissioned; and
- certain assets that are expected to be utilised to a lesser extent.

For decommissioned copper cables in non-fibre-to-the-node areas, the Draft Decision treats a proportion of the regulatory value of the copper cables asset class as an asset disposal in each year of the forthcoming regulatory period.

To account for an expected under-utilisation of local switching equipment over the FY2016-2019 period, the Draft Decision treats a proportion of the regulatory value of local switching equipment as an asset disposal in each year.

2.2.1 Assessment against the Fixed Principles

(a) **RAB adjustments permitted under the Fixed Principles**

The Fixed Principles prescribe the following method for rolling forward the RAB between regulatory periods.

> *The RAB is to be rolled forward each year according to the formula below:*
>
> $RAB_{t+1} = RAB_t + capex_t - depreciation_t - asset\ disposals_t$
>
> *where*
>
> RAB_{t+1} *= opening RAB for the next regulatory year*
>
> RAB_t *= opening RAB for the current year*
>
> $capex_t$ *= forecast capital expenditure during the current year*
>
> $depreciation_t$ *= regulatory depreciation during the current year*
>
> $asset\ disposals_t$ *= asset disposals during the current year*

The Fixed Principles are prescriptive in this regard. The RAB must be rolled forward in accordance with this formula, and no adjustments are to be made except for those allowed for in the formula.

Under the RAB roll-forward formula, there are only two ways in which the RAB value may be reduced: by the amount of regulatory depreciation that is recovered through prices; or through disposal of assets.

(b) **Meaning of 'asset disposal'**

The term 'asset disposal' is not defined in the Fixed Principles.

However, this term has a well understood meaning, both in accounting practice and in regulatory economics. In both disciplines, the meaning is essentially the same. In both accounting and regulatory economics, the term "asset disposal" is understood to mean a transfer of an asset for some consideration.

The appended expert report of Mr Keith Lockey explains the meaning of the term asset disposal under Australian accounting standards. Mr Lockey explains that they key ingredients for an asset disposal under the accounting standards are as follows:[39]

> *a) Telstra will transfer to a buyer the significant risks and rewards of ownership of the assets; or*
>
> *b) Telstra will retain neither continuing managerial involvement to the degree usually associated with ownership nor effective control over assets sold;*
>
> *Paragraph 14 of AASB118 requires that both of these conditions must be fulfilled for a disposal to be recognised.*

The appended expert report of Mr Jeff Balchin explains the meaning of the term asset disposal in regulatory economics as follows:[40]

> *There quite clearly has not been a disposal in relation to the assets. The core ingredient for a "disposal" is that there has been a transaction in relation to the assets in question and, as a consequence, an alternative avenue for the recovery of any remaining cost associated with the assets in question.*

The above definitions of the term 'asset disposal' reflect the widely understood meaning of this term. Telstra is not aware of any alternative definition having been contemplated at the time the Fixed Principles were drafted.

(c) **Assessment of the ACCC's approach**

In the Draft Decision, the ACCC treats three classes of asset as 'asset disposals', for the purposes of rolling forward the RAB:

- assets to be sold to NBN Co;
- assets that are not to be sold, but which are expected to be decommissioned; and
- certain assets that are expected to be utilised to a lesser extent.

Telstra accepts that assets that are transferred to NBN Co should be classified as asset disposals, and that their remaining RAB value should be removed from the cost base at the time of transfer. In relation to these assets, the core ingredients for an asset disposal (as set out above) are present. Telstra acknowledged this in its October submission, and therefore proposed that assets to be transferred to NBN Co be treated as asset disposals.[41]

However for assets that are merely decommissioned and not sold (e.g. disconnected copper lines that are not transferred to NBN Co) and assets that are utilised to a lesser extent, the core ingredients for an asset disposal are missing. There will be no transaction in relation to these

[39] Appendix 11: Keith Lockey, *The basis of accounting for disposals of assets in Telstra's regulatory asset base for fixed line services*, April 2015, p 6.
[40] Appendix 10: Jeff Balchin, *Response to the ACCC Draft Decision on the impact of the NBN for Final Access Determinations for Fixed Line Services*, April 2015, p 3.
[41] Telstra, Response to Discussion Paper, October 2014, p 76.

assets, no transfer of beneficial ownership or of risk associated with these assets, and no alternative avenue for the recovery of remaining costs. Telstra will continue to own these assets and will continue to bear the capital and operating costs associated with them. They will not be transferred to NBN Co, and NBN Co will have no right to use them. Therefore it is simply incorrect to classify these assets as having been "disposed of".

Accordingly, it would be inconsistent with the Fixed Principles for the ACCC to adjust the RAB for assets that are decommissioned (but not transferred) and/or assets that are utilised to a lesser extent.

In relation to decommissioned and under-utilised assets, Mr Balchin states:[42]

> *The ACCC's approach is not consistent with the Fixed Principles. I say this because:*
>
> *There quite clearly has not been a disposal in relation to the assets. The core ingredient for a "disposal" is that there has been a transaction in relation to the assets in question and, as a consequence, an alternative avenue for the recovery of any remaining cost associated with the assets in question.*
>
> *More generally, the adjustment proposed by the ACCC will mean that Telstra will not be provided with a reasonable opportunity to recover its costs (including the value of its RAB), and so is not consistent with the intended outcome of the building block approach.*

Similarly, from an accounting perspective, Mr Lockey states:[43]

> *… the ACCC's classifications of decommissioned assets and assets utilised to a lesser extent as asset disposals are inconsistent with Accounting Standards. These classifications do not meet the conditions of paragraph 14 of AASB118 that are necessary to account for an asset disposal.*

The ACCC's proposed treatment of decommissioned and under-utilised assets is therefore inconsistent with:

- the plain and orthodox treatment of "asset disposals", as applied in regulatory economics and financial accounting; and
- the plain meaning and intent of the roll-forward provisions of the Fixed Principles.

In the case of local switching equipment, the Draft Decision is also internally inconsistent – because the ACCC has not accepted Telstra's asset lives (as reviewed annually and used for accounting purposes), but preferred a life for new capex in this asset class that is seven times longer.

The adjustment proposed by the ACCC for decommissioned or under-utilised assets is, in effect, an *ex post* optimisation of the RAB under the guise of the asset disposals mechanism. However optimisation of the RAB is simply not permitted under the Fixed Principles. The only adjustments to the RAB are those specified above and the Fixed Principles.

(d) Clarification of Telstra's position in relation to "decommissioned" assets

The ACCC has referred to Telstra's position as being that "*assets expected to be decommissioned should be treated as asset disposals*."[44]

---

[42] Appendix 10: Jeff Balchin, *Response to the ACCC Draft Decision on the impact of the NBN for Final Access Determinations for Fixed Line Services*, April 2015, p 3

[43] Appendix 11: Keith Lockey, *The basis of accounting for disposals of assets in Telstra's regulatory asset base for fixed line services*, April 2015, p 4.

[44] ACCC, *Public Inquiry into final access determinations for fixed line services—primary price terms: Position statement on the treatment of the Telstra-NBN Co arrangements for regulated pricing*, October 2014, p 9.

To be clear, Telstra's position is not that any assets that are merely decommissioned, but not transferred, be treated as asset disposals. As discussed above, Telstra's position is that only assets that are decommissioned *and transferred to a third party* (such as NBN Co) be treated as disposals. This is the widely understood meaning of the term in both financial accounting and regulatory economics.

Telstra believes that a statement made in its October submission may have been taken out of context, and that this may be leading to some misunderstanding of our position. Throughout our October submission we sought to make clear that assets should be treated as disposed of where they are decommissioned *and transferred to NBN Co* – we believe this is clear from the summary section on asset disposals[45] the discussion of NBN impacts on fixed line network costs[46] and the explanation of forecast asset disposals in section 9.2.[47]

To clarify, Telstra's position – consistent with the expert advice referred to above – is that an asset can only be only "disposed of" under the Fixed Principles where there is a transfer of that asset.

2.3 Treatment of NBN-related expenditure

The ACCC excluded NBN-related expenditure on the basis that it is incremental to the NBN roll out and should be recovered from users of NBN Co.[48]

Telstra considers that the ACCC's analysis in relation to NBN-related expenditure is flawed, and is inconsistent with the BBM approach prescribed by the Fixed Principles. For the reasons set out below, Telstra maintains its view that this expenditure must be included in forecasts of opex and capex for the relevant FLSM asset classes.

2.3.1 The ACCC's incremental cost analysis is flawed

The ACCC proposes to exclude NBN-related expenditure on the basis that it is incremental to the NBN roll out. The ACCC appears to consider that any cost that would not be incurred but for the provision of (legacy) fixed-line services must be excluded from the cost base.

Telstra considers that this approach is deeply flawed, and is inconsistent with the asset-based costing approach applied in the FLSM and the use of fully allocated cost framework. The ACCC's approach imagines a world in which there is no NBN rollout, and in which Telstra continues to provide legacy fixed line services on a stand-alone basis.

The reality is, of course, very different. Telstra does not provide the fixed line services on a standalone basis. Rather, the fixed line services are supplied over a network that is also used to supply a range of other services.

It is for this reason that an asset-based costing approach is applied in the FLSM. Under this approach:

- all costs attributable to an FLSM asset class are included in the FLSM; and
- the costs of each asset class are allocated among all users of that asset class, in proportion to their relative usage.

The ACCC appears to recognise that NBN access services are one of the services that Telstra needs to supply over the fixed-line network, as it allows a portion of the FLSM costs to be allocated

[45] Telstra Corporation Limited, *Public inquiry into final access determinations for fixed line services – primary prices,* October 2014, p 13.
[46] Telstra Corporation Limited, *Public inquiry into final access determinations for fixed line services – primary prices,* October 2014, p 38.
[47] Telstra Corporation Limited, *Public inquiry into final access determinations for fixed line services – primary prices,* October 2014, p 76.
[48] Draft Decision, p 73.

to these services. However, the ACCC does not consider that the incremental costs of facilitating NBN access services should be included in the FLSM cost base.

This approach is internally inconsistent and is likely to lead to Telstra under-recovering the costs of the fixed line network. Were NBN related expenditure with respect to the fixed line assets excluded from the cost base, it would not be legitimate or internally consistent to then incorporate NBN Co's use of the fixed line assets as part of the cost allocation framework (**CAF**) — to do so would result in a biased and internally inconsistent set of cost allocations.

The ACCC's incremental cost approach is not only internally inconsistent, it is also impractical. It requires one to hypothesise what the cost of supplying the fixed line services would be "*but for" the NBN roll out*.

The ACCC's assumption is that, but for the NBN rollout, the NBN-related expenditure would have been entirely avoided. However the ACCC does not consider the various other possible states of the world, absent the NBN rollout, such as:

- Telstra upgrading its fixed line network, and needing to remediate ducts and other infrastructure to facilitate this; and/or
- Telstra continuing to supply services over the legacy copper network, and incurring maintenance costs of an ageing network.

It is of course impossible to say what the world would have looked like without the NBN rollout, and what Telstra's expenditure requirements would have been in this alternative scenario.

However it is not necessary to hypothesise this "without NBN" scenario. The fact is that the NBN rollout is occurring, and will rely on use of Telstra's fixed line assets to some extent. It is in this context that the costs of the fixed line network must be forecast and allocated.

By asking "*what would Telstra's expenditure be in the absence of NBN rollout?*", the ACCC is asking itself the wrong question. The appropriate question to ask is: "*given Telstra's circumstances (including the fact that the NBN is being rolled out), does its forecast capital and operating expenditure reflect prudent and efficient costs?*"

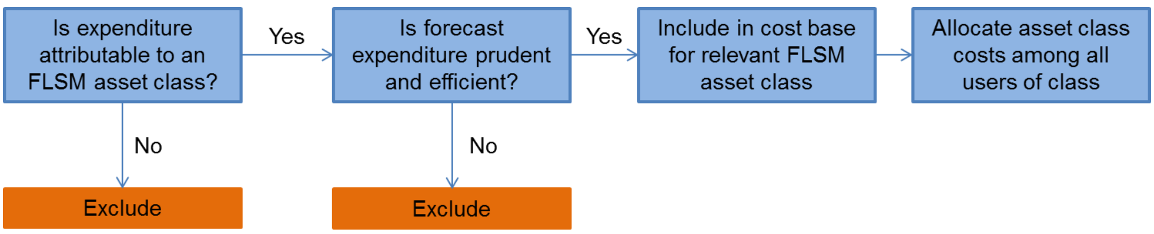
2.3.2 The appropriate framework for assessment of NBN expenditure

In the context of an asset-based costing approach, there are two key questions to be addressed in assessing proposed NBN-related expenditure:

- Is the expenditure attributable to an FLSM asset class or the fixed line services?
- Is the expenditure on the relevant asset class prudent and efficient?

If the answer to both these questions is "yes" then the expenditure must be included in the FLSM cost base. It is not appropriate to exclude expenditure on the basis that it is incremental to the provision of a particular service, particularly in circumstances where that service's use is being taken into account in the allocation of costs.

Figure 8: Expenditure assessment framework



In relation to the NBN-related expenditure included in Telstra's FLSM forecasts, there is little doubt that this is attributable to FLSM asset classes. The majority of the NBN-related expenditure included in the FLSM forecasts is associated with remediation of ducts.

As to the prudency of this expenditure:

- The remediation of duct infrastructure to facilitate the NBN rollout will have a significant long-term benefit for all users of the fixed-line network, and for end users. It is not just Telstra and/or NBN Co that will benefit from this investment over the long-term. All future users of the NBN will benefit from an efficient roll out.

- It would not be prudent for Telstra to forego this investment and simply allow its duct infrastructure to deteriorate. This is true both in the "NBN rollout" state of the world, and in the hypothetical alternative state of the world in which the NBN is not rolled out. Allowing the duct network to deteriorate further would lead to higher costs for end-users over the long term, whether or not the NBN is rolled out.

Telstra would not be undertaking this expenditure on the fixed line network if it were not prudent to do so. Given that Telstra bears most of the risk associated with imprudent expenditure, it is in our interests to ensure that only prudent and efficient investments are pursued.

2.3.3 An alternative treatment of NBN-related expenditure

An alternative approach – but not one that Telstra advocates – would be to effectively ignore NBN Co's use of the fixed line network. This appears to be the approach that the ACCC favours, but which it has not properly implemented in the Draft Decision.

In order for this approach to be properly applied, the ACCC would need to:

- exclude NBN-incremental expenditure (i.e. expenditure that would not be incurred, but for NBN Co's use of the network); <u>and</u>

- ignore NBN Co's use of the network when applying the fully allocated cost framework.

We do not advocate such an approach, because it is fundamentally inconsistent with the asset-based costing approach that is applied in the FLSM. It is also inconsistent with how every other use of the fixed line network is treated.

However, Telstra considers that if such an approach were to be applied, it would result in more costs being allocated to fixed line services than if NBN Co usage and NBN-related expenditure were both properly taken into account.

2.4 Ignoring the effect of lost economies of scale would be contrary to the Fixed Principles

The Draft Decision contemplates (but does not make) adjustments to Telstra's operating expenditure forecasts to exclude the effects of lost economies of scale due to the NBN transition. The ACCC states that access seekers should not incur higher charges for fixed line services as a consequence of the decision by Telstra regarding the future of its copper network.[49]

It is not clear from the Draft Decision precisely how the ACCC proposes adjustment. In particular, it is not clear how the effect of the NBN transition on demand for fixed line services would be distinguished from other factors affecting demand over the forecast period, or how the effect of this on operating expenditure would be identified.

In any event, such an adjustment would be contrary to the Fixed Principles, given that:

[49] Draft Decision, p 141.

- the Fixed Principles require that forecast operating expenditure reflect prudent and efficient costs;

- the fact that the NBN is being rolled out, and the expected impact of this on demand for fixed line services, is not due to any decision by Telstra. Rather, this flows from the implementation of the Government's NBN policy. Therefore the fact of the NBN, and the impact of this on demand for fixed line services, cannot be said to reflect any imprudent decision by Telstra. Rather, it is simply the circumstance in which Telstra (and the industry more broadly) finds itself;

- while Telstra has entered into an agreement with NBN Co in relation to the migration of customers, there is no suggestion that the decision to enter into this agreement was imprudent. On the contrary, the evidence (including the statement of [redacted] provided to the ACCC as part of this inquiry) shows that this decision was highly prudent, given the circumstances Telstra found itself in at the time; and

- as there was no imprudence on Telstra's part leading to the decline in demand for fixed line services, there is no basis to reduce Telstra's operating expenditure to remove the effect of lost economies of scale.

In the absence of any finding by the ACCC that Telstra acted imprudently, there is simply no basis under the Fixed Principles to adjust forecast operating expenditure to ignore the effects of lost economies of scale.

This is explained by Mr Balchin as follows: [50]

> *Thus, the Fixed Principles permit the ACCC to consider the prudence and efficiency of operating expenditure and whether the demand forecasts reflect expected (actual) demand….*
>
> *Therefore, if given the forecast of prudent and efficient operating expenses and demand the per unit cost will increase, then the only outcome that is permitted by the Fixed Principles is that the increase in per unit cost be permitted to flow through into prices. There is no scope for the ACCC to deny the change in prices on the basis that in correct response to the increase in per unit operating costs that is caused by a decline in demand is for these to be reflected in full in prices. . To attempt to "engineer" an outcome that is anything different will mean that Telstra will not have an opportunity to recover its costs, and so be inconsistent with the objective behind the building block approach. Indeed, it is worth noting that if fixed line services were regulated for the first time today, there is no question that a full recovery of operating costs would be allowed.*

2.5 The ACCC's justification for these departures from the Fixed Principles framework is flawed

The ACCC appears to consider that its proposed departures from the Fixed Principles BBM framework to account for NBN impacts are justified on the basis that either:

- Telstra *caused* the NBN migration by entering into a commercial agreement with NBN Co; or

- was, at the very least, *fully compensated for* the cost of transition and associated diseconomies through the agreed deal payments.

For example, in relation to the proposed adjustment for decommissioned and under-utilised assets, the ACCC states – with our emphasis: [51]

[50] Appendix 10: Jeff Balchin, *Response to the ACCC Draft Decision on the impact of the NBN for Final Access Determinations for Fixed Line Services*, April 2015, p 20.
[51] Draft Decision, p xi.

Decommissioned assets: For copper cables in non-FTTN areas, a proportion of the regulatory value of the copper cables asset class is treated as an asset disposal in each year, with that proportion being based on the expected rate of the FTTP and HFC rollout.

For assets used to a lesser extent:

> *Local switching equipment will become progressively under-utilised over the next regulatory period. The RAB value of this asset class will fall at a much slower pace than the decline in usage due to the migration of services to the NBN.* ***<u>The ACCC considers that users of the fixed line network should not bear higher costs of this asset class which arise solely because of the Telstra-NBN Co arrangements.</u>*** *To account for this under-utilisation, a proportion of the regulatory value of local switching equipment is treated as an asset disposal in each year, with that proportion being based on the expected rate of the overall NBN rollout.*
>
> *Data equipment will also be used to a lesser extent but does not require an adjustment because the RAB value for this asset class is forecast to decline in line with demand due to declining capital expenditure and the short asset lives of these assets.*
>
> [Emphasis added]

The implication of this statement appears to be that Telstra caused an increase in unit costs of supplying fixed-line services by entering into an agreement with NBN Co, and therefore Telstra alone must bear the consequences of this.

The ACCC's consultant, WIK further argues that Telstra must have been compensated for any impact of the NBN transition through its agreement with NBN Co.[52] The implication of this appears to be that Telstra need not be allowed an opportunity to recover certain costs related to the NBN transition through regulated charges for fixed-line services, since it will be compensated by NBN Co.

Neither of these issues is strictly relevant to whether the proposed adjustments are consistent with the Fixed Principles. However for completeness, we address these claims below.

As discussed below, it is simply incorrect to assume that Telstra either caused the NBN transition, or was fully compensated for it through commercial arrangements with NBN Co. The NBN transition was imposed on the industry as a matter of Government policy. Further, the purpose of the commercial arrangements with NBN Co was not to compensate Telstra for all of the consequences of the NBN rollout, and NBN Co had no incentive to provide such compensation.

2.5.1 Telstra did not cause the NBN industry transition

The NBN transition is unprecedented. No other jurisdiction has used severe policy levers, in the manner applied in Australia to Telstra in 2010 under the *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* (Cth), to seek to force an incumbent to decommission their entire existing fixed local access networks, and to migrate their entire customer base to a wholly-government owned alternative network.

Telstra understood that the legislative amendments forced upon it an unenviable choice (described by [redacted], at para 11 of his statement), being either to:[53]

- *undertake to structurally separate in a form acceptable to the Government* – which should avoid the need for functional separation, and which would enable Ministerial exemptions to be granted allowing Telstra to participate in the spectrum auctions and to avoid the need for Telstra to divest HFC assets; or

[52] WIK Report, p 24.
[53] Statement of [redacted], February 2015, p 4.

- *refuse to structurally separate (or undertake to do so only in a form that was not acceptable to the Government)* – which would require Telstra to functionally separate its fixed line business, and which the Minister had indicated would be likely to mean that Telstra did not have the opportunity to participate in the upcoming spectrum auctions.

As noted below, Telstra was substantially worse off under both scenarios – irrespective of the ultimate amount agreed as deal payments.

Contrary to the conclusion implicit the Draft Decision, it was **government policy** – and not any agreement between Telstra and NBN Co – that resulted in a mandatory industry shift from one technology to another, resulting in a substantial future reduction in demand for services over the legacy copper network.

At the same time, while Telstra was demonstrably worse off (in value terms), both the Government and the ACCC acknowledged that access seekers – not Telstra – would be the principal beneficiaries of structural reform being undertaken through the NBN migration. [54]

Moreover, Telstra's decision to "cooperate" with the structural reform by entering into an agreement to progressively disconnect services is likely to have reduced overall industry transition costs, given that without it the entire industry would have faced the prospect of a longer and slower migration process – increasing the likely transition costs for access seekers.

Mr Smart makes the following observation: [55]

> *To insist that access seekers bear no NBN-related scale diseconomy costs because they didn't cause the diseconomy is to priorities s152BC(1)(c) over s152BCA(1)(b) of the Competition and Consumer Act (CCA).*
>
> *….*
>
> *By precisely the same logic as WIK applies in par. 311, Telstra should not bear NBN-related scale diseconomy costs because Telstra didn't cause them either.*
>
> *A position that balanced the two subsections of the CCA (as the ACCC is required to do) would involve partial sharing of the NBN-related diseconomy costs by Telstra and access seekers. Such a sharing would result from the pricing proposals put forward by Telstra in their submissions to the ACCC.*

There is, quite simply, no basis for any finding by the ACCC that Telstra "caused" diseconomies associated with the NBN migration so as to justify the RAB, expenditure and asset life adjustments proposed in the Draft Decision.

2.5.2 Telstra is *not compensated* through the deal payments for the more than [redacted] now proposed to be removed from Telstra wholesale revenues by the Draft Decision

As noted above, the Draft Decision appears to proceed on an assumption that Telstra has been somehow compensated for diseconomies associated with the industry transition. The Draft Decision states:[56]

> *The ACCC notes that the migration payments received from NBN Co under the Definitive Agreements provide replacement revenues to Telstra.*

---

[54] Explanatory Memorandum, Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2010.
[55] Appendix 13: Mike Smart, *Review of WIK report to ACCC*, April 2015, pp 6-7.:
[56] Draft Decision, p 140.

The ACCC's consultant, WIK, is more explicit, arguing that Telstra must have been compensated for any impact of the NBN transition through its agreement with NBN Co. WIK states:[57]

> *A rationally acting operator would co-operate with NBN if it would (at least) be fully compensated for any economic loss due to the economic presence of the NBN. This operator would request to be compensated for any costs of stranded assets (which could also be an overcapacity) due to the migration to NBN. Insofar as Telstra is facing fixed costs, the migration of customers to the NBN does not decrease costs to the same extent as demand is decreasing. The degree of fixed asset utilisation decreases due to migration. For stranded assets and occurring overcapacities the legacy network owner would (in a competitive market) no longer get compensation from other users. These stranded assets and the value of overcapacities would not occur if the NBN had not emerged. Insofar they are incremental to the NBN. The rationally acting legacy network operator would allocate those costs to the option of co-operating with NBN Co. Otherwise he would compete to avoid (or reduce) stranded assets and overcapacities and would seek economic compensation from fixed line users (at the retail and wholesale level).*

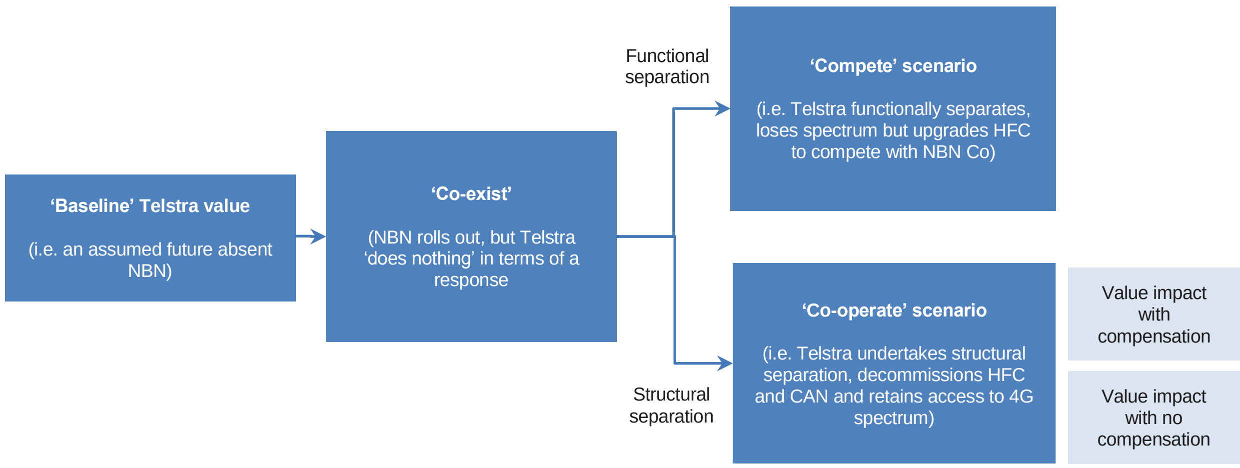
This is simply not correct. Telstra's shareholders did not approve the commercial arrangements with NBN Co on the basis that Telstra would be fully compensated for the economic effects of the NBN transition. By the time Telstra entered into these commercial arrangements, the Government had established its NBN policy, and the economic effects of the NBN transition had already crystalised. Therefore the decision to be made by Telstra shareholders was simply whether to co-operate or compete with NBN Co, not whether to face the reality of the NBN rollout. The fact of the NBN rollout would be faced by Telstra in either the co-operate or the compete scenario, and therefore Telstra did not seek to be compensated for the effects of the NBN rollout through payments for co-operation. Similarly from NBN Co's perspective, it had no incentive to compensate Telstra for the effects of the NBN policy.

A large and continuing wholesale customer NBN subsidy of the kind proposed in the Draft Decision was not anticipated at the time of the NBN transaction and is not factored into the value of NBN-Telstra deal payments.

(a) Telstra's approach to determining the value of deal payments

The value of deal payments was calculated to help close the "value gap" for Telstra between alternative worlds in which Telstra either competed with the NBN or the situation where it cooperated. A simplified overview is set out in Figure 9 below.

Figure 9: Simplified overview of Telstra's staged approach to NBN value analysis



[57] WIK Report, p 24.

Telstra identified that the introduction of the NBN policy exposed it to a substantial loss of value – whether or not it cooperated with the migration process. In the statement of [redacted], provided to the ACCC in February 2015, [redacted] said in this regard (at para 23):[58]

[redacted]

(b) **No change to asset lives**

The deal payments did not include or reflect any additional value to reflect an adjustment or shortening of Telstra's copper, duct or local switching asset lives for those parts of the legacy network that would become decommissioned/transferred to NBN Co.

While this was explicitly considered by the Telstra Board Audit Committee at the time that the deal payments were originally determined (in or around 2009-10), it was found not to be required in Telstra's annual service life reviews, as noted by [redacted]:[59]

[redacted]

[58] Statement of [redacted], February 2015, p 7.
[59] Statement of [redacted], February 2015, p 13.

[redacted]

By contrast, the approach proposed by the ACCC in the Draft Decision would have the effect of stranding approximately [redacted] in copper cable and switching equipment asset value, contrary to the Fixed Principles.

It is also relevant, in this regard, that the analysis undertaken above was completed in parallel with the ACCC's introduction of the BBM and associated Fixed Principles in 2010-2011. While Telstra objected to elements of the final 2011 FAD pricing decision, it had no cause to anticipate that the ACCC would depart directly from the Fixed Principles (and its own assurances[60]) in a future FAD process to undertake an *ex post* write down of parts of its asset base, using the NBN rollout as justification for shortening otherwise approved asset values which had been approved and 'locked in' to the opening RAB in 2011.

(c) **No "replacement revenue"**

As explained above, the deal payments do not compensate Telstra for any diseconomies of scale associated with the transition, or any associated shortening of asset lives.

To the extent that the deal payments operated as "replacement revenue" this reflected an assessment of the overall value loss to Telstra associated with losing control of its own business model as an integrated operator of local access copper and HFC networks – and the ability to upgrade and operate this over time.

As [redacted] explains: [61]

[redacted]

[60] ACCC, *Inquiry to make final access determinations for the declared fixed line services* – Final Report, July 2011, p 133 where the ACCC notes "…adopting a BBM approach will promote the LTIE for the following reasons: locking-in a value for the RAB fosters predictable revenue and price paths, thereby minimising the likelihood of windfall gains or losses. This certainty promotes efficient use of and investment in infrastructure…".

[61] Statement of [redacted], February 2015, p 15.

The value of the payments certainly did not contemplate that the ACCC would depart from the Fixed Principles – or operate as "replacement revenue" for future substantial regulatory asset write-downs, which directly contravened the BBM approach put in place by the ACCC around the same time.

2.5.3 The reasoning in the Draft Decision, and the rationale of WIK in particular, is not grounded in reality

A number of the other aspects of the reasoning of WIK, that appear to support the final approach adopted to NBN adjustments in the Draft Decision, are flawed.

For example:

- WIK argues that "*If expected revenues are below economic costs, the concerned undertaking will have to leave the market*."[62] This argument ignores the fact that Telstra is unable to leave the market for declared services, even when expected revenues are below economic costs.

- WIK finds that falling prices would not harm Telstra as, amongst other things, technological improvements mean that the total cost curve is falling over time. This is based on a view that, if it operated efficiently, Telstra would use substitute technologies, such as fibre loops[63], with lower opex requirements. This denies the intended effect of a move from a TSLRIC framework to a BBM, in which capex and opex prudency is not assessed ex post by reference to a "modern equivalent asset" – but provides for a predictable roll forward of the *existing* asset base, and the prudent operation of *those assets*. It also rejects the obvious fact that technology choice is not something which Telstra is free to make, but is mandated by the service descriptions of declared products.

- WIK states in many places[64] that FLS customers should not bear the increasing average costs that result from reduced utilisation of fixed cost assets. It is inconsistent on one hand to force an asset owner to share scale economies with customers but on the other hand to expect the owner to bear scale dis-economies alone.

2.6 The proposed adjustments are unreasonable and directly inconsistent with *all* of the relevant legal requirements governing the FAD pricing process

The ACCC's proposed approach is directly inconsistent with the statutory criteria, standard regulatory practice (including the ACCC's own assurances at the time the BBM was established) and the Fixed Principles, as well as being internally inconsistent and irrational.

2.6.1 Fixed Principles

As discussed above, the Fixed Principles provide for the "locking in" of the initial asset base, which was undertaken in the 2011 FAD decision, and for this asset base to be rolled forward each year in a predictable and transparent way. This reflects an orthodox and well-understood approach to utility regulation in Australia, using a "building block" pricing methodology.

As the roll forward formula makes clear, the only basis upon which capital expenditure may not be rolled forward each year is where either:

- in the case of new, forecast capex – the expenditure does not reflect prudent and efficient expenditure (clause 6.10); or

---

[62] WIK Report, p 121.

[63] WIK Report, pp 121-122 and p 125, where WIK notes "*… fibre loops are still the MEA that is relevant to the valuation of Telstra's remaining copper loops and related ducts*." (para 366). "*However, it is not technology that defines relevant service volumes, but the substitutability of services according to the SSNIP-test*." (para 373).

[64] WIK Report, notably s5.2.3.2, para 81, para 169, para 294, and para 311.

- for capex which has already been accepted into the RAB – where an asset or assets have been disposed of by Telstra during the regulatory period.

There is, simply put, no provision under the Fixed Principles for the ACCC to "optimise" expenditure out of the RAB *ex post* to reflect a forecast reduction in the future utilisation of the network through falling demand. Indeed, the uncertainty and unpredictability associated with constantly "re-optimising" the network was a principal driver for adopting the above BBM approach and departing from a forward-looking TSLRIC approach, where the optimum network configuration and relevant assets to meet forecast demand were "optimised" every time tariffs were set.

The only circumstance under the Fixed Principles in which assets which are part of the RAB may subsequently be removed is where there has been an "asset disposal". As explained above, the concept of an asset disposal is a term of art, with a clear and well-understood meaning in both financial accounting and regulatory economics.

2.6.2 Statutory criteria

The approach taken to NBN adjustments in the Draft Decision are inconsistent with the statutory criteria in s152BCA of the *Competition and Consumer Act 2010* (Cth), and apply them in an unbalanced and unreasonable manner. In particular, the ACCC's approach has the effect of denying Telstra a reasonable opportunity to recover the direct costs of supplying the fixed line services.

If Telstra is unable to recover the direct costs of supplying regulated services, this is likely to lead to an outcome that does not promote the LTIE.

As well as being directly inconsistent with the clear legal and regulatory framework under the Fixed Principles and the statutory criteria in s.152BCA, the Draft Decision's approach to NBN adjustments is internally inconsistent, unreasonable and fails to have regard to the substantial evidence filed by Telstra to date.

Examples of these errors include:

- The Draft Decision says that it will accept the "regulatory values" for assets, but then proceeds through the incorrect use of an "asset disposal" concept to effectively revalue assets to $0, by removing them from the RAB without allowing for any recovery through allowable revenues.

- The ACCC extends the lives of switching equipment to periods that are commercially absurd, whilst then removing the same assets from the RAB on the basis that they are no longer going to be utilised.

- The ACCC acknowledges that copper asset lives need to be shortened to [redacted] so that Telstra has an opportunity to recover those costs, and this is necessary to promote continued efficient investment – but then proceeds to write those (and other) same assets out of the RAB without allowing for any recovery.

- The Draft Decision excludes from the FLSM capital and operating costs that are related to relevant asset classes, on the basis that those costs are caused by NBN Co activities and do not derive from the supply of relevant fixed line services. Yet the ACCC then endorses a fully-allocated model that allocates FLSM costs across *all* users of the relevant assets, including NBN Co.

- The Draft Decision proceeds on the assumption that Telstra will be compensated for any loss of opportunity to recover its costs, despite clear evidence to the contrary.

3. The prudency and efficiency of Telstra's operating expenditure forecasts

Key points:

- Telstra's forecast operating expenditure over the regulatory period is prudent and efficient; reflecting a conservative approach to identify only relevant expenditure associated the fixed line network and services and a prudent forecast model, which reasonably reflects the impact of changes in underlying cost drivers to relevant costs.

- Telstra's FY2014 operating expenditure (used as the base year in forecasting expenditure over the period FY2015-2019) is prudent and efficient, and reflects a highly conservative view of the actual cost to Telstra of operating and maintaining the fixed line network and the provision of the fixed line services.

- Telstra has undertaken a detailed reconciliation of the base year operating expenditure and subjected this work to a full review by KPMG. In response to concerns raised by KPMG, Telstra has reviewed and revised its attribution of operating expenditure. Taking into account the changes Telstra made to address these issues, KPMG conclude that the corrections undertaken by Telstra in the Fixed Services Forecast Model v1.2[65] fairly attribute operation expenditure to asset classes and services forming part of the FLSM for FY2014, taking into account generally accepted accounting and regulatory principles and precedents.

- In addition to having it methodology reviewed by KPMG, Telstra has undertaken a series of additional analyses to test the prudency of its base year expenditure and to show that it is likely that the assumptions made and the approach taken in determining FLSM-relevant expenditure are conservative and understate actual relevant expenditure incurred.

- The forecast trends in operating expenditure used by Telstra in the Forecast Model are highly conservative, in the sense that they are, if anything, likely to overstate the decline in operating expenditure requirements over the forecast period.

- Where Telstra has forecast relatively stable costs with respect to the operation of the fixed line network and associated IT systems, these assumptions are supported by the fact that the NBN rollout is unlikely drive a reduction in these costs over the forecast period.

- There is no meaningful scope to reduce Telstra's network operating expenditure by exiting exchanges or substantially rationalising equipment over the period FY2015-2019 due to the nature of the NBN roll out, requirement for special services and other factors affecting exchanges. Costs to exit exchanges before the NBN roll out reaches a "steady state" would be prohibitive.

The ACCC, and its consultant WIK, have raised a number of concerns with aspects of Telstra's operating expenditure forecasts as a result of which the Draft Decision purports to disallow [redacted] over the regulatory period FY2015 to FY2019.[66]

Principally, the ACCC's decision to disallow this expenditure relates to the following:

- denial of Telstra's upward adjustment of business support levy from [redacted] on the basis that insufficient information was provided;

[65] Referred to by KPMG as the "Fixed Services Forecasting Model v1.3"
[66] Draft Decision, p 10.

- removal of NBN-related propex from the forecast fixed line operating expenditure; and
- an adjustment to Telstra's forecast CPI.

In response to these points:

- With respect to the first point, Telstra trusts that information provided to the ACCC in February 2015, which the ACCC may not have been able to fully take into account in making its Draft Decision, has addressed the ACCC's concerns on the calculation of Telstra Operations' support costs. Further detail on the calculation of the Telstra Operation BU Support mark-up is set out in section 3.5.1.
- Telstra's response to the second point is principally set out in chapter 2 of this submission – as the argument is principally related to a misapplication of the BBM and allocation model, by not permitting costs to be included in the RAB unless those costs are identified as "relevant to the provision of fixed services."
- Telstra has no material objections to the manner in which the ACCC has updated CPI within the FLSM v2.

In addition to the explicit adjustments made to Telstra's forecast operating expenditure in the Draft Decision, the ACCC highlight a number of other elements of Telstra's submission regarding base year expenditure and forecasts on the basis of perceived transparency/traceability and the extent to which operating expenditure varies with declining demand over the regulatory period. The ACCC note that: [67]

> *In the absence of further information from Telstra that demonstrates an improvement in the transparency of its proposed operating expenditures, the ACCC may make further adjustments in the final decision.*

The primary focus of this chapter is to clearly establish the prudency and efficiency of Telstra's operating expenditure forecasts through the provision of the following:

- A summary of the approach used by Telstra in identifying FLSM-relevant operating expenditure from its GL and associated accounting systems and the results of KPMG's detailed analysis of Telstra's approach – including the correction of issues identified by KPMG in the course of their review.
- Further evidence that demonstrates the approach used by Telstra to identify relevant operating expenditure is conservative and is likely to understate actual relevant operating expenditure.
- Detailed evidence as to why the operating expenditure forecasts are prudent and reasonable.

3.1 Chapter Outline

This chapter is structured as follows:

- Section 3.2 provides relevant background on the refinement of Telstra's operating expenditure forecasts.
- Section 3.3 explains why the FY2014 (base year) operating expenditure attributed to the FLSM asset classes is prudent and conservative, by reference to evidence previously submitted by Telstra and further evidence provided with this submission. This evidence includes:

[67] Draft Decision, p 10.

- a comprehensive review of the process for extracting the base year operating expenditure from Telstra's GL;
- a review of the assumptions adopted by Telstra in this extraction process, which shows that many of these assumptions are highly conservative and are likely to have the effect of understating the amount of operating expenditure properly attributable to the FLSM asset classes;
- evidence from international benchmarking, which indicates that Telstra's base year operating expenditure is unlikely to be inefficient; and
- explanation of the incentives faced by Telstra to ensure that it only incurs prudent and efficient costs.

- Section 3.4 explains why Telstra's forecast operating expenditure (for the FY2015-2019 period) reflects prudent and efficient costs. This section will respond to concerns raised by the ACCC and WIK in relation to forecast trends in operating expenditure, and explains why these forecasts are reasonable, and in many cases, highly conservative.
- Section 3.5 addresses other issues raised in the Draft Decision in relation to Telstra's operating expenditure forecasts, including adjustments made by Telstra to the business unit support mark-up ratio, productivity gain assumptions and opex-capex trade-off issues.

3.2 The ongoing refinement of Telstra's operating expenditure forecasts

Since November 2013 when Telstra first submitted its response to the ACCC's BBM RKR, Telstra has revised operating expenditure considerably (downward) for the base year.

Given the significance and breadth of information that has been required of Telstra during the FAD process, Telstra considers that ongoing revisions are to be expected and justified. The mere fact that Telstra has sought to revise its forecasts does not detract from the veracity of the base year expenditure or the forecasts but indeed should give the ACCC and other stakeholders comfort in Telstra's diligence regarding the information provided to date.

As Telstra stated in its November 2013 response to the BBM RKR:[68]

> *At the outset, it is also important to recognise that this is the first time that Telstra has provided information in response to a BBM RKR request. There are significant differences between the approaches that were used to prepare forecasts for the regulatory period from June 2011 to June 2014 (the "Previous Regulatory Period") and the approaches Telstra has adopted to respond to the current BBM RKR request. These differences are due to the greater detail required to be provided under the BBM RKR than was the case for informal data requests made in the context of the Previous Regulatory Period. Those forecasts were provided to the ACCC in response to an informal request prior to the finalisation of the FLSM, the ACCC's determination of what assets should be included in the FLSM, and the ACCC setting the Fixed Principles that apply under the 2011 fixed line services final access determination ("FAD"). At that time there was also limited guidance on the principles to be used in preparing, and the objectives of, the forecasts.*

Collectively, and considering the iterative nature of the FAD process, the changes to Telstra's operating expenditure since November 2013 clearly improved the transparency of the forecast results and have resulted in a material reduction in relevant operating expenditure. Table 7 sets out the process by which Telstra's operating expenditure forecasts were refined (by reference to the forecast value for FY2016). As can be seen, Telstra made a substantial downward revision to its forecasts in its October 2014 submission – as a result of adopting a detailed, cost-driver based

[68] Telstra, *Final Access Determinations (FADs) Inquiry – response to information request under the BBM RKR*, November 2013, p 3.

forecast model for operating expenditure. However since the October 2014 submission, subsequent changes have been relatively small.

Table 7: Refinement of Telstra's FY2016 operating expenditure forecasts

Submission	Total FY2016 opex ($FY2016)	$ change from prior submission	% change from prior submission	Comments
November 2013, BBM RKR	[redacted]	[redacted]	[redacted]	
October 2014, Response to Discussion Paper	[redacted]	[redacted]	[redacted]	Development of explicit cost-driver Forecast Model; netting-off of TUSMA payments.
January 2015, Response to IIC Information Request	[redacted]	[redacted]	[redacted]	Refinement of attribution of network power costs across Asset Classes; correction of error for allocation of Telstra Wholesale business costs; update of LSS opex due to availability of new RAF data.
6 February 2015, Update to consolidated FLSM (v1.1)	[redacted]	[redacted]	[redacted]	Update treatment of TW Indirect expenses; amendments made to remove contractor costs associated with installations; amendments made to propex forecasts.
12 March 2015, Update to consolidated FLSM (v1.2) (accompanying provision of Opex Explanation)	[redacted]	[redacted]	[redacted]	Simplified methodology for CSD; adjustments to the Networks opex for FY2014; adjustments to the ITS indirect opex for FY2014; adjustments to the TSO base opex for FY2014 to correct for inclusion of propex and adjustments to the TSO indirect opex for FY2014; updating of the BU Support Indirect Operating Expenditure ratio to remove excess costs; correction of an error in the Allocation calculations updating of the Unattributables overhead ratio removing cost associated with IT Management and Support (as unable to be verified), and correction of error
April 2015, Response to Draft Decision	[redacted]	[redacted]	[redacted]	Inclusion of IT operating expenditure previously excluded due to omission of relevant IT systems; other adjustments as identified by KPMG

The ACCC's consultant WIK and some other parties have raised concerns with Telstra's updates to its operating expenditure forecasts throughout the FAD process. For example in its Draft Decision, the ACCC states:[69]

> *Since Telstra's October 2014 submission to the discussion paper, Telstra has made several submissions/responses which include material adjustments to its forecast operating expenditures. The ACCC's assessment of Telstra's forecast operating expenditure is based on responses made by Telstra up until January 2015. The ACCC's Draft Decision is to not incorporate Telstra's latest 6 February 2015 response since the proposed adjustments have prompted further concerns regarding the lack of transparency of these adjusted operating expenditures and the lack of time to fully consider responses to these proposals.*

These concerns are without merit for a number of reasons:

- The process of responding to the BBM RKR (the first time that instrument has been used to gather FLSM-relevant operating expenditure information) and then developing a bottom-up, cost driver-based forecast model for FLSM-relevant operating expenditure is inherently complex. Improving the accuracy and robustness of the process used to derive relevant operating expenditure and forecast this expenditure over the regulatory period is clearly in the LTIE.

- Telstra has been transparent in explaining the rationale, method and quantum of any change to its forecasts.

- As is to be expected, the ACCC has raised a number of issues and asked a series of questions regarding Telstra's forecasts during the FAD inquiry. In responding to these questions, Telstra has identified some shortcomings in its previous approach and has sought to immediately rectify these shortcomings.

- In undertaking, and documenting in full detail, the reconciliation of the operating expenditure to the GL (and subjecting this work to independent review by KPMG), Telstra has identified further issues that need to be addressed to ensure the prudency and reasonableness of the forecasts and to ensure compliance with the Fixed Principles.

- The changes need to be put in context. Although Telstra has continued to make refinements to its operating expenditure forecasts, it is clear that the net effect of these changes has decreased rather than increased Telstra's stated operating expenditure forecasts over the course of the FAD Inquiry.

- It is worth considering the alternative case. If Telstra had simply treated its response to the 2013 BBM RKR as "set and forget" then all else equal, the prices faced by our wholesale customers for the set of regulated services would be inflated. Even if the ACCC had determined to amend Telstra's original forecasts, this process would have been less informative and more open to the risk of regulatory error than the approach taken by Telstra of proactively revising and testing the veracity of its forecasts and developing a transparent cost-driver based forecast model.

Telstra's refinement of its forecasts during the FAD inquiry cannot provide a basis for doubting the veracity or reasonableness of those forecasts. On the contrary, the ACCC should have greater confidence in these forecasts given the way in which Telstra has sought to refine its approach over time, and our efforts to ensure maximum transparency around this refinement process.

[69] Draft Decision, 30.

3.3 FY2014 (Base Year) costs attributed to the FLSM are prudent and conservative

The ACCC has expressed concern regarding the veracity, traceability and prudency of Telstra's base year operating expenditure. Specifically: [70]

The ACCC is concerned that for its base-year and forecasts of operating expenditure, Telstra has not demonstrated a transparent and verifiable cost allocation approach that permits sufficient scrutiny of:

- *the traceability of costs from asset class to general ledger*
- *whether costs incurred in Telstra's fixed line cost centres are relevant to the provision of fixed services and*
- *how forecast operating expenditures respond to changes in forecast demand.*

Telstra has therefore not provided sufficient reasons and evidence supporting changes to actual and forecast operating expenditure that would be considered prudent and efficient.

Telstra submit that its FY2014 (base year) expenditures attributed to the FLSM are prudent, efficient and conservative. The document *Further explanation of FY2014 operating costs identified as relevant to the FLSM* [71] submitted by Telstra to the ACCC after the Draft Decision (**Opex Explanation**) addresses the ACCC's concerns regarding traceability and whether costs incurred are relevant to the provision of fixed services. Specifically, the Opex Explanation provides significant detail of the processes undertaken, sources used and judgements made in identification of relevant operating expenditure relating to the FLSM. A brief summary is provided in section 3.3.1 below.

Telstra sought a full review of the approach and calculations set out in the Opex Explanation from experts at KPMG. KPMG identified the following issues in the course of its review: [72]

- Telstra's Network model overstates network maintenance contract operating expenditure by [redacted].
- KPMG does not consider that it is appropriate to use two years' data to develop allocators for a single year's direct operating expenditure for ITS direct, TSO direct (NITO) and ITS and TSO indirect operating expenditure – which leads to a total overstatement of opex by [redacted].
- Telstra Operation business support costs are not attributed to propex. This results in an understatement of opex by [redacted].
- An error in the manner in which IT systems and applications were identified for the purpose of determining operating expenditure. This has implications across ITS, TSO and the business support and corporate support mark ups. Overall, KPMG identify that this error leads to an overall understatement of opex of [redacted].
- There is an unreconciled difference in propex adjustments, which results in an understatement of attributable opex of [redacted].

Telstra addressed all of these matters in a new and updated version of the Fixed Services Forecast Model v1.2 [73] apart from the unreconciled difference in propex adjustments.

---

[70] Draft Decision, p 29.
[71] Telstra Corporation Limited, *Further explanation of FY2014 operating costs identified as relevant to the FLSM*, March 2015 (**Opex Explanation**).
[72] Appendix 12: Keith Lockey, *The basis for determining Telstra's base year operating expenditure for fixed line services*, April 2015, p 16.

Having addressed these issues, KPMG found that: [74]

> *The principles and methods used by Telstra to attribute operating expenditure from the General Ledger fairly attribute operating expenditure to asset classes and services forming part of the FLSM for FY2014, taking into account generally accepted accounting and regulatory principles and precedents*.

A summary of KPMG's findings and an explanation of and corrections to the issues KPMG identified, as well as updated base year operating expenditure figures are provided in section 3.3.3 A copy of KPMG's report is included at Appendix 12.

Further to the findings of prudency from the KPMG review, additional evidence for the prudency and conservative approach used by Telstra in identifying relevant FLSM operating expenditure emerged in the course of preparing the Opex Explanation, and in responding to inquiries from KPMG, it became apparent that many of the decisions made and assumptions used in the derivation of the base year operating expenditure are highly conservative. For example:

- The identification of costs from only two of Telstra's top line business units (**BUs**) means that potentially relevant costs attributed within the GL to other BUs are not captured. A preliminary review of GL expenses for other BUs has revealed that more than [redacted] in potentially relevant expenditure in FY2014 accrues to BUs outside the scope of Telstra's analysis for the purposes of its Fixed Services Forecast Model.

- For Networks (which accounts for [redacted] of total FLSM relevant operating expenditure in FY2014), Telstra has prepared an alternative view of relevant FLSM related Networks expenditure which confirms that Telstra's approach in identifying and assigning relevant Networks expenditure in the Forecast Model was conservative. Had the alternative method have been employed, Telstra would have been able to attribute an additional [redacted] operating expenditure in the base year.

- With respect to Accommodation costs (which accounts for [redacted] of overall operating expenditure in FY2014 and [redacted] of relevant Networks operating expenditure), the use of electricity consumption by FLSM Asset Classes as a basis for attributing maintenance, land tax, rent and other accommodation expenses to the FLSM is conservative and likely understates FLSM relevant costs. A detailed analysis of maintenance costs, land tax expenses, water utility charges and council rates all indicated that the proportion of these costs attributed to the FLSM is understated by the use of the electricity cost allocation.

It is important for the ACCC to consider the implications of these results in assessing the prudency and efficiency of Telstra's operating expenditure forecasts (including the base year values). Details on the analysis undertaken setting out the conservative assumptions underpinning the base year operating expenditure are provided in section 3.3.4.

In addition to the above, Telstra also commissioned NERA to benchmark Telstra's base year operating expenditure against British Telecom. NERA concludes that:[75]

> *The comparison we have made is the best available estimate of Telstra's relative efficiency. Like any such estimate, it is necessarily subject to a margin of error. In this context a 1% difference between Telstra's actual opex and its opex had it had BT's unit costs does not, in our view, constitute evidence of Telstra inefficiency. This is particularly the case given that Telstra is likely also to have a lower customer density than BT (in inhabited areas) and hence, other things being equal, a higher average line length and therefore costs.*

---

[73] Referred to by KPMG as the "Fixed Services Forecasting Model v1.3".
[74] Appendix 12: Keith Lockey, *The basis for determining Telstra's base year operating expenditure for fixed line services*, April 2015, p 10.
[75] Appendix 14: Nigel Attenborough, *The Comparative Efficiency of Telstra*, April 2015, p ii.

> *Recent studies assessing BT's costs have concluded that BT is efficient. We therefore consider that if Telstra's unit opex is comparable to BT's unit opex (as is implied by Figure 1.1), then that provides one indicator of Telstra being regarded as efficient by international standards - recognising that there are important differences between Australia and the UK in population density and dispersion that would also need to be borne in mind.*

A summary of NERA's analysis is provided in section 3.3.5.

NERA's findings are consistent with Telstra's clear incentives to operate in an efficient and prudent manner, as explained in section 3.3.6. The market incentives faced by Telstra given the nature of its business also need to be carefully considered in any assessment of the overall prudency and efficiency of its forecast costs.

3.3.1 Derivation of base year operating expenditure

In response to concerns raised by the ACCC in January 2015 about the degree of transparency in relation to its derivation of opex from Telstra's GL, Telstra provided its Opex Explanation to the ACCC on 12 March 2015.

Telstra acknowledges that its Opex Explanation was not submitted in time to be considered by the ACCC before releasing its Draft Decision. As a consequence, the Draft Decision expressed concern that Telstra has not demonstrated the traceability of costs from the GL to FLSM asset classes.

This section summarises the key elements of the Opex Explanation, but should be read in conjunction with the detailed Opex Explanation already submitted, as well as the KPMG review (Appendix 12 to this submission). As noted above, in the course of undertaking its independent review KPMG identified a number of issues that Telstra has addressed subsequent to the provision of the Opex Explanation.

In broad terms, Telstra used the following approach to identify relevant expenses from its accounting records for the purposes of deriving FLSM base year operating expenditure.

(a) **Identifying GL source data**

Telstra's accounting systems do not systematically record operating expenditure information in a form that enables automatic extraction across FLSM Asset Classes.

Telstra has however been able to derive opex information from its GL accounts – given that this is the most accurate and up-to-date source of this data. A combination of GL source data and information from secondary sources has then been used to determine the allocation of operating expenditure across FLSM asset classes.

In some cases, secondary sources have been used where the information available from the GL does not provide sufficient ability to identify the causative relationship between relevant opex and FLSM asset classes. In these cases, secondary source have been used to ensure that the causative relationships are established. Secondary sources that have been used include other Telstra operating systems (the Telstra Economic Model (**TEM**), Telstra's Joint Networking Costing Model (**NECTAR**) and the NECM) and advice from subject matter experts within relevant parts of the business. Where this further evidence has been used to assist with cost attribution, it has been identified and explained in the material provided to the ACCC as part of the Opex Explanation.

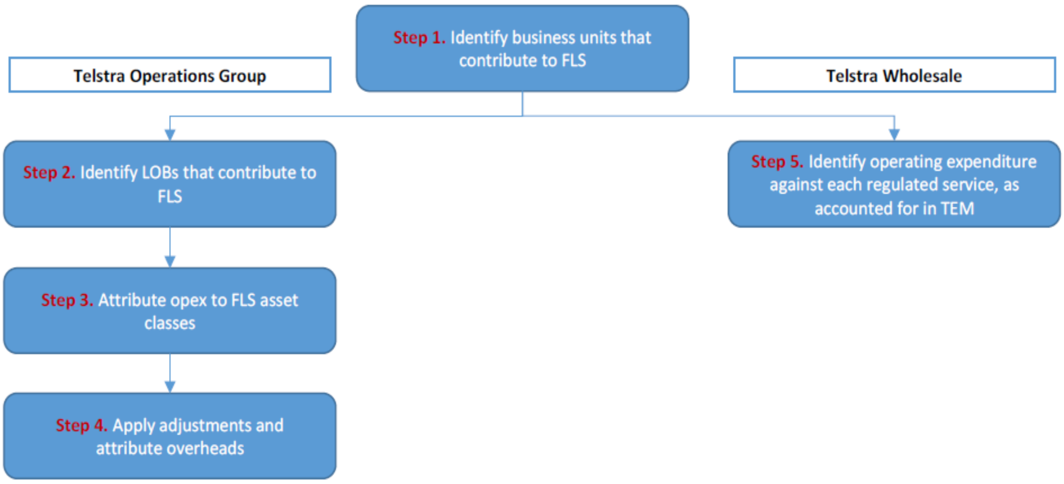
This submission provides a summary of the process used to map opex from Telstra's GL accounts to FLSM asset classes.

(b) **Steps used to derive operating expenditure**

The Opex Explanation sets out in detail the steps taken by Telstra to identify relevant operating expenditure and allocate this across individual FLSM Asset Classes. Depending on the nature of the data source, the process of identifying relevant operating expenditure and allocating that expenditure across FLSM asset classes occurred either sequentially or simultaneously.

The following figure (taken from the KPMG Opex Report) provides an outline of the process Telstra employed to identify and assess operating expenditure relevant to the FLSM.

Figure 10:Key steps involved in identifying opex related to the provision of fixed line services [76]



Below is an outline of the processes employed to identify and assess opex relevant to the FLSM based on the steps outlined above (taken from the KPMG Opex Report).[77]

[76] Appendix 12: Keith Lockey, *The basis for determining Telstra's base year operating expenditure for fixed line services*, April 2015, p 37 – Figure F-1: Steps involved in attributing opex to FLS assets and services.
[77] Appendix 12: Keith Lockey, *The basis for determining Telstra's base year operating expenditure for fixed line services,* April 2015, p 39 – Figure F-2: Roadmap of Telstra's attribution of opex to FLS.

[redacted]

3.3.2 Identification of business units that incur direct operating expenditure relevant to FLSM asset classes

Telstra's total operating expenditure in FY2014 was [redacted]. This operating expenditure was incurred across the 11 Telstra business units: Telstra Retail; Telstra Operations Group; Global Enterprise and Services; Corporate Units; Telstra International Group; Telstra Media Group; Telstra Wholesale Group; Telstra Innovation Products and Marketing; Soufun Group (Discontinued operation); Corporate Accounting Group; Telstra Ventures Group; and Telstra Clear Group.

However, for the purpose of the BBM, Telstra has only assessed costs incurred by two business units – Telstra Operations and Telstra Wholesale. This decision to limit the assessment of relevant operating expenditure to these two Business Units was made for administrative simplicity and because Telstra formed the view that Telstra Operations and Telstra Wholesale were likely to comprise the great majority of opex relevant to FLSM asset classes. Telstra has undertaken a preliminary review of whether a material amount of FLSM relevant operating expenditure is incurred by business units other than Telstra Operations and Telstra Wholesale. Based on this review, [redacted] in potentially relevant expenditure has been identified as being incurred in other Business Units and which is therefore not captured, or reflected in the FLSM opex forecasts. This analysis demonstrates the inherent conservatism of Telstra's approach and is discussed in more detail below at section 3.3.4.

Telstra Operations

Telstra Operations is responsible for all aspects of the design, engineering, architecture, construction and operation of Telstra's networks - including the PSTN and those network assets that support fixed line services and comprising the asset classes in the FLSM. In addition, Telstra Operations is responsible for the technology, information technology, plus the delivery of customer services across those networks. It is the predominant source of FLSM opex.

Within Telstra Operations, four of the 11 lines of business were identified incurring direct operating expenditure relevant to the FLSM.

- Customer Service Delivery;
- Networks;
- IT Solutions; and
- Telstra Service Operations.

For each relevant Networks LOB, Telstra identified relevant FLSM related opex.

(a) **Customer Service Delivery**

The Customer Service Delivery (**CSD**) line of business within Telstra Operations is responsible for two key activities – the provision of services and solutions for Telstra's wholesale and retail customers being activation (the installation, setting up and switching on of products and services) and assurance (the process of maintaining products and services and managing and repairing faults). In FY2014, CSD's total operating expenditure in the GL was [redacted].

Using the approach outlined below, Telstra identified just under [redacted] as attributable to either relevant FLSM asset classes or otherwise attributable to the provision of the fixed line services as indirect operating expenditure. This equates to approximately [redacted] of CSD's FY2014 operating expenditure budget. The diagram below depicts how relevant FLSM expenditure is identified for CSD.

To identify relevant CSD expenditure, Telstra undertook the following steps as part of a "bottom up" analysis of direct and indirect operating expenditure for FY2014.

- Operating expenditure by activity type was extracted using the Activity Based Management (**ABM**) codes from the GL. The ABM codes provide information on the underlying cost in two ways – firstly by identifying the activity type to which the cost relates and secondly by identifying the asset, product/service (where a particular item of operating expenditure is not considered to directly impact on an underlying asset but relates to a product or service supplied over the asset) or the process to which the activity is applied. The ABM codes enable the identification of CSD operating expenditure as: (1) direct operating expenditure relevant to FLSM asset classes; (2) indirect operating expenditure; and (3) all other operating expenditure. This provides full traceability of costs from the GL to the relevant FLSM asset class.

- To determine FLSM relevant operating expenditure for CSD, Telstra included expenditure attributed to asset classes and fixed line products/services using their ABM codes. The allocation rules from the CAF were then used to determine the proportion of cost that can be allocated to FLSM asset classes.

- Direct and indirect operating expenditure relevant to the FLSM is then identified. Expenditure related to assets and products/services, as well as costs associated with recoverable damages constitute direct operating expenditure. Expenditure only attributed to processes is assessed to determine the costs that constitute common support across CSD. These cost categories are considered as indirect operating expenditure and included on a proportionate basis.

(b) **Networks**

The Networks line of business within Telstra Operations is responsible for the planning, design, deployment and performance of Telstra's access, core and service enabling networks, including the fixed line network CAN and Core. In FY2014, Network's total operating expenditure in the GL was approximately [redacted]. Within Networks, three organisational units were individually assessed to identify FLSM relevant operating expenditure:

- Transport & routing engineering;

- Consumer & mobility product engineering; and

- Fixed & data access engineering.

To identify relevant Networks expenditure, Telstra undertook the following steps to identify direct and indirect operating expenditure for FY2014.

- Unlike CSD, ABM data was not used to determine which FLSM asset class relevant costs belonged to. Rather, subject matter experts (**SMEs**) within Networks Finance and Networks more broadly conducted assessments to determined costs relevant to FLSM asset classes. The SMEs relied upon GL information as well as secondary sources and their expertise to determine cost attribution to the FLSM Asset Classes.

- Accommodation expenses (which include electricity costs, building maintenance and rent) incurred across organisational units within Networks were separately identified. For electricity expenses, a proportion of total cost was allocated to the relevant FLSM asset classes on the basis of the relative power consumption for different networks. The proportion of total electricity consumption identified as being relevant to the FLSM was [redacted]. This proportion is also applied to other accommodation costs (e.g. building maintenance, land tax, water utilities and rent) to attribute a proportion of these costs to the FLSM.

- For the three organisational units assessed – Fixed & data access engineering (**FDAE**), Transport & routing engineering (**TRE**) and Consumer & mobility product engineering (**CMPE**) – relevant opex was identified and mapped to the FLSM by identifying expenditure information from the GL and using secondary source information to determine the proportion of costs relevant to the FLSM. Information from the ACCC FLSM asset mapping was used to attribute these costs to the relevant FLSM asset classes.

Using the approach outlined above, Telstra identified just over [redacted] as being attributable to either relevant FLSM asset classes or otherwise attributable to the provision of the fixed line services. This equates to approximately [redacted] of Network's operating expenditure. The above approach is a complex and detailed assessment of relevant costs.

The approach used to identify relevant Networks opex is also demonstrably conservative and results in less operating expenditure being attributed to the FLSM than if an approach equivalent to that used for CSD were to be applied (see further section 3.3.4(b)).

(c) **IT Solutions**

The ITS line of business within Telstra Operations is responsible for the management of Telstra's Information Technology systems – including operating support systems and business support systems used in the management and operations of Telstra's fixed network assets and fixed line services.

To identify relevant ITS expenditure, Telstra undertook the following steps as part of a "bottom up" analysis of direct and indirect operating expenditure for FY2014.

- Telstra identified ITS expenditure in the GL. It then adjusted this to remove operating expenditure associated with projects (propex) as propex is separately estimated within the Forecast Model on the basis of associated capital expenditure forecasting process. As such, propex costs set out in the GL for ITS were removed to avoid double counting. Adjustments were also made to remove accounting adjustments within the GL.

- Telstra mapped all relevant expenditure to five broad categories – IT Professional Service, Salary and associated costs, Information technology costs, Accommodation costs and Other. The first four categories were characterised as direct operating expenditure while Other (which consists of training, motor vehicle expenses, travelling, material usage etc) was characterised as indirect operating expenditure.

- Direct ITS costs are driven by the requirements of owning and managing a set of specific IT systems required for the provision and assurance of services and the operation of Telstra's networks.

- Telstra made use of the allocation process used within the TEM in order to determine the proportion of ITS costs relevant to the FLSM on the basis of costs associated with IT systems for which the TEM process allocates costs either directly to a particular FLSM Asset Class, or to the fixed line services.

- Indirect operating expenditure was included on a proportional basis, calculated as a percentage of direct operating expenditure.

In FY2014, total operating expenditure in the GL was [redacted].

As set out in section 3.3.3, in undertaking its review of the Opex Explanation document and the underlying processes used to determine FLSM relevant expenditure, KPMG raised issues with the approach that was used by Telstra to identify relevant ITS operating expenditure. A subsequent review of the approach and data used and further consultation with SMEs within Telstra Finance revealed that a substantial number of relevant IT systems (and associated costs) had been inadvertently excluded from the FLSM operating expenditure.

Having corrected for these errors, the total amount of ITS operating expenditure attributable to the FLSM in FY2014 is [redacted].

Telstra Service Operations

TSO line of business within Telstra Operations is responsible for the security, reliability, quality and speed of response and restoration of Telstra's network and IT systems. In FY2014, TSO's total operating expenditure in the GL was almost [redacted]. Within TSO, four out of seven organisational units were assessed to identify FLSM relevant operating expenditure:

- Network Service & Facilities;
- Network Infrastructure Operations;
- Service Assurance Operations; and
- Network IT Operations.

The three remaining TSO organisational units were excluded on the basis of the activities undertaken.

To identify relevant TSO expenditure, Telstra undertook the following steps as part of a "bottom up" analysis of direct and indirect operating expenditure for FY2014:

- Telstra identified TSO expenditure in the GL. It then adjusted this to remove propex. These costs were separately estimated through the capital expenditure forecasting process and so propex costs set out in the GL for TSO were removed to avoid double counting. Adjustments were also made to remove accounting adjustments within the TSO GL.

- Telstra mapped all relevant expenditure into six broad categories – IT Professional Services, Salary and associated costs, Information technology, Special project, Accommodation and Other. Expenditure relating to IT Professional service, Salary and associated costs, Information technology, Special project and Accommodation were characterised as direct expenditure, while Other (which consists of training, motor vehicle expenses, travelling, material usage etc) was characterised as indirect operating expenditure.

- The predominant driver of operating expenditure in TSO is labour costs. As a result, costs associated with the three organisational units identified – Network Service & Facilities, Network Infrastructure Operations and Service Assurance Operations – were allocated to the FLSM based on the number of staff allocated to supporting the provision of fixed line services, as a proportion of total staff.

- Costs incurred by the Network IT Operations are more aligned with the drivers of ITS costs. As a result, costs associated with this organisational unit were allocated to the FLSM using the TEM allocation process (consistent with the approach used to allocate ITS costs).

- Indirect operating expenditure was included on a proportional basis, calculated as a percentage of direct operating expenditure.

As for ITS, and as set out in 3.3.3, in undertaking its review of the Opex Explanation and the underlying processes used to determine FLSM relevant expenditure, KPMG raised issues with the approach that was used by Telstra to identify relevant ITS operating expenditure. A subsequent review of the approach and data used and further consultation with subject matter experts (**SMEs**) within Telstra Finance revealed that a substantial number of relevant IT systems (and associated costs) had been inadvertently excluded from the FLSM operating expenditure. To the extent TSO costs are related to the operation of IT systems (NITO), the correction of this issue also impacts TSO costs.

Having corrected for these errors, the total amount of TSO operating expenditure attributable to the FLSM in FY2014 is [redacted].

(d) **For Telstra Operations, apply adjustments and distribute overheads**

Total opex across the four lines of business assessed within Telstra Operations amounted to [redacted]. Several adjustments were then made prior to inclusion in the FLSM to ensure that appropriate costs were captured and to ensure no double counting (by netting off certain costs). The key adjustments are outlined below:[78]

- Electricity costs borne by other parties were removed from Networks opex [redacted]
- [redacted] of project related opex (propex) was removed from CSD and Networks opex. This was to avoid double counting, as Telstra uses it in its capital expenditure model to attribute propex..
- External contractor costs associated with installation activities [redacted] were removed as they are recovered through separate charges for the connection and disconnection of fixed line services [redacted]).
- A share of the costs was attributed to the Telstra Operations Business Support LOB, which manages common activities across all of the Telstra Operations LOBs [redacted]
- Propex estimates derived from the capital expenditure model were included [redacted]
- A share of corporate overheads incurred by Telstra to facilitate the overall operation of Telstra, including the fixed line network [redacted] was included.
- Net contributions received by Telstra under the Telecommunications Universal Service Management Agency (**TUSMA**) funding arrangements for the Universal Service Obligations [redacted] were removed.
- LSS costs were reallocated to avoid double counting of expenditure as the costs of line sharing are already accounted for elsewhere within the Core Asset Classes [redacted]

Telstra Wholesale

Telstra Wholesale is responsible for supplying wholesale telecommunications services. In addition to supplying the range of regulated fixed services to Access Seekers, Telstra Wholesale provides a range of products and services including voice, wireless, internet and data over a variety of technologies for customers in Australia and overseas. In FY2014, Telstra Wholesale's operating expenditure in the GL was [redacted] (excluding NBN Wholesale, depreciation and amortisation). Using the TEM framework, Telstra identified [redacted] as attributable to fixed wholesale services. The approach used to identify relevant expenditure differed from the mapping approach used for Telstra Operations.

The TEM framework uses allocation rules set out in Telstra's accounting systems. It enabled Telstra to apportion costs directly to individual service types (i.e. ULLS, WLR, LSS, WDSL, PSTNOTA and TEBA) rather than attributing costs to asset classes and then allocating those costs according to Telstra's CAF. As opex could be attributed to individual services directly, these could be added directly to the revenue requirement for each specific service in the FLSM.

[78] Appendix 12: Keith Lockey, The basis for determining Telstra's base year operating expenditure for fixed line services, April 2015, p 45-46.

3.3.3 Findings of KPMG review and Telstra's response

As noted above, the ACCC raised concerns in the Draft Decision as to the traceability of costs between Telstra's FSLM forecasts, and its GL.

In addition to providing substantial information on the derivation of opex from the GL in the Opex Explanation, Telstra also commissioned Mr Keith Lockey of KPMG to review both Telstra's attribution of operating expenditure to Fixed Line Services assets and services and to address whether:

- the principles and methods that Telstra has used fairly attribute operating expenditure to the FLSM for the FY2014 base year, taking into account generally accepted accounting and regulatory principles and precedents; and
- Telstra has properly and reasonably applied those principles and methods in attributing its base year FSLM operating expenditure from the GL.

Mr Lockey's report is included as Appendix 12 to this submission.

Mr Lockey identified one material exception, in relation to the manner in which ITS opex was attributed to FLSM asset classes from the GL, where he questioned the small number of IT systems and applications for which opex appeared to be attributed to the FSLM (seven). Telstra investigated the query and identified an error in the manner of ITS attribution that led to a material amount of approximately [redacted] of ITS opex being omitted from FLSM v1.2 (and the Opex Explanation) (the **ITS Error**). Identification and correction of the ITS Error then also has flow-through impacts for the attribution of costs incurred by the TSO line of business.

Telstra investigated the basis for the ITS Error and has addressed it by updating its approach to attributing ITS costs, as well as making necessary consequential adjustments to TSO and the Business Support Mark up.

Telstra has set out the background to the ITS Error and the steps taken to resolve it in the following:

- the description of the ITS Error set out below;
- an updated explanation of the derivation of ITS and TSO opex set out in Appendix 1, which should be read as replacing the equivalent parts of the Opex Explanation, which originally dealt with ITS and TSO opex derivation in chapters 4.3 and 4.4 of the Opex Explanation;
- a signed statement of [redacted] – which sets out the modified approach in the Opex Explanation (Appendix 17); and
- a new and updated version of the Fixed Services Forecast Model v1.2[79], which has had the ITS Error corrected (together with a number of less material adjustments recommended by Mr Lockey).

Mr Lockey was provided with the above materials and, as noted in the extract below, his report confirms that he is satisfied that the steps taken resolve the concern and that the Fixed Services Forecast Model v1.2 reflects a fair attribution of relevant opex from the GL.

Mr Lockey concludes:[80]

> *The Expert's opinion is that:*

[79] Referred to by KPMG as the "Fixed Services Forecasting Model v1.3".
[80] Appendix 12: Keith Lockey, *The basis for determining Telstra's base year operating expenditure for fixed line services*, April 2015, p 10.

(a) *The principles and methods used by Telstra to attribute operating expenditure from the General Ledger fairly attribute operating expenditure to asset classes and services forming part of the FLSM for FY2014, taking into account generally accepted accounting and regulatory principles and precedents.*

(b) *Telstra made a material error in the principles and methods used to attribute operating expenditure from the ITS line of business for FY2014, which resulted in FLSM v1.2 significantly understating ITS operating expenditure (the **ITS Error**) and a number of consequential attributions of operating expenditure for FY2014. While the Expert identified a number of other exceptions, set out in this report, none of these other exceptions were identified (individually or collectively) by the Expert as being significant.*

(c) *The corrections undertaken by Telstra to resolve the ITS Error and the consequential errors, which the Expert reviewed in Fixed Services Forecasting Model v1.3 and associated documentation, fairly attribute operating expenditure to asset classes and services forming part of the FLSM for FY2014, taking into account generally accepted accounting and regulatory principles and precedents.*

(d) *The calculations that Telstra has made to derive the operating expenditure attributable to asset classes and services forming part of the FLSM for FY2014 that is set out in Fixed Services Forecasting Model v1.3, are consistent with the principles and methods referred to in paragraph (a).*

(a) Approach adopted in assessing the attribution of opex to the FLSM

In conducting his review, Mr Lockey assessed the attribution methodology used by Telstra against the eight key principles underlying regulatory cost allocations, in his earlier report provided to the ACCC in July 2014. These principles represent a distillation of generally accepted accounting and regulatory principles that provide an appropriate basis for meeting the objective of fairly attributing operating expenditure attributable to asset classes or services forming part of the FLSM.

The relevant principles are:

1 Allocators should reflect a cause and effect relationship whenever practicable

2 Allocations of cost between Services need to be on mutually consistent bases

3 Allocations of cost must be capable of reconciliation to the total cost

4 Cost allocators need to be practical

5 Allocators may change over time

6 Consistency and quality of allocation objectives and outcomes are more important than consistency of specific allocators

7 Causal allocations of cost do not necessarily have continuous or directly proportional relationships with units of Service output

8 The quantum of an allocator cannot be prescribed or fixed over multiple periods

(together, the **Generally Accepted Principles**).

The Generally Accepted Principles are consistent with and give practical effect to Fixed Principle 6.14, governing cost allocation factors to be applied in the FLSM.

In conducting his analysis, Mr Lockey identified a number of exceptions where, in his view, the approach adopted by Telstra departed materially from the Generally Accepted Principles. Each of these exceptions is listed in the table below, along with their potential impact on the operating expenditure attributable to the FLSM.

Table 8: Summary of exceptions identified by KPMG

No	Issue	(Understatement) or overstatement of opex attributable in total to FLS assets or services
Exceptions corrected by Telstra		
1	Telstra's Network model overstates network maintenance contract opex	[redacted]
2	TO business support costs not attributed to propex. This is an indirect cost that does not impinge on attributions to different asset classes	
3	It is not appropriate to use two years' data to develop allocators for a single year's direct operating expenditure for ITS direct, TSO direct (NITO) and ITS and TSO indirect operating expenditure	
4	Other understatements of ITS opex and consequential opex understatements	
Total		
Uncorrected difference		
5	Unreconciled difference in propex adjustments	

Telstra addressed the ITS Error (item 4 in the above table) along with the other identified and immaterial exceptions (items 1,2 and 3) in a new and updated version of the Fixed Services Forecast Model v1.2.[81] The net effect of these adjustments in the Fixed Services Forecast Model v1.2 was that Telstra understated operating expenditure by [redacted].

The uncorrected exception (item 5) is likely to result in operating expenditure being understated by less than [redacted]. In relation to this exception, Mr Lockey found that it was insufficiently large to lead to a material departure from the Generally Accepted Principles, in the context of approximately [redacted] total of attributable operating expenditure in the FY2014 base year.

In addition to the exceptions from Generally Accepted Principles identified above, Mr Lockey also identified a discrepancy in Telstra's documentation of its attribution methodology (i.e. the Opex Explanation). The Opex Explanation understated "unattributable" costs for Telstra Wholesale by [redacted]. However, this was only a documentation error, which was not reflected in the actual model (i.e. FLSMv1.2).

[81] Referred to by KPMG as the "Fixed Services Forecasting Model v1.3".

Table 9: Telstra resolution of immaterial exceptions identified in KPMG report

Item	Issue	Resolution
1.	**Telstra's model overstates network maintenance contract opex**	Mr Lockey identified that Telstra did not apply a [redacted] credit note (which applies to FY2013 to FY2015) when attributing operating expenditure to the FLSM for the FY2014 base year. To address this concern, Telstra has now applied the credit. The result of this is that the forecasts for FY2015 to FY2019 will assume the saving carries through, despite this not being the case (i.e. the outcome is conservative).
2.	**TO business support costs not attributed to propex. This is an indirect cost that does not impinge on attributions to different asset classes**	Mr Lockey identified that the mark up for Telstra Operations BU Support (**BU Support**) indirect operating expenditure was applied to operating expenditure calculated for each of the lines of business CSD, Networks, ITS and TSO – but not propex. This understated the total amount of BU Support costs. To address this issue, Telstra has amended its calculations to apply the BU Support mark up to the sum of CSD, Networks, ITS and TSO opex *and propex*. Telstra acknowledges this has a flow on effect - in that Unattributable Indirect Opex ratio is applied to the sum of CSD, Networks, ITS and TSO opex, propex and Telstra Operations BU Support Indirect Opex. Telstra has made the appropriate amendments in that regard such that the increase in BU Support Indirect Opex results in an increase in Unattributable Indirect Opex.
3.	**The use of two years' data to develop allocators for a single year's ITS and TSO direct and indirect opex**	As recommended by Mr Lockey, Telstra has amended its methodology of using an average from FY2013 and FY2014 values to only using FY2014 values.
4.	**TW unattributable costs not disclosed in the summary of the Opex Explanation**	The Opex Explanation and Telstra's Models apply the markup for Corporate "unattributable" costs to TW opex (see Table 5-1 of the Opex Explanation). However, the amount carried forward into the totals for attributable opex in the Opex Explanation document, excluded [redacted] attributable to TW, including only [redacted] attributable to TO.
5.	**Unreconciled difference in propex adjustments**	The impact of this exception is negligible in the context of total opex (i.e. less than [redacted]) and so no action has been taken.

(b) **Identification of the ITS Error and Telstra's approach to resolving it**

As noted above, Mr Lockey identified an unexpectedly low number of IT systems and applications having been identified in Telstra's approach to attributing ITS operating expenditure from the GL data to the Fixed Services Forecast Model v1.1.

Telstra investigated the issue raised by Mr Lockey and identified the ITS Error. This resulted in Telstra materially understating ITS operating expenditure attributable to the FLSM by [redacted].

In fact, Telstra should have attributed [redacted] in operating expenditure. As a result, Telstra has only attributed [redacted] of what it should have included for ITS in base year opex.

Telstra's approach in attributing ITS expenditure

In attributing operating expenditure to FLSM v1.2, Telstra relied on cost allocation information taken from the TEM process. The TEM is a financial management reporting model that Telstra uses for internal management purposes, including as a primary means of identifying cost inputs for decisions such as product management, remuneration and business group budgeting and planning.

TEM identifies groups of "pools" of revenues and costs, taken from these sources, and then uses a number of different attribution drivers to attribute costs incurred by different parts of Telstra, with the intention of most accurately matching costs with products and revenues. Within TEM, ITS constitutes one 'cost pool' within the Telstra Operations Business Unit.

While both TEM and FLSM use opex data derived from the same source (the GL) they allocate those costs to products in two different ways.

In the FLSM, all costs are allocated to fixed line services through first being attributed to relevant *asset classes*. This step (of first allocating costs to asset classes) reflects that the role of the FLSM is to allocate a cost base made up of various asset classes, not a set of cost pools, such as that used in the TEM.

A different approach is adopted, however, in the TEM, where costs are only allocated to asset classes in some cases and then only as an interim step in the allocation process of costs to products. In many cases, costs are allocated either directly to products, or are allocated based on other drivers (i.e. not related to asset classes).

These different approaches reflect the different purposes of the TEM and FLSM, respectively. In the TEM, Telstra is interested in identifying how much a product drives particular costs into our business, amongst other things so that we can manage different types of costs and understand drivers of profitability. In the case of operating costs booked to ITS, for example, allocating costs to asset classes is only done where this is makes sense, because an IT system or application is principally used to manage a particular asset – and so the IT system cost and asset are directly related. For many IT systems that will not be the case and there will be better and more direct ways of identifying what products use or rely upon the relevant IT application or system (and so should be allocated a share of those system costs).

In order to distribute ITS costs among IT systems, TEM uses Telstra's 'Total Cost of Ownership' model (**TCO model**). The TCO model records relevant costs for major individual IT systems operated by ITS. The relevant system specific costs within the TCO model are used by TEM to distribute ITS costs among approximately 140 of the most significant IT systems.

TEM then allocates ITS operating expenditure taken from the TCO Model to products using one of three different cost allocation approaches:

1 **Direct allocation to a product** – For IT systems and applications that are only used by a single product or set of products, TEM allocates ITS opex directly to those products.

2 **Allocation to asset classes as an interim step, before allocating to products using the NECTAR model –** For IT systems or applications that may relate principally to the operation or management of a particular network equipment or assets, TEM takes a two-step approach to allocation. First, TEM allocates opex to relevant asset classes that contain the relevant equipment or network asset. Second, TEM then allocates asset costs to products using the allocation model called NECTAR.

3 **Allocation to products through another (i.e. non-asset) allocator** – For other systems and applications, TEM uses a range of other allocation drivers to allocate opex costs derived from the TCO model to relevant products. The drivers are different for different systems to reflect the way in which each system works and what is considered the best approach to ensure the costs are allocated to products in a way that fairly reflects their use of the system.

The ITS Errors

After investigating the question raised by Mr Lockey, Telstra identified two errors with its attribution approach for ITS opex:

- **Error 1:** The first error concerned the way that Telstra attributed ITS operating expenditure within the TEM based only on the asset class allocation driver (CAA 2). In doing so, Telstra inadvertently excluded four relevant IT systems.

- **Error 2:** The second and more material error concerned the fact that Telstra only sought to include opex associated with IT systems and applications that TEM allocates, where the 'asset class' is used as the relevant allocation driver (i.e. the allocation described in 2 above). In doing so, Telstra excluded a large number of IT systems and applications that are used to support the provision of the fixed line services, but which are allocated either directly to relevant products or using non-asset class drivers (i.e. those falling within allocation methods 1 and 3 above).

This error was confirmed by [redacted] who states: [82]

[redacted]

A signed statement by [redacted] setting out an explanation of the different allocation approaches under the FLSM and TEM, and how an incorrect identification of TEM data led to the ITS Error, is set out in Appendix 17. Figure 12 sets out a simplified overview of the TEM allocation process and identifies the ITS error.

[82] Appendix 17: Statement of [redacted], April 2015, pp 4-5.

[redacted]

Addressing the ITS Error

Once identified, Telstra has revised the principles and methods used for attributing base year operating expenditure for ITS from the GL to the FLSM.

This revised process is outlined in detail in Appendix 1 and which should be taken to replace sections 4.3 and 4.4.2 (NITO expense allocation) of the Opex Explanation.

Telstra has also made the necessary flow on adjustments to other aspects of the FLSM. For example, adjustments were made to indirect ITS operating expenditure, TSO NITO opex, TSO indirect opex and BU Support.

In revising its approach and calculations for attributing ITS operating expenditure to the FLSM, Telstra identified that Telstra has previously understated ITS operating expenditure attributable to the FLSM by approximately [redacted]. After correcting both of the material ITS errors identified by the Expert and performing the calculation based on FY2014 costs, the total amount of ITS operating expenditure attributable to the FLSM amounts to a total of [redacted].

For ITS, following this correction, FLSM relevant expenditure consists of:

- [redacted] in ITS direct operating expenditure attributable to the FLSM, comprising of [redacted] in operating expenditure attributed to the FLSM Asset Classes and [redacted] in operating expenditure attributed to the indirect operating expenditure category; and
- [redacted] in ITS indirect operating expenditure attributable to the FLSM.

For TSO, following this correction, FSLM relevant expenditure consists of:

- [redacted] in TSO direct operating expenditure attributable to the FLSM, comprising of [redacted] in operating expenditure attributed to the FLSM Asset Classes and [redacted] in operating expenditure attributed to the indirect operating expenditure category; and
- [redacted] in TSO indirect operating expenditure attributable to the FLSM.

Telstra has provided Mr Lockey with:

- the revised Fixed Services Forecast Model v1.2 (referred to by KPMG as the Fixed Services Forecasting Model v1.3) – updated to reflect the corrections set out above;
- the description of the corrected ITS and TSO cost attribution methodology set out in Appendix 1; and
- the statement of [redacted] (Appendix 17).

Mr Lockey has confirmed that he considers that the steps taken by Telstra to correct the ITS Errors are appropriate to ensure that the principles and methods used by Telstra to attribute operating expenditure from the General Ledger fairly attribute operating expenditure to asset classes and services forming part of the FLSM for FY2014.

3.3.4 Conservative assumptions

Telstra's attribution methodology from the GL also involved a number of highly conservative assumptions, that provide further support for the prudency of the overall base year and forecasts.

These included:

- Telstra only examined costs incurred by either Telstra Operations or Telstra Wholesale Business Units – potentially excluding relevant FLSM operating costs related to FLSM asset classes, but incurred by other Telstra BUs.
- Within the Networks Business Unit, Telstra's methodology for deriving opex was limited to four LOBs (CSD, Networks, ITS and TSO) out of a total of seven LOBs within the overall business unit.[83] Again, this potentially mean that relevant FLSM operating costs incurred by other LOBs within Networks were excluded from the base year attribution of FLSM opex.
- Telstra used the results of its internal power management cost model (NECM) model as a proxy to apportion total accommodation expenditure, such as rent, power, and associated property overheads, to the FLSM. This is likely to be a conservative measure.

Each is briefly discussed below.

(a) **Exclusion of opex from BUs outside of Telstra Operations and Telstra Wholesale**

In responding to the 2013 BBM RKR and in later developing its FLSM operating expenditure forecasts, Telstra only assessed the costs incurred by two of its eleven business units - Telstra

83 [redacted]

Operations and Telstra Wholesale. This approach has the potential to understate and underreport relevant FLSM operating expenditure incurred by Telstra across the full range of its business units.

The assessment of operating expenditure was limited to two business units principally because of the complexity of assessing Telstra's expenditure information in order to accurately determine FLSM operating expenditure. This exercise required significant input from various subject matter experts both in finance and in the broader business. The FLSM requires operating expenditure to be relevant to only part of Telstra's overall business (the provision of fixed line services and the operation of the fixed line network) as well as requiring operating expenditure information to be disaggregated among the 22 FLSM Asset Classes where possible. This information is not readily available in a systematic and complete way from Telstra's financial systems. In addition to this complexity constraint, it was considered likely that the significant majority of expenditure relevant to the FLSM would be incurred by the Telstra Operations and Telstra Wholesale BUs. This reflects the relative size of these two BUs (these two business units incurred approximately [redacted] in operating expenditure in FY2014, which represents approximately [redacted] of Telstra's total for FY2014) as well as the relevance of their activities to the FLSM.

Given the constraints noted above, it is difficult for Telstra to quantify the full extent of additional operating expenditure that could be relevant to the FLSM Asset Classes and which is incurred by business units other than Telstra Operations and Telstra Wholesale.

However, on the basis of a preliminary review of expenditure incurred by Telstra Retail and Global Enterprise & Services, it appears likely that relevant operating expenditure has been excluded from the FLSM operating expenditure forecasts.

The analysis made use of activity codes recorded against Telstra Operations expenditures and sought to identify instances where expenditures against these same codes were incurred by either Telstra Retail or Global Enterprise & Services. Just over [redacted] in costs related to Telstra Operations activities were incurred by the Telstra Retail and Global Enterprise & Services Group BUs for FY2014.

Although this study is not definitive, it suggests that significant relevant expenditure may have been excluded from the FLSM. The likelihood that a significant proportion of the identified costs are relevant to the FLSM is support by a review of the activity descriptions against which costs were recorded. The following table sets out the top 20 activities by total cost incurred across Telstra Retail and Global Enterprise & Services.

Table 10: FLSM related expenditure for Telstra Retail and Global Enterprise & Services Group

GL	Telstra Retail	Global Enterprise & Services Group	Total
Routine Maintenance	[redacted]		
Total Faults CAN			
Network Life Cycle Management			
Activation Management			
Network Preparation			
Installation Network			
Fault Repair - Customer Cabling Equipment			

GL	Telstra Retail	Global Enterprise & Services Group	Total
Network Technology Development	[redacted]		
New Installation - Cust Cabling Equip			
Proactive Maintenance			
Cust Serv Design&Facility Assignment			
Fault Management			
Network Management			
Installation - Adds Moves & Changes			
Network Surveillance			
Work Assignment & Dispatch			
Fault Testing			
Customer Conversion			
Field Admin & Supervision			
Fault Reporting			

Although this study cannot be definitive with respect to the relevance of these costs to the FLSM, the results provide strong evidence that the approach adopted by Telstra in only assessing costs incurred by Telstra Operations and Telstra Wholesale is conservative and is likely to understate the actual costs incurred by Telstra that are attributable to the FLSM. Further detail regarding this analysis is available in Appendix 2.

(b) **Conservative approach used to identify Networks opex**

As set out in section 3.3, and section 4.2 of the Opex Explanation, Telstra relied on detailed input from SMEs and secondary data sources to identify FLSM relevant operating expenditure within the Networks LoB.

Therefore, to demonstrate the prudency and efficiency of Networks operating expenditure relating to specific asset classes, Telstra has undertaken an assessment of Networks operating expenditure using an alternative method (**Approach B**). Approach B employs the same methodology as was used to ascertain relevant CSD operating expenditure. Behind CSD, Networks operating expenditure is the second most significant contributor to operating expenditure accounting for approximately [redacted] of total FLSM related operating expenditure.

If Telstra were to employ Approach B in place of the approach actually used ("Approach A"), Telstra would have identified and assigned an additional [redacted] to relevant FLSM related asset classes for the FY2014 base year, as shown in the following table.

Table 11: Differences between original approach (Approach A) and alternative approach (Approach B)

	Excluding electricity and accommodation costs	
	Original (Approach A)	*Alternative (Approach B)*
	[redacted]	
FLSM Asset related		
FLSM product related		
FLSM recoverable damages		
FLSM network usage fees		
FLSM Direct		
FLSM Indirect (excl. Networks ED Group Office)		
Networks ED Group Office		
Total indirect		
Total direct and indirect		
Propex		
Net opex		
Difference (Approach A- Approach B)		

**Negative values indicate a credit or refund on contract related costs. For example, this may represent an overpayment on contracts.*

As set out in Opex Explanation, the identification of FLSM relevant opex for Networks involved subject matter experts within Networks Finance carrying out assessments to determine which costs are relevant to FLSM Asset Classes. They used a combination of primary GL level data and secondary source data (e.g. contract management database). For expenses other than accommodation, the following organisation units were identified as having costs relevant to FLSM assets: (a) transport & routing engineering (b) consumer and mobility product engineering and (c) fixed and data access engineering. All other groups within Networks were excluded based on the advice of Finance.

The alternative approach uses the steps undertaken to extract opex incurred using the methodology used for CSD, relying on ABM information within the GL. Specifically:

- Operating expenditure by activity types is extracted from the GL using Activity Based Management codes. There are ABM codes that are attributed to assets and ABM codes that are attributed to products/services. The codes indicate the activity that is driving expenditure – which is used to determine what is FLSM relevant.
- ABM codes and the ACCC's FLSM Asset Class mapping are used to identify expenditure activity by asset and products/services in the provision of fixed services.
- Direct operating expenditure is identified – being expenditure related to assets and products/services as well as costs associated with recoverable damages and network usage fees.
- Indirect operating expenditure is identified – being expenditure attributed to processes and not assets or products/services. Indirect operating expenditure is only included on a proportional basis (based on the proportion of direct expenditure in that organisation unit being attributable to fixed line services).

- Adjustments for propex and installation costs related to external contractors were applied as per CSD process.

The key differences between the two approaches are set out in Box 1 below.

Box 1: Key differences between Approaches A and B

- Approach B analyses relevant operating expenditure from across all ten LOB within Networks (Network infrastructure management, Networks delivery, Transport & routing engineering, Consumer & mobility product engineering, Networks ED group office, Wireless networks engineering, Enterprise and business product engineering, Media, Fixed & data access engineering and Network commercial engineering). Approach A restricts expenditure identification to the Transport & routing engineering, Consumer and mobility product engineering and fixed & data access engineering LOB only.

- Approach B categories ABM codes by asset, product and process which are then in turn able to be mapped to FLSM related asset categories. In contrast, Approach A does not use ABM data as the basis for identifying operating expenditure. SMEs within Networks identified relevant expenditures against different Networks organisational units to determine costs relevant to the FLSM Asset Classes. In some cases GL level data was used in making assessments in regards to identification and apportionment of expenditure , however secondary source data (such as Telstra's contract management database were also used in making these assessments.

- Using Approach B identifies significantly more indirect cost ([redacted]) than was previously identified under Approach A. As Telstra Operations has broader responsibility than simply fixed networks (i.e. mobile), common expenses are incurred across the entire Networks LOB needed to be apportioned accordingly. Indirect expenses refer to those activities such as management, supervision, logistics, field overhead and contract management activates which constitute common expenses incurred across the networks.

- Costs incurred by the Networks Executive Director Group Office were specifically excluded in Approach A, whereas they were included for Approach B.

- Approach B results in a significant increase in propex ([redacted]), which is then removed through the adjustment process.

- Applying this methodology to Networks results in approximately an additional [redacted] for FY2014. This includes cost form the Executive Director Group Office but excludes electricity and accommodation costs (which we have assumed remain constant in both approaches).

Further detail and a step by step summary of this alternative cost derivation are provided in Appendix 3.

(c) **Conservative approach used to attribute accommodation costs**

A key component of operating expenditure within the Networks LOB relates to electricity, rents and building outgoings for Telstra's physical network locations (principally network exchange buildings). These activities are defined within Telstra's GL under the grouping "Accommodation." Accommodation expenses incurred by the Networks LOB only relate to expenses on network facilities (e.g. exchange buildings) but do not include general accommodation costs – such as the costs associated with corporate offices and retail stores.

In order to determine the relevant proportion of electricity costs to be attributed to the FLSM Asset Classes, the NECM is used. The NECM is an engineering model used by Telstra Networks for monitoring and allocating energy consumption and costs, in order to identify areas for energy savings, to forecast future energy costs and to assess the outcomes of energy reduction initiatives. The NECM draws inputs from Telstra's network inventory database, network electricity consumption database and technical specification of equipment and use iterative computations to produce the profile of electricity consumption by individual equipment categories at Telstra network sites.

Based on the results of the NECM, [redacted] of network electricity costs are attributed to the FLSM. Telstra has used the results of the NECM as a proxy to determine the amount of other accommodation costs attributable to the FLSM; applying the same [redacted] proportion to all cost categories. Telstra appreciates that the use of an indirect proxy represents a "second best" approach to cost allocation. However, due to the absence of alternative information at the time of the 2013 BBM RKR, the NECM results were considered to provide a reasonable basis for cost allocation, and were likely to be conservative.

In order to demonstrate that the NECM proxy is reasonable (if not conservative), Telstra has sourced supplementary data, including:

- Thiess maintenance logs for FY2014[84] which record the individual records and costs associated with all maintenance carried out on Telstra network sites;
- land tax data paid (sourced from Jones Lang LaSalle for each of Telstra's network related properties for FY2015); and
- council/water rates data (gathered from Jones Lang LaSalle for FY2014).

Using this additional detailed data sourced from Telstra's external service providers, Telstra has been able to assess the prudency and reasonableness of the NECM proxy against more direct measures of the relevant costs for other categories of accommodation expenses. This comparison is set out in the table below:

Table 12: Computed proxies for Networks accommodation costs

Accommodation proxy using Electricity (NECM model)	Accommodation proxy using Maintenance activities (total cost)	Accommodation proxy using land tax	Accommodation proxy using council/water rates
[redacted]			

Based on analysis of alternative measures for the attribution of accommodation costs, the NECM results appear conservative and potentially understate FLSM-relevant accommodation costs. As set out above, Telstra has used the results of the NECM as a general proxy for accommodation costs (which estimates that [redacted] of total accommodation costs are relevant to the FLSM), however if alternative information sources were used (and thus, alternative computed proxies were used), total FLSM-relevant accommodation costs would rise to between [redacted] of total accommodation costs, potentially resulting in an additional [redacted] additional operating expenditure being apportioned to FLSM assets.

It should be noted that in the time available Telstra was unable to source reliable, sufficiently disaggregated rental cost data to undertake a similar analysis. However, based on the allocations provided with respect to electricity (NECM), maintenance records, land tax and local government

[84] Thiess undertake maintenance for all of Telstra's network related assets.

rates information it is evident that Telstra's approach (in the absence of rental data) is reasonable and conservative.

The table below shows the GL accommodation cost category, source data, total expenditure and the FLSM attributable opex using the additional source data.

Table 13: Allocated FLSM expenditure compared with alternative accommodation proxy

General Ledger category	Relevant allocation driver	Total expenditure	Allocated FLSM expenditure (using NECM as general proxy)	Alternative accommodation proxy	Difference between approaches
Light & Power (PLR628850)	NECM	[redacted]	[redacted]	[redacted]	[redacted]
Cleaning Gardening & Security (PLR628820)	Maintenance Logs	[redacted]	[redacted]	[redacted]	[redacted]
Property - Council & Water Rates (PLR628810)	Council and Water Rates	[redacted]	[redacted]	[redacted]	[redacted]
Property - Land Tax (PLR628830)	Land Tax	[redacted]	[redacted]	[redacted]	[redacted]
Property - Other Outgoings (PLR628860)	Maintenance Logs	[redacted]	[redacted]	[redacted]	[redacted]
Property Building Maintenance (PLR628840)	Maintenance Logs	[redacted]	[redacted]	[redacted]	[redacted]
Gross Property Rental (PLR628720)	Not available	[redacted]	[redacted]	[redacted]	[redacted]
Total		[redacted]	[redacted]	[redacted]	[redacted]

From the above table, two conclusions can be drawn:

- First, unless the proportion of rental costs paid on network properties by Telstra with respect to the FLSM Asset Classes is less than [redacted],[85] then the amount of accommodation costs attributed to the FLSM will be conservative and understate the actual amount of relevant costs.
- Second, if the attribution of rent costs more closely reflects either the NECM result of [redacted] or the results observed from the detailed analysis of the other accommodation categories, then the use of the NECM is likely to materially understate the actual amount of accommodation expenses that are relevant to the FLSM. For example, if the proportion of rent costs attributable to the FLSM Asset Classes approximated the NECM result ([redacted]), then overall accommodation expenses attributable to the FLSM would increase by [redacted]

A detailed explanation of this analysis is available at Appendix 4.

85 [redacted]

3.3.5 Efficiency of Telstra's base year operating expenditure compared to BT

Telstra acknowledges the concerns expressed by the ACCC in the Draft Decision about the use of international benchmarks, when trying to assess the prudency of Telstra's operating expenditure forecasts. In particular, the ACCC found that it was critically problematic to try to compare unit cost-volume elasticities between Telstra and British Telecom (**BT**) over the forecast period as a test of the responsiveness of Telstra's opex to changes in demand – as BT faced demand and volume changes that were far more stable than Telstra.[86]

While Telstra agrees with the ACCC's conclusion, the problem identified is of less relevance when assessing the base year opex (FY2014) as the differences in demand forecasts do not affect the comparison. While Telstra acknowledges that there remain important differences between Telstra's network and services and those of BT in the United Kingdom (particularly the much greater geographic scale and diversity of Telstra's network and lower population density), these differences would generally be expected to make the unit operating expenditure required to efficiently maintain and operate Telstra's network and services higher than that faced by BT.

Telstra therefore commissioned NERA to assess and benchmark Telstra's operating expenses in the base year FY2014 against the operating expenses of British Telecom for the same period. This is not intended as a definitive view, but as a reasonable and appropriate "check" on the prudency of Telstra's base year forecasts. For the same reasons as set out by the ACCC in the Draft Decision, Telstra did not request NERA to attempt to benchmark the forecast opex trend over the period.

NERA considered that BT offers a useful point of comparison to Telstra because:

- BT's regulated services are similar to Telstra's;
- BT operates in the UK, a country in a similar stage of economic development to Australia; and
- in a number of previous studies, including recent studies undertaken by NERA itself, BT's expenditure has been assessed to be efficient. Consequently, to the extent that Telstra measures well against BT, this should be a reasonable indication of prudency.

To compare Telstra and BT's operating expenditure, NERA sought to match Telstra's regulated services set with equivalent BT services. For example, Telstra's WLR service corresponds to BT's Wholesale Analogue Exchange Line service and Telstra's WADSL service to BT's wholesale broadband access service. Some regulated services offered by Telstra did not have a direct equivalent in BT's services; these were excluded and the comparisons were made based only on the four services that could reasonably be equated.

The respective unit cost of each of Telstra's and BT's service was then calculated and compared. In order to ensure a correct comparison, Telstra's costs were converted to Pound Sterling by applying a purchasing power parity (**PPP**) exchange rate.

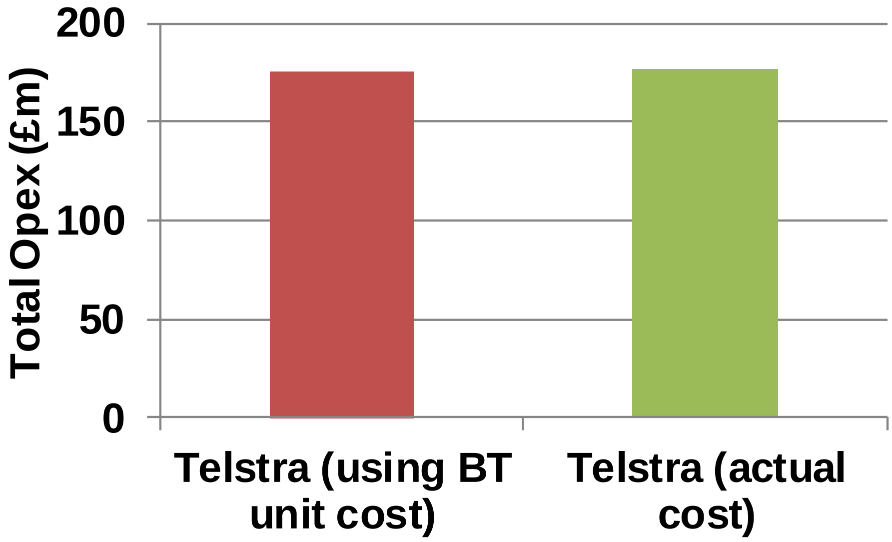
While NERA undertook a comparison of opex for each service, this comparison is problematic as it is difficult to identify where BT and Telstra may have made different allocation decisions across the different services.[87] Because of this limitation, NERA considered that the most useful and appropriate benchmark was to compare the aggregate operating expenditure across all four services.

Based on this comparison, NERA found that Telstra's operating expenditure was only approximately 1% higher than BT's would be if it were catering to the same demand volume. The below figure is drawn from NERA's reports and shows the nearly-identical results.

---

[86] Draft Decision, pp 36-37.
[87] Appendix 14: Nigel Attenborough, *The Comparative Efficiency of Telstra*, April 2015, p 14.

Figure 13: Comparison of Telstra base year opex with opex if Telstra had BT's Unit Costs



Source: NERA analysis of Telstra data and BT current cost financial statements.

NERA therefore concludes that Telstra is likely to be at least as efficient as BT across the four comparable services.[88] Given BT's proven efficiency, which has been accepted by the UK regulator OFCOM, this provides further strong evidence that Telstra's base year FLSM operating expenditure can be regarded by the ACCC as prudent.

NERA states:[89]

> *Recent studies assessing BT's costs have concluded that BT is efficient. We therefore consider that if Telstra's unit opex is comparable to BT's unit opex (as is implied by Figure 1.1), then that provides one indicator of Telstra being regarded as efficient by international standards - recognising that there are important differences between Australia and the UK in population density and dispersion that would also need to be borne in mind. However, we lack the data that would enable us to quantify the effect of Telstra's likely lower density and higher dispersion on its efficient level of opex, relative to BT.*

Indeed, the different features of Telstra's operating environment identified by NERA suggest that the efficient costs of providing telecommunications services in Australia would be higher than in the UK - these include a much lower population density, and a much smaller number of customers per exchange area in Australia compared to the UK. Given that NERA's comparison does not account for these differences, it is likely to (if anything) understate Telstra's efficiency relative to BT.[90]

3.3.6 Telstra has strong market incentives to ensure prudency of opex (and capex)

The Draft Decision suggests, on a number of occasions,[91] that Telstra may have incentives to incur imprudent opex or to overstate opex in its accounts. This appears to have been informed by WIK's repeated contention that *"a regulated firm has a general incentive to inflate expenditure forecasts and an incentive not to be 'too' transparent with respect to these forecasts."*[92]

WIK's statement is incorrect in the context of the Australian market and Telstra's business. Telstra strongly rejects the WIK claim and reiterates that Telstra faces very strong incentives to operate efficiently, for four related reasons:

---

[88] Appendix 14: Nigel Attenborough, *The Comparative Efficiency of Telstra*, April 2015, p 15.
[89] Appendix 14: Nigel Attenborough, *The Comparative Efficiency of Telstra*, April 2015, p ii.
[90] Appendix 14: Nigel Attenborough, *The Comparative Efficiency of Telstra*, April 2015, p 16.
[91] See, e.g., Draft Decision, p 45.
[92] Draft Decision, March 2015, p 45.

- At a Telstra Group level, and unlike most regulated businesses, including those that WIK is probably more familiar with in a European context, the vast majority of Telstra's revenues are derived from highly competitive (unregulated) services and, therefore, it faces competitive pressure to reduce costs wherever possible and operate efficiently. Indeed, less than [redacted] of Telstra's revenues derive from regulated fixed line services.

- Similarly, approximately [redacted] of the opex that is associated with asset classes in the FLSM is **not** allocated to regulated fixed services. In effect, this means that for any dollar of inefficient opex, Telstra would only be able to recover [redacted] through regulated tariffs. The rest of this inefficient capex would either be left unrecovered, or would impose inefficient costs on other unregulated parts of its business.

- It would not be commercially sensible for Telstra to incur inefficient opex or capex, with an intention of recovering a return on this expenditure through regulated tariffs – as the rate of return that is allowed through its regulated tariffs is significantly lower than the returns that could be made by employing this capital in other unregulated markets. The opportunity cost to Telstra of inefficiency is very high.

- To the extent that Telstra derives revenue from regulated services, its allowance for operating expenditure as part of that revenue stream is determined on a 'set and forget' basis, creating a very strong efficiency incentive.[93]

Accordingly, for all of these reasons, Telstra has strong incentives to ensure that both its historic expenditure, and its forecast expenditure (which is based on past expenditure patterns) reflects prudent and efficient costs.

Telstra notes that in the energy sector it is generally presumed that past operating expenditure is efficient, where businesses have operated under an efficiency incentive framework.[94] This presumption should be even stronger in Telstra's case, due to the additional efficiency incentive created in its case by the pressures of competition – both generally and specifically with respect to the fixed line network services – as well as the fact that Telstra receives no regulatory benefit from actual expenditure exceeding past regulatory forecasts.

3.4 Telstra's forecast opex (FY2015-2019) is reasonable

In the Draft Decision, the ACCC highlight two main concerns with Telstra's operating forecasts. These relate to the following:

- A perceived lack of transparency, with the ACCC noting that in the absence of further information from Telstra that demonstrates an improvement in the transparency of its proposed operating expenditures, the ACCC may make further adjustments in the final decision.[95]

- In addition, the ACCC raise concern regarding the relationship of cost with demand. The ACCC note that:

[redacted]

[93] One of the reasons for the ACCC not allowing for "unders and overs" adjustments for operating expenditure is that this is seen to promote efficient expenditure by Telstra (ACCC, *Inquiry to make final access determinations for the declared fixed line services: Final Report*, July 2011, p 87). This is consistent with the approach taken in the energy sector.
[94] AER, *Better Regulation: Explanatory Statement – Expenditure Forecast Assessment Guideline*, November 2013, p 42.
[95] Draft Decision, p 10.

[redacted]

Telstra’s operating costs – although forecast to decline significantly over the proposed regulatory period (by [redacted] in real terms over the period FY2016-2019) will not track the decline in demand.

The ACCC is incorrect to suggest that Telstra’s “*network will shrink by* [redacted]” over the forecast period. Whilst demand for the fixed line services may shrink by that amount over the period, the network itself will remain largely intact. More specifically,

- Telstra’s duct network is not expected to reduce in its geographic extent or overall length.
- The network of more than [redacted] exchange buildings is not expected to reduce – and to the extent a limited number of individual exchange buildings may be exited over the forecast period, these exchanges are unlikely to be significant in terms of overall network cost and the associated exit and decommissioning costs from the exchanges (which Telstra has not included as part of its forecasts) would invariably exceed the opex requirements of these facilities over the regulatory period.
- Network equipment, including DSLAMs, switching equipment, transmission equipment, is not expected to reduce - to the extent some of this equipment becomes relatively less utilised over the forecast period, the electricity, maintenance and other costs associated with this equipment will not reduce.
- It is not practical or economically efficient to rationalise network equipment within exchange buildings during the NBN rollout. The cost of undertaking rationalisation on the network will invariably exceed the opex savings associated with the activity.
- To some extent, network rationalisation and the exiting of exchange sites is to be expected once the NBN Rollout reaches a “steady state”.

Within the Draft Decision, the ACCC highlights the following expenditure areas as areas of concern:

- Networks;
- ITS;
- TSO;
- CSD (Drivers of increased fault rates);
- Propex;
- Business Support Mark Up; and
- CPI and Productivity Indices.

The following sections address each of these areas in the context of how Telstra’s forecast model for operating expenditure reflects changes (or expected consistency) of the actual cost drivers facing Telstra over the forecast period.

[96] Draft Decision, p 38.

3.4.1 Networks

(a) **The nature of the timing of the NBN rollout will prevent Telstra from decommissioning any material part of its legacy network over the regulatory period**

The ACCC has expressed concern that Telstra's forecast operating expenditure may not prudently and efficiently reflect the forecast change in demand, given the substantial forecast reduction in SIOs associated with the migration of customers to the NBN over the regulatory period.

WIK criticises Telstra's forecast assumption of its building space usage and argues that Telstra's forecast usage of exchange space over the regulatory period are "highly implausible". It argues that Telstra will need less building/rack capacity due to its migration of customers/services to the NBN, and as a result, Telstra's allocation of overcapacity of building space emerging from the transition of customers from fixed line services to NBN is "not appropriate". [97]

WIK's view that significant operating expenditure savings should be available because less building/rack capacity is required demonstrates a lack of understanding of the practical, commercial and technical realities of the NBN migration and the decommissioning process. As [redacted] states:[98]

[redacted]

WIK proceeds on an assumption that Telstra should be able to close part or all of exchange buildings and associated equipment progressively as the NBN rollout occurs, and broadly in line with the migration of disconnection and migration of services to the NBN. This assumption is incorrect.

To the contrary, Telstra has for over a decade, faced strong incentives to reduce opex and capex in its network, wherever possible. Based on this experience, Telstra includes with this submission a statement from [redacted] demonstrates that:

- The cost of rationalising and moving active services is extremely high – and overwhelms any opex savings that may be associated with reduced active equipment within Telstra's network – the only basis upon which rationalisation is cost effective would be where Telstra is able to partially or fully exit an exchange (and sell the site) and, even then, this is generally not cost effective for any but the larger and more valuable sites.

  [redacted] says (at para 30):[99]

  [redacted]

- It is not possible or cost effective to try to subdivide or shut down exchange building sites until all (or virtually all) active services have been disconnected, and the migration process has reached a "steady state". Based on the most current NBN Co forecasts, [redacted]

[97] WIK Report, p 2.
[98] Appendix 15: Statement of [redacted], April 2015, p 3.
[99] Appendix 15: Statement of [redacted], April 2015, p 8.

of ESAs will be completely covered by NBN regions that have progressed completely through migration (i.e. have passed their disconnection date) by Q1 of 2018. Even then, there are a large number of exceptions and special services that will not be able to be disconnected – and Telstra will retain an obligation to rebuild copper paths to supply new legacy services in those regions.

- There is very limited "passive" savings associated with lower power or other costs resulting from lower utilisation of equipment – unless all of that equipment can be decommissioned and removed.

Put simply, the WIK analysis – which assumes Telstra is be able to shut down its exchange network and reduce Network opex, notably building costs, broadly in line with the NBN rollout – does not reflect the reality and timing of the NBN rollout, Telstra's regulatory obligations to maintain its legacy network (and services) and the technical challenge of closing exchange that limit when it is cost efficient for Telstra to decommission its network in response to NBN migration.

(b) **No meaningful scope to exit exchanges or substantially rationalise equipment during the regulatory period**

Telstra has mapped the most recently published rollout forecasts made available by NBN Co against its ESA network to determine the proportion of ESAs which will be fully covered by NBN rollout regions that have passed their disconnection date. Given the challenges associated with rationalising active services, it is neither efficient nor technically feasible to consider rationalising, sub-dividing or selling exchange buildings until all (or substantially all) services are fully migrated.

Within the forecast period currently published by NBN Co (up to Q1 2018), [redacted] ESAs or [redacted] of Telstra's ESAs will have 100% of the premises within the ESA covered by the NBN and having passed the disconnection date. [redacted] of ESAs will have at least [redacted] of the premises they are currently servicing covered and migrated to NBN over this same period.

The results of the mapping exercise are set out in Table 14 below.

Table 14: Expected coverage of ESAs by the NBN rollout (by Q1 2018)

% of premises within ESA covered and migration completed to NBN January 2018	ESAs	% of total ESAs
100%	[redacted]	
>90%		
>80%		
>50%		
>0%		
0% (no information)		

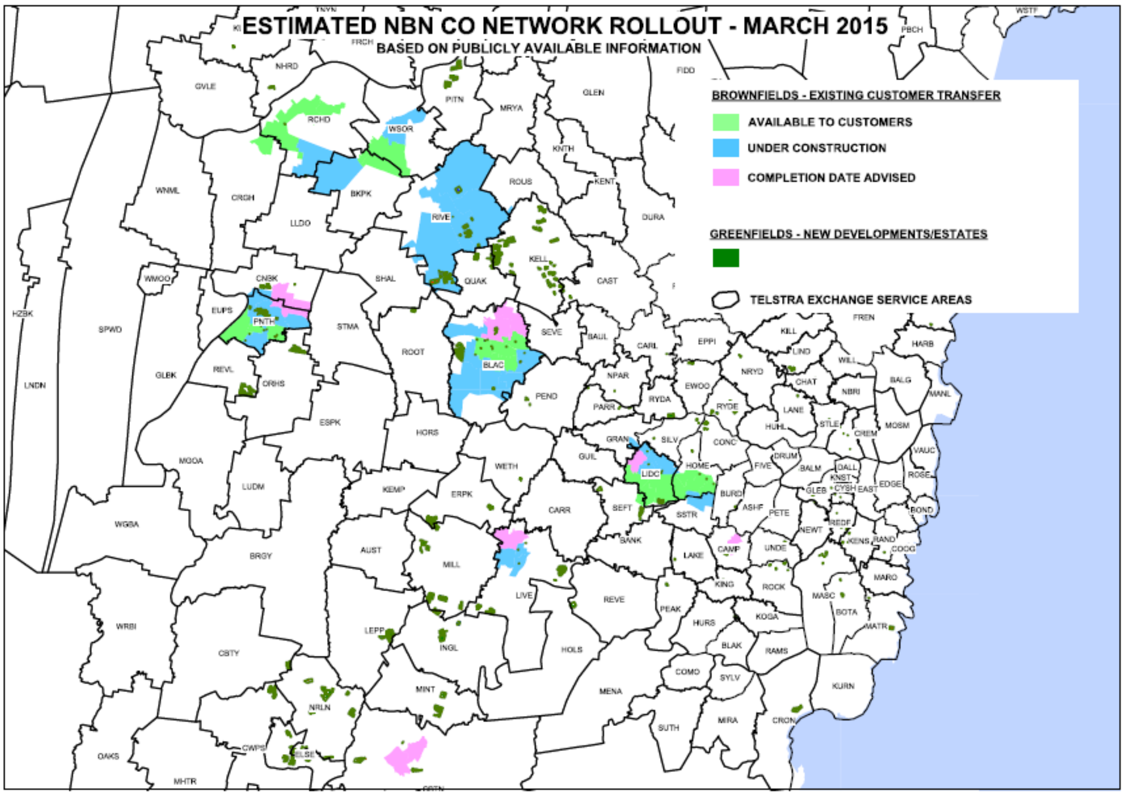
Based on this analysis, Telstra can only plan for up to [redacted] throughout its network to have reached a status where full migration of standard services has been completed across the entire ESA and the exchange is available for Telstra to even consider rationalisation of equipment and sale of exchange building sites.

Even then, if all [redacted] of these ESAs were decommissioned (setting aside the question of whether it is cost effective), this would have a marginal impact on Telstra's overall operating expenditure costs on the network. In practice the existence of a large number of other services and continuing regulatory obligations, mean that even those [redacted] ESA sites are very unlikely to be able to be decommissioned.

The reason that the NBN rollout does not permit a predictable and steady decommissioning of the fixed line network includes the following:

- The NBN project is unprecedented. There is no global equivalent to Telstra being required to fully decommission its local access network in response to the construction and roll out decisions of an external party. The rollout timetable and locations chosen by NBN are irregular and not predictable – and do not cover contiguous ESAs. Multiple rollout regions will therefore need to be completed at different times before all of the premises within a single ESA are covered and the ESA is even capable of closure.

- An example of the "patchwork" impact of the rollout and its coverage of ESAs is set out in the map of Brisbane below. Similar maps for the NBN rollout in both Sydney and Melbourne are included with the [redacted] Statement.



[redacted] says the following in relation to these maps: [100]

[redacted]

[100] Appendix 15: Statement of [redacted], April 2015, p 13 (para 49).

[redacted]

In summary, NBN Co is not planning its rollout to provide for the efficient decommissioning of Telstra exchange infrastructure. Although a large number of customers currently served by the fixed line network are expected to migrate to the NBN over the forecast period, the nature of the rollout and the absence of reliable, long-term and geographically disaggregated roll out information means Telstra is severely restricted in understanding when premises within individual ESAs will migrate to the NBN. As a result, the timeframe for the complete coverage and potential migration is known for only a handful of ESAs.

Even where the NBN rollout covers an entire ESA, NBN Co's plans are subject to change and there is a substantial lead time between NBN Co announcing an intention to rollout in an area, and the rollout actually being completed. Customers can only be migrated to the NBN once construction has completed, and construction will take at least 12 months from when a ready for service (**RFS**) date is notified (although it is generally longer). It then takes over 18-24 months for the completion of customer migrations from the copper network to the NBN – and in many cases it takes longer than this.

The actual timeframe for construction and customer migration will differ from exchange to exchange. However, in reality, migration generally takes 3-4 years from the date the rollout has been announced – if it proceeds as planned. Telstra cannot even begin to decommission equipment and commence the process of closing an exchange until the end of this period.

Even once the disconnection date has passed in an NBN rollout region, Telstra is still required to continue to supply a range of services using its legacy equipment and ESA network, including:

- a range of business-grade data services (i.e. special services) as well as ULLS that are used by wholesale customers to deliver equivalent services;
- legacy services to "non-Premises" (e.g. traffic lights, telemetry sites etc);
- in many ESAs, particularly in regional areas, the ESA will continue to service premises outside the long term NBN footprint;
- services supplied to the "common areas" within apartment blocks and other "multi-dwelling units" within the rollout region (e.g. concierge phones, lift phones etc); and
- as part of the MTM renegotiations, NBN Co has requested an ability to continue to access to Telstra "exchange-fed" copper loops, as part of its Fibre to the Node (**FTTN**) rollout. This may involve the ongoing use of Telstra's exchange buildings for the supply of these services, or the use of roadside cabinets at exchange locations. This is yet to be determined by NBN Co.

To date, NBN Co has not announced a replacement for any special services – meaning there is virtually no likelihood of all legacy CAN-supported services and equipment in **any** ESA being made redundant during this period and all ESAs will continue to serve, and need to be able to continue to connect, active PSTN services. It is worth noting that Telstra supplied special services and ULLS-based services are provided in [redacted] ESAs that based on NBN rollout information as at March 2015, Telstra may expect would be at least [redacted] served premises migrated to the NBN by January 2018.

This means that even in those ESAs in which potential rationalisation may be appear possible based on available information on the percentage of premises passed and migrated over the forecast period, the presence of complex and special services makes any consideration of potential rationalisation more complex and uncertain. Based on the detailed ESA rollout information set out in DJP-08 attached to the [redacted] statement, it can be seen that special services are present in more than [redacted] Telstra ESAs.

It is clear that over the period FY2015-2019, the NBN rollout will continue to “ramp up” and pass a large number of premises. However, based on the non-contiguous nature of the NBN rollout, the lack of detailed, long-term information on the NBN rollout and the fact that many services currently provided on the fixed line network may not be immediately migrated to the NBN (such as special services) will inhibit Telstra from reducing its network footprint over the forecast period.

Over the forecast period to FY2019, there is unlikely to be any significant number of ESAs or broader network areas that achieve a post NBN migration “steady state”. This would involve the complete migration of premises within the ESA – including the migration of special services. For the reasons set out below, for Telstra to attempt to undertake the decommissioning and shut down of sites prior to a “steady state” being reached in an ESA would require Telstra to incur far greater costs than it would save, from doing so.

(c) The task of rationalising equipment and/or exiting part or all of an exchange is formidably complex, even where Telstra is in full control of the process and has complete information

Consistent with its incentive to reduce opex and capex, Telstra has considerable experience looking to rationalise equipment and decommission exchanges and understands the complexities involved in the process.

The task of rationalising or exiting an exchange is complex – requiring extensive investigation and project work that is tailored for each site. Due to the complexity and cost involved, Telstra does not exit exchange sites or rationalise exchange equipment merely to reduce ongoing operating costs associated with the site.

Telstra has from time to time removed or rationalised equipment in active exchange buildings for the purpose of freeing up floor space or capacity at a congested site, and installing new equipment, for the purpose of reducing fire risk at an exchange. Telstra has also undertaken this process where external events have required us to do so – for example, when Telstra exited the South Brisbane exchange, migrating all customers to its own fibre products serviced from neighbouring ESAs, to facilitate the redevelopment and construction of the Queensland Children’s Hospital.

The South Brisbane experience is particularly relevant, because that involved the “best case” scenario, where (unlike the NBN rollout) Telstra had full information and was responsible for both development and rollout of the replacement fibre network, as well as decommissioning and exit of the old site. It was also made easier by the fact that site remediation was limited, as the State Government was prepared to take the site in its existing state (given that it was to be used for construction of a new hospital wing).

Even after alternative fibre products had been put in place and all, or substantially all, active services had been disconnected and moved to a neighbouring ESA (Woolloongabba), it still took five months to decommission the exchange building and associated infrastructure at South Brisbane.

The work included:

- detailed planning work including the development of Methods of Procedure to facilitate orderly decommissioning of network equipment and ensure the decommissioning did not impact other aspects of the network;
- updating Telstra database of records (**DBoRs**) with detailed changes to Telstra’s physical and logical network;

- coordinating and managing third parties with equipment or services at the exchange – including both TEBA customers as well as interconnection equipment;
- removing building support equipment including diesel fuel tanks, batteries, rectifiers and air conditioning systems;
- some reworking of the conduit network including to bypass the old site so that fibre could be installed and services "re-homed" to the neighbouring Woolloongabba exchange; and
- cable recovery work to disconnect main cables and to remove them from the site which was only possible because all services had been exited.

The costs of this work overwhelmed any opex savings that would have been achieved over a 3-4 year payback period – and, it is expected, would not have been fully compensated even by sale of the site. [redacted] also provides other examples of case studies where Telstra has been forced to identify the cost and complexity of rationalisation, including:

- a project that sought to remove notionally redundant PDH switching equipment from approximately [redacted] exchange sites (para 15); and
- the movement of services from Warrnambool exchange in late 2012, following a fire that destroyed the exchange building.

He concludes, in relation to these experiences (at para 31):[101]

[redacted]

Examples of the complexities which are highlighted by these cases studies are outlined below.

Technical skills required

The planning and implementation of exchange rationalisation is labour intensive and requires a range of technical skills given the unique nature of Telstra's legacy equipment – and the need to involve staff with knowledge of older equipment.

It is not feasible to expect Telstra to have these staff available to undertake this work at large scale, during the NBN rollout – when their experience is needed more directly to manage migration.

Technical features of legacy equipment

The technical features of the equipment within an exchange are one of the reasons the process is inherently difficult and complex. An example is Telstra's legacy switching equipment. Telstra primarily uses two types of PSTN switching platforms – the Ericson AXE system and the Alcatel System 12 (**System 12**). Due to the architecture of System 12, it is not possible to decommission a part of System 12 host without causing maintenance and operational problem. As a result, it is extremely difficult and nearly impossible to remove Remote Terminal Subscriber Unit (**RTSU**) equipment from an operational host in System 12.

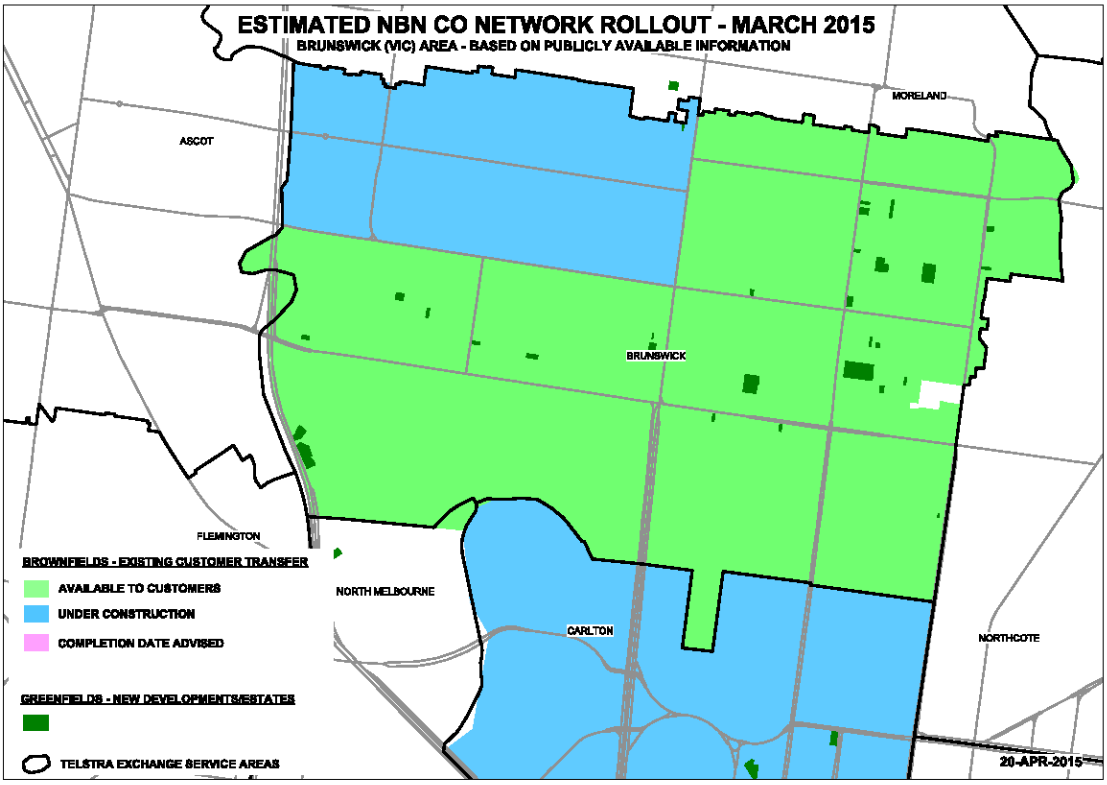
Interdependency of exchange sites

Telstra's copper network, by the nature of its design, is tightly integrated and interdependent. Although an individual customer may have a service that is connected to the network at a

[101] Appendix 15: Statement of [redacted], April 2015, p 8.

particular exchange location, that particular service is supported by the entire network (not just that that exchange). This is one of the strengths of the fixed line network.

One example of this interdependency is the way in which ESAs are dependent on others. For example, switching equipment in the Brunswick exchange supports [redacted] other exchanges in Victoria with [redacted] of these being 100% dependent. This is illustrated in the map below.

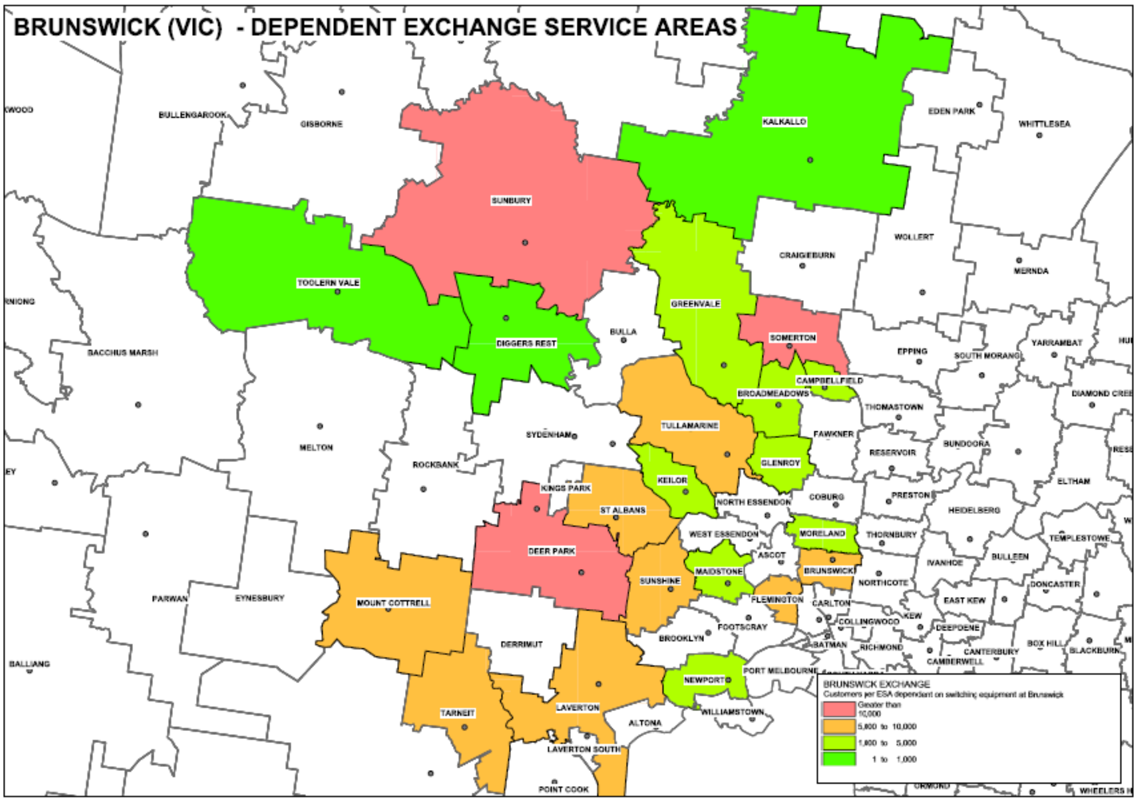


Based on the rollout information depicted above, [redacted] of premises with the Brunswick ESA are expected to have migrated to the NBN FTTP network by 2017 (Figure 14).

[redacted]

All else equal – and setting aside the complexities caused by the presence of [redacted] special services at the Brunswick exchange – Brunswick would appear to provide an excellent opportunity for exchange rationalisation.

However, Brunswick – like all ESAs – form part on an interconnected network. PSTN voice, DSL and transmission equipment are all housed within the Brunswick exchange.

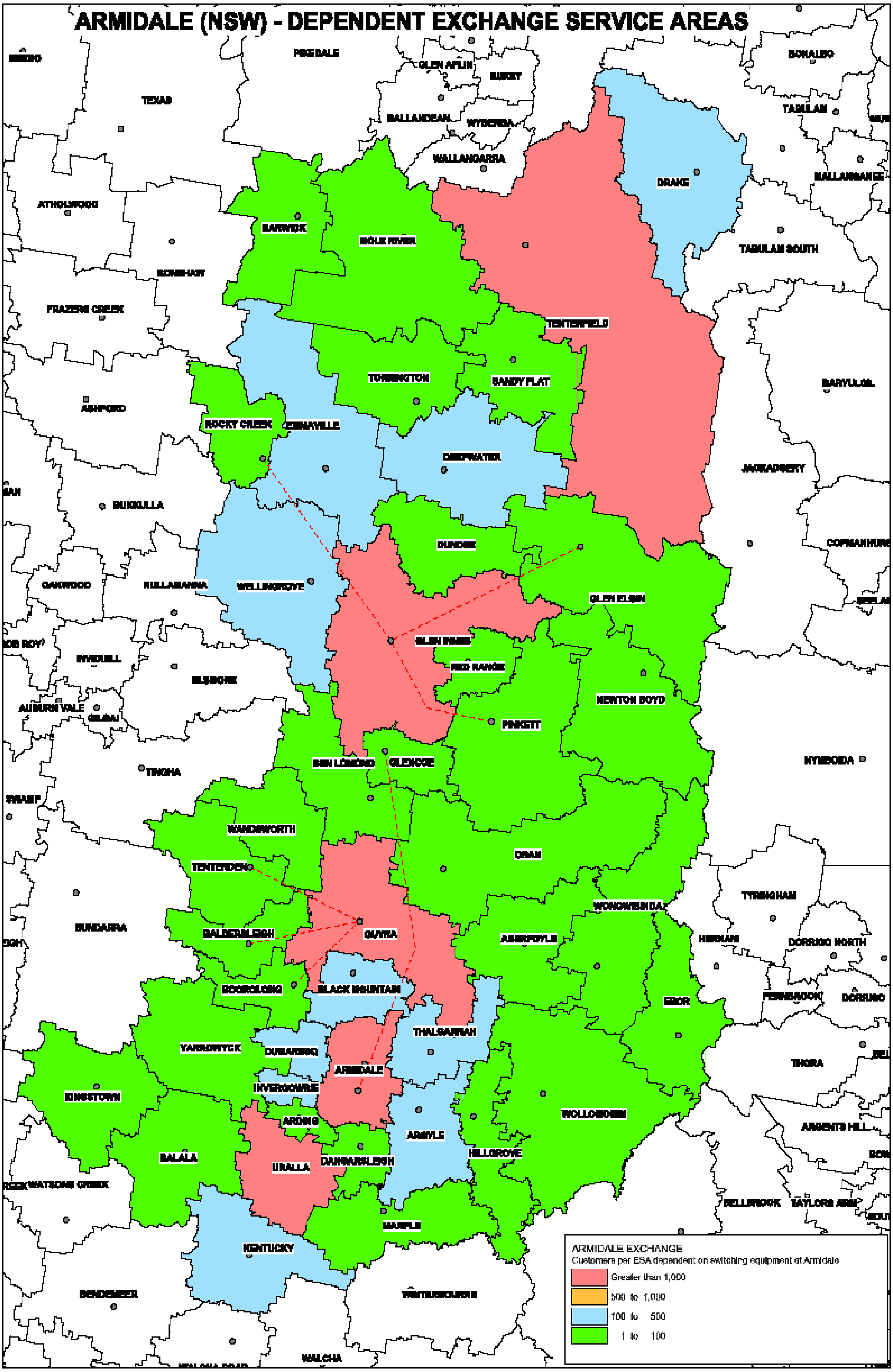


The implication of the above chart is that even if 100% of premises within the Brunswick ESA are passed by NBN Co and migration of these premises is complete within the rollout and migration window, the ability to rationalise equipment or space in exchange hubs is limited because of the far reaching impact the exchange has. In fact, an opportunity to rationalise exchange hubs will only arise when the NBN rollout is substantially complete in all premises that rely on the exchange hub and any dependent exchanges.

Similar issues arise in regional areas. For example, Armidale is a Band 3 ESA in regional NSW. As the following chart shows, by FY2017 [redacted] of premises in the Armidale ESA are expected to have migrated to the NBN.

[redacted]

However, as is the case for Brunswick, the Armidale ESA is a PSTN node which supports the provision of PSTN voice services in surrounding areas, as shown in the map below. More than [redacted] ESAs are supported by the PSTN switching infrastructure within the Armidale exchange building. This is illustrated below.

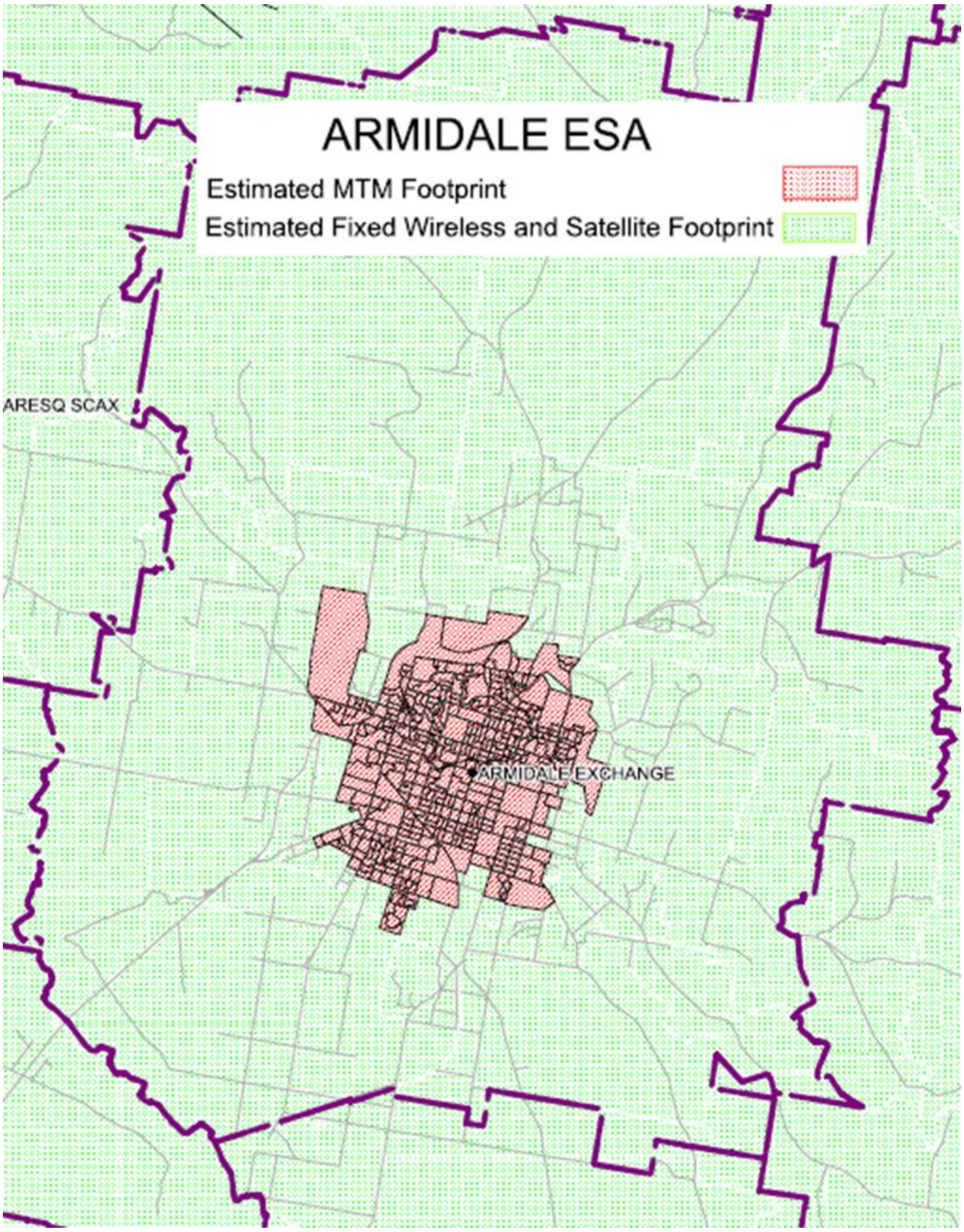

ARMIDALE (NSW) - DEPENDENT EXCHANGE SERVICE AREAS
TEXAS
TENTERFIELD
DRAKE
TORRINGTON
SANDY FLAT
ROCKY CREEK
DEEPWATER
DUNDEE
WELLINGROVE
GLEN ELGIN
GLEN INNES
RED RANGE
NEWTON BOYD
PINKETT
BEN LOMOND
GLENCOE
NYMBOIDA
WANDSWORTH
TENTERDEN
GUYRA
BUNDARRA
ABERFOYLE
EBOR
BLACK MOUNTAIN
THALGARRAH
YARROWYCK
KINGSTOWN
ARMIDALE
WOLLOMOMBI
ARDING
ARMYLE
HILLGROVE
BALALA
URALLA
KENTUCKY
BENDEMEER
WALCHA
THORA
ARMIDALE EXCHANGE
Customers per ESA dependent on switching equipment at Armidale
Greater than 1,000
500 to 1,000
100 to 500
1 to 100

Presence of fixed wireless and satellite-based NBN services

A further complexity with respect to Armidale is that although NBN Co's fixed network (FTTP) rollout is nearing completion and most customer premises have already been passed and are migrating or have completed migration to the NBN, a significant number of premises within the ESA remain connected to Telstra's fixed line network.

This is because a significant proportion of premises within the Armidale ESA are served by fixed wireless (and to a lesser extent) satellite service from NBN Co. The presence of fixed wireless means that copper cut-over is not mandated for a significant proportion of Armidale premises and for premises in surrounding ESAs. This situation will occur in many regional, metropolitan fringe and rural areas.

The following chart illustrates the potential impact of NBN Co's use of fixed wireless and satellite-based technologies in the Armidale ESA:



As is indicated in the above figure, although [redacted] of premises within the Armidale ESA (located around the town centre and highlighted red) are expected to be served through fixed line (fibre) NBN services, remaining premises within the ESA are expected to be served by a combination of fixed wireless and satellite NBN services.

The issues identified in Armidale are applicable to literally hundreds of ESAs throughout Australia. The following table breaks down the results of a detailed study undertaken by Telstra which seeks to map the "7%" of premises that NBN Co will serve with either satellite or fixed wireless connection to Telstra ESAs on the basis of population density information using Geocoded National Address File (**GNAF**) address data.

Table 15: Estimated distribution of NBN fixed wireless and satellite usage in Telstra ESAs by Band

	100% Fixed Wireless / Satellite	Mix of MTM Fixed and Fixed Wireless / Satellite	100% MTM Fixed	Total
Band 1	[redacted]			
Band 2				
Band 3				
Band 4				
Total				

As set out in the above table, based on an analysis of detailed GNAF polygon density information and NBN Co's public statements with respect to the use of fixed wireless and satellite technology as part of the NBN rollout, Telstra estimates that:

- premises within at least [redacted] ESAs are expected to be entirely served either by fixed wireless or NBN Co satellite offerings;
- premises within a further [redacted] ESAs are expected to be at least partially served by fixed wireless or NBN Co satellite offerings; and
- premises within fewer than [redacted] ESAs are expected to be entirely served by fixed line technologies under the MTM model.

This means that even though NBN Co's rollout – when complete – is expected to mean that 93% of premises will be served by a fixed-line (e.g FTTP, FTTN or HFC) NBN connection, in practice and consistent with current universal service obligation (**USO**) requirements, [redacted] of ESAs within Telstra's network and the exchange buildings and telecommunications equipment within these ESAs will continue to be required.

Layout of exchange and equipment within an exchange site

The layout of the exchange building does not easily permit equipment rationalisation on a staged basis to permit renting or sub-leasing exchange building sites for disposal.

Not only is Telstra's exchange network tightly integrated, it has developed over many decades. As a result, the same type of equipment and services can often be located in different parts of the exchange building. As well as equipment within the building, Telstra's network management system for managing PSTN services, the Network Plant Assignment Management System (**NPAMS**) allocates equipment ports for individual services across our equipment (both DSLAMs and switches) to maintain a relatively even load across this equipment.

What this means, in practice, is that although a number of premises may be located next to each other geographically (i.e. in the same street), they are likely to be serviced by different exchange equipment, possibly located in different parts of an exchange building. This means that the NBN rollout, for example, will not result in services being disconnected in an orderly or contiguous fashion within Telstra's exchanges – but with small numbers of services likely to remain active over time on different equipment across an exchange building.

The implications of these issues, as laid out in the [redacted] statement, are clear to Mike Smart. In responding to views expressed by the ACCC's consultant WIK, which states (para 87) that:[102]

> *To a relevant degree Telstra has the option to sell unutilised building space, e.g. by downsizing of the corresponding buildings. Or Telstra has the option to use this capacity for non-telecommunications purposes.*

Mr Smart summarises that: [103]

[redacted]

Regulatory and contractual issues

The process of planning and implementing an exchange rationalisation also involves managing a number of regulatory and contractual issues such as:

- contract notice periods to exit interconnection equipment which are usually several years;
- the removal of equipment by our wholesale customers (e.g. in South Brisbane, Telstra needed to manage the removal of TEBA equipment by our wholesale customers which was time consuming and difficult); and
- managing continued retail and wholesale supply obligations which require Telstra to rebuild an old copper path to resupply certain services to premises within the NBN footprint.

(d) **It is not economical to rationalise equipment or decommission exchanges over the regulatory period**

The evidence demonstrates that no commercially prudent operator would undertake the task of decommissioning a significant number of exchanges over the next five years given the fact that:

- there will be very few opportunities to even consider decommissioning and partially or fully exiting a site (i.e. based on NBN rollout information as at March 2015, by Q1 2018, only [redacted] ESAs that are expected to have had 100% of premises completely migrated to the NBN);
- even for these [redacted] ESAs, the process that must be undertaken to rationalise equipment and exit an exchange is formidably complex and costly, and relies on there being no continuing active services (i.e. a 'steady state' having been reached); and
- it would be irresponsible and commercially detrimental if Telstra rationalised mid-way through the rollout as this is an even more complex process, the costs are prohibitively expensive and the payback period is very long.

To the contrary, an efficient operator in the position of Telstra would not expend the opex that would be required to rationalise equipment and exit exchange sites until the disconnection process

[102] WIK Report, p 22.
[103] Appendix 13: Mike Smart, *Review of WIK report to ACCC*, April 2015, p 9.

for all equipment and services was substantially complete – and so the complexity of the process was reduced and there was a greater likelihood of being able to sell the site, which is the only basis on which (in Telstra's experience) the benefits of doing so might outweigh the substantial costs.

(e) **Telstra is incentivised to undertake divestment and operates and ongoing property assessment program**

Telstra operates an established divestment review program. This work program has assessed more than [redacted] potential opportunities for the rationalisation and divestment of network and non-network properties. The steps involved in the divestment review program are outlined in the following diagram.

[redacted]

The following insights have been drawn from the work undertaken by the divestment review program – with particular regard to the complexity and costs involved in rationalisation of exchange buildings and network sites with active telecommunications equipment:

- Potential operating expense savings are rarely if ever factored into the preliminary or detailed review of potential exchange opportunities or the assessment of business cases. First operating expenditure at an exchange site is very small compared to the costs involved in rationalising services at the site to enable a potential sale to be considered. Second, the rehoming of equipment to either roadside cabinets or secondary exchange building is likely to lead to at least the same or greater ongoing operating expense with respect to the services affected. In other words, there is no business case that supports undertaking a site divestment where telecommunication equipment must be rationalised and services rehomed to derive operating expenditure savings (as operating expenditure savings are often negligible when compared to the expenditure required).

- Although there have been some examples of excess land at exchange sites being subdivided and sold, this represents the “low hanging fruit”. Opportunities to divest excess exchange land and to rationalise old, disused buildings are increasingly rare.

- Assessment of the potential for divestment requires input from across Telstra. For an exchange site, the potential impact of divestment or rationalisation extends beyond the provision of fixed line services. Other network equipment – such as mobile towers, data services (ISDN, DDN etc) and transmission equipment may be also be present at the exchange site. The implication is that, even if the migration to the NBN was to allow for the decommissioning of all fixed line network infrastructure at a particular site, the costs of removing equipment and re-homing services is likely to be high.

- Where divestment has been considered with respect to active exchanges, the costs involved in moving active telecommunications equipment and re-homing services in order to rationalise the site have been very high – far exceeding the ongoing operating costs for the site – and in many cases rendering the potential divestment uneconomic. Two recent examples are set out below where rationalisation of superseded sites and older buildings has been unable to be achieved due to costs of rationalising remaining equipment and services outweighing the potential economic benefits:

[redacted]

[redacted]

- Many Telstra exchange sites have little market value – particularly those sites in rural and regional areas (which comprise the vast bulk of Telstra exchanges) – which makes it difficult to justify the expense required to develop the sites for sale.

- In urban and regional areas (i.e. Band 2 and 3 ESAs), most exchange sites occupy a relatively small land area and are located in residential areas. It is difficult to successfully market these properties unless the entire site can be cleared to allow for residential construction. The presence of telecommunication equipment – even if rationalised to a small hut – will severely impair the marketability of the site. The presence of cable paths, cable tunnels and duct access points also negatively impact on the ability make these sites sale-ready.

With respect to the last two points, data on the distribution of assessed network site value and the location of PSTN node equipment provides a compelling insight into the "catch-22" facing Telstra with respect to any large-scale divestment program with respect to its exchange buildings.

- For the reasons set out throughout this chapter, the presence of more complex network equipment – such as transmission hobbing infrastructure, Ethernet aggregation nodes and DSL hubs, as well as AXE and System 12 PSTN nodes – dramatically increases the costs and complexity of any potential network rationalisation. These exchange sites are not only essential to the provision of services within the particular ESA, but also to the provision of services in dozens of other ESAs.

- However, taking only PSTN node sites as an example; these [redacted] sites comprise make up [redacted] of Telstra's fixed line exchange network. However based on a comprehensive site valuation study conducted by PwC in 2006, these sites comprise approximately [redacted] of the total land and building value of the exchange network. The average values of these sites is more than [redacted] times the average assessed value for the remaining [redacted] of Telstra sites, as shown in the table below.

ESA type	% of Network	% of estimated Land and Building value (PwC 2006)	Average site value (PwC 2006)
PSTN Node	[redacted]		
No PSTN Node			

- This highlights the “catch-22”: where a site is sufficiently valuable and presents a marketable opportunity for sale, the interdependency of the network on that site, its use as a hub across multiple network platforms and the costs involved in any rationalisation mean that the business case for divestment will rarely, if ever, eventuate. On the other hand, sites with relatively less equipment and which are less “strategic” to the operation of the network as a whole are likely to be significantly less valuable or marketable. As such, even relatively low rationalisation costs will typically outweigh the potential economic benefits of divestment.

(f) **Telstra will not benefit from “passive” cost savings as end users migrate to the NBN**

The above sections outline the reasons why over the forecast period there will be few opportunities to consider network rationalisation as a result of the NBN rollout and even where those few opportunities emerge, the cost and complexity of undertaking rationalisation will almost certainly far exceed the potential for incremental operating expenditure savings.

A further consideration is whether the decline in active services on the fixed line network will present the opportunity for Telstra to benefit for “passive” cost savings. In particular, as customers migrate to the NBN fewer active services will be present on Telstra’s PSTN switching and DSLAM equipment.

As set out in Telstra’s October submission, it is unlikely that a reduction in SIOs due to NBN migration will lead to a proportionate reduction in power usage and associated costs. The interwoven nature of CAN network elements mean greater energy savings are not possible to generate:[104]

[redacted]

[104] Telstra Corporation, *Forecast Model v 1.05*, October 2014, p 39.

Observed impact of NBN migration on power use in selected ESAs

To illustrate the relationship between changes in SIOs and changes in power consumption in the fixed line network, Telstra has examined six ESAs impacted by the NBN rollout and where fixed SIOs have declined significantly due to NBN migration.

Telstra has undertaken analysis which seeks to:

1. illustrate the relationship between changes in SIOs and changes in power consumption in the fixed line network; and
2. compare actual average energy consumption per year (kWh) with expected energy decline (assuming Telstra's power consumption forecast savings in kWh) over the period 2010-2015.

Telstra identified the following six exchanges as case studies to illustrate the relationship between Telstra's actual power usage and changes in the number of fixed line network SIOs in that ESA:

- Armidale, New South Wales;
- Aspley, Queensland;
- Brunswick, Victoria;
- Nudgee, Queensland;
- Penrith, New South Wales; and
- South Morang, Victoria.

The following chart and table sets out the results of this analysis for Brunswick (Vic) and Armidale (NSW).

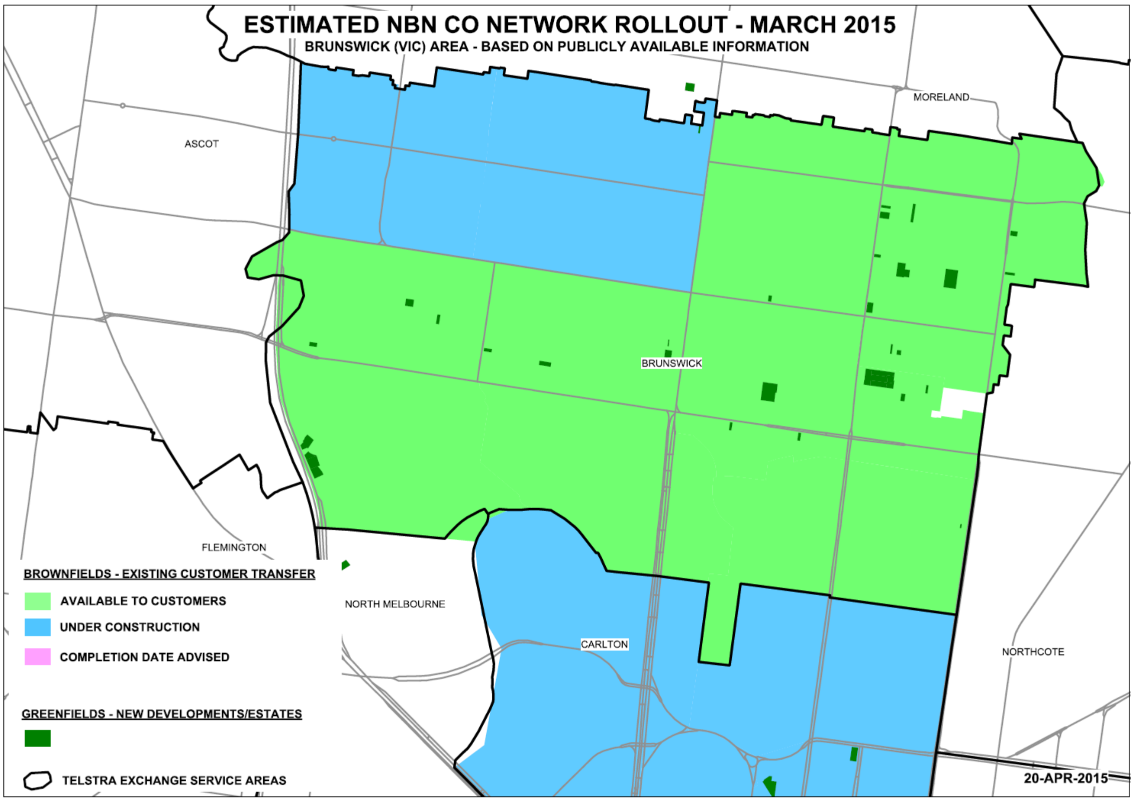
[redacted]

Table 16: Brunswick Power Usage v Number of SIOs

Year	Avg. daily power usage (kW)	Avg. number of SIOs	% of premises within an ESA that are expected to be completely migrated to the NBN (18 months post RFS)
2010	[redacted]	[redacted]	[redacted]
2011	[redacted]	[redacted]	[redacted]
2012	[redacted]	[redacted]	[redacted]
2013	[redacted]	[redacted]	[redacted]
2014	[redacted]	[redacted]	[redacted]
2015	[redacted]	[redacted]	[redacted]

As shown in the table above, by June 2015, [redacted] of premises (18 months post RFS) in Brunswick are expected to have been completed migrated to the NBN. NBN Co's actual and forecast fixed line network roll out is set out in diagram below.

Figure 18: NBN rollout in Brunswick ESA



Similar results are illustrated below for the Armidale ESA:

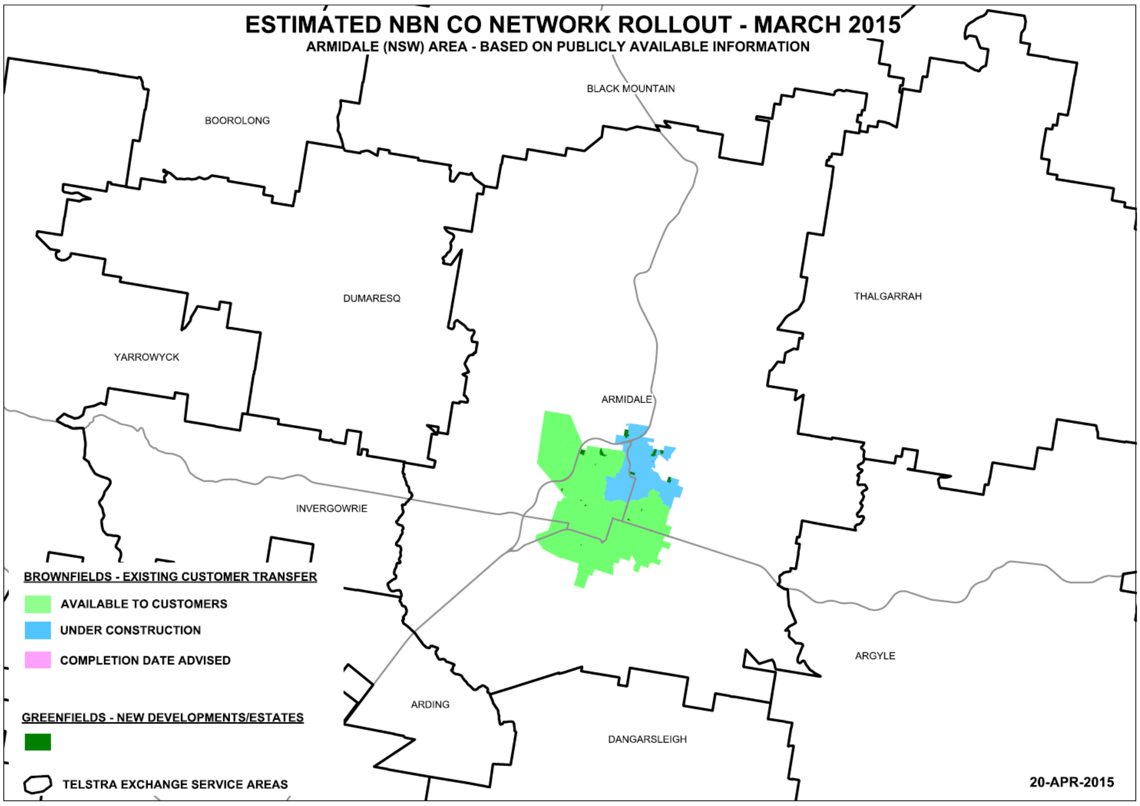
[redacted]

Table 17: Armidale Power Usage v Number of SIOs

Year	Avg. daily power usage (kW)	Avg. number of SIOs	% of premises within an ESA that are expected to be completely migrated to the NBN (18 months post RFS)
2010	[redacted]	[redacted]	[redacted]
2011	[redacted]	[redacted]	[redacted]
2012	[redacted]	[redacted]	[redacted]
2013	[redacted]	[redacted]	[redacted]
2014	[redacted]	[redacted]	[redacted]
2015	[redacted]	[redacted]	[redacted]

As shown in the table above, by January 2015, [redacted] of premises (18 months post RFS) in Armidale are expected to have been completed migrated to the NBN. NBN Co's actual and forecast fixed line network roll out is set out in diagram below.

Figure 20: NBN rollout in Armidale ESA



What can be observed from the results detailed above in Brunswick and Armidale is that significant declines in the number of active fixed line services in an ESA (driven by the migration of services to the NBN) does not result in a decrease in the level of power usage within the exchange building.

Similar results for the other case study ESAs are set out in Appendix 5.

(g) Telstra's Approach to Estimating Power Usage Reduction

As stated earlier, forecast decline in power consumption by telecommunications equipment as demand declines is modest. As not all equipment can be depowered as demand declines, the relationship between demand and power consumption by telecommunications equipment is not proportional.

As detailed in Telstra's Forecast Model Documentation, in order to forecast the reduction in power usage associated with operation of telecommunications equipment due to declining demand, the Forecast Model makes the following assumptions:

- a power saving of [redacted] kWh for each loss of a SIO by switching off power AXE cards within local switching stages;
- for every 1 kw/h decrease in power consumption by telecommunications equipment, there is a [redacted] kw/h decrease in air-conditioning power consumption;
- a [redacted] power saving on DSLAMs from assumed greater efficiencies and potential equipment rationalisation; and
- a [redacted] power saving due to ongoing general energy reduction initiatives.

By applying these assumptions to the case studies exchanges, it is possible to test the veracity of Telstra's network power forecast assumptions. The following table sets out the results of comparing % change in SIOs, % change in power consumption and predicted % change is based on Forecast Model assumptions across the 6 ESAs studied.

Table 18: Comparison of actual vs predicted change in power consumption

	% Change in SIOs 2010 to 2015	% Change in average power consumption 2010 to 2015 ('A')	Predicted % Change in power consumption based Forecast Model assumptions ('B')	Difference ('A' - 'B')
Armidale	[redacted]			
Aspley				
Brunswick				
Nudgee				
Penrith				
South Morang				

As shown in the above table,

- Irrespective of SIO decline, power usage remains relatively flat (and in some cases increases). This is particularly the case in Armidale, Brunswick and Penrith.

- In all cases examined, had Telstra applied its forecast power savings to the exchange profile, it would show that in all cases actual power savings achieved were much less than Telstra anticipate in the FLSM during the next regulatory period.

These observations clearly show the lack of a proportional relationship between power and SIO. Further, they provide strong evidence that in relation to potential power savings Telstra's forecasts are conservative and will likely overstate actual power savings that will be achieved with respect.

Appendix 5 sets out each of these case studies and analysis in further detail.

3.4.2 ITS – the cost of supporting IT systems relevant to the FLSM will not materially change as demand declines over the Forecast Period

In its Draft Decision the ACCC has raised concerns about the prudency of forecast opex associated with the ITS cost centre over the regulatory period – and seeks more information on why this cost centre has limited scope over the period to respond to forecast reductions in total demand for fixed line services (i.e. total SIO numbers).[105]

The ACCC raises two specific concerns:

1. The apparent inflexibility of ITS indirect cost centres given the expected fall in demand, associated with the NBN migration. The ACCC argues that [redacted][106] and

2. Even if Telstra sufficiently demonstrates ITS costs are fixed with respect to demand over forecast period, ITS costs that are allocated to FLSM asset classes may still be expected to fall. The ACCC argues that because the cost centre is constructed from the GL accounts where expenditure is shared between FLSM asset classes and Telstra's other operations, it would be expected that the decline in demand for fixed line services would

[105] Draft Decision , p 36.
[106] Draft Decision , p 39.

reduce allocation of total ITS to FLSM asset classes. However, the allocation of ITS and TSO to FLSM asset classes remains constant over the forecast period.[107]

In response to these concerns, Telstra provides evidence in this section to demonstrate that:

- ITS costs and ITS costs relevant to the FLSM are not driven by changes in end user demand for fixed line services. The key drivers of ITS costs and ITS costs relevant to the FLSM are:
  - the number and complexity of IT systems required to manage FLSM assets and services;
  - the functionality, service level requirements and service responsiveness required for a given IT system platform to meet the requirements of the business and our wholesale and retail customers;
  - productivity and efficiency savings negotiated with IT vendor partners and realised over the course of a given service contract; and
  - cost increases for IT professionals over time.
- Provided a given IT system continues to be required, the opex costs above related to the continued operation and support for that system are not expected to change materially, irrespective of changes in aggregate demand for individual fixed line services.
- To the extent that ITS costs may be able to be adjusted, this would require renegotiation of fixed-term contracts with Telstra's vendor partners – that are both speculative and uncertain. Negotiations around reduced vendor and licensing costs are also not based on demand, but on other attributes such as responsiveness, system SLAs (such as reliability) and performance – all of which need to be maintained throughout the regulatory period irrespective of the number of SIOs.
- The attribution of ITS costs to the FLSM and the CAF within the FLSM are efficient and prudent and have, in fact, been conservatively determined (such that they are likely to <u>understate</u> reasonable FLSM opex).

(a) ITS opex is relatively inflexible with respect changes in service demand and SIO volumes

The ACCC appears to recognise, and implicitly acknowledge, that IT system costs exist at a *"higher level of the 'cost hierarchy'".* This comment suggests, and Telstra agrees, that there is unlikely to be a close or direct relationship between these indirect operating costs and aggregate network demand. Nonetheless, the ACCC has requested more information to better establish their relatively inflexible nature.

Despite the comment above, the Draft Decision goes on to state (at page 39):

[redacted]

The ACCC is incorrect to assert that ITS costs will be impacted by [redacted]". Nothing of the sort will occur. As set out in detail in the statement of [redacted], Telstra's fixed line network will not materially "shrink" by FY2019. Telstra expects that it will still be operating largely the same number of exchange buildings, the same

[107] Draft Decision, p 39.

number of PSTN switches, DSLAMs, transmission infrastructure and associated fixed line network equipment.

Further, Telstra will still be supplying the same range of regulated and non-regulated services over the fixed line network. The NBN migration will not have reached a "steady state" in [redacted] of ESAs by Q1 2018, and this does not include the wide variety of legacy services that Telstra is required to continue to supply in these areas even after the NBN migration of standard services has been completed.

There is very limited, if any, scope for Telstra to decommission its network or systems, notwithstanding the fall in demand associated with NBN migration – and to try to do so early (before the rollout has reached "steady state") would be likely to impose higher opex than it would save, and this increase in opex would be inefficient and so has not been forecast in the FLSM.

If the ACCC is in fact referring to a [redacted] of fixed line SIOs to FY2019, then for reasons set out above, the assumption that a decline in SIOs will lead to a decline in ITS costs is incorrect. The number of SIOs on Telstra's network does not drive ITS opex – IT requirements and costs are a factor of the number and type of IT systems and underlying networks that Telstra operates and this will not change over the regulatory period.

Further, the ACCC's statement assumes that most ITS opex involves labour or staff costs associated with *"managing maintenance contracts with vendors".* Because Telstra contracts the majority of its maintenance of physical infrastructure to IBM (and this is the most labour intensive aspect of ITS operations), there is only a relatively small team of staff within Telstra who manage the relevant IT applications and vendor contracts. These staff predominantly sit in the Telstra NIO group (virtual and database environments), which forms part of the TSO cost centre.

The vast bulk of ITS costs are vendor contract and infrastructure costs, which for the reasons set out below are not able to be reduced.

ITS costs are driven by the complexity and number of IT systems that Telstra operates. The key aspects of the cost of ownership for IT systems are:

- Non-Discretionary Services vendor costs (**PS&M**) - production support and maintenance costs for each IT system or application. Telstra engages with a vendor, usually the creator or supplier of an IT application, to assist to maintain, fix and continually develop and manage the application. If for any reason there is a fault in application, an application goes offline, requires an upgrade or is no longer current Telstra also pays the vendor to perform work to rectify that issue;

- Application Software License vendor costs (**SWL**) – these are the costs of purchasing software licences and ensuring that the licences are current and compliant – including for upgraded versions of the software over time; and

- Infrastructure costs (including Production and non-Production costs) - costs to run the infrastructure, such as the servers needed to storage applications and software suites. Telstra engages IBM to manage this infrastructure, including services such as CPU, operating system images, stored disk and utilised disk infrastructure.

Production costs include those staff and other operating costs required on "business as usual" basis.

Non-Production costs involve development workshops and labs where our vendors and Telstra staff work together to develop, test and release into production enhancements, improvements and new versions for applications and software. Therefore, while there are Telstra staff costs associated with all three of the above activities, these reflect only a very small proportion of the ITS opex budget – and the great majority of costs involve either third party vendor contracts or the costs associated with software licences.

ITS opex is relatively fixed and does not decline with aggregate "network demand" because:

- the need for an IT application persists regardless of whether there is one customer or millions of customers – the systems are still needed to manage the service(s) and equipment;
- there is very limited opportunity for Telstra to reduce software licence fees as these costs are fixed by the software proprietor;
- the number of software licences that are required by Telstra is not related to total service demand, but rather, the number of licences needed is a factor of the number of copies of the software or application in use, and is unrelated to how many SIOs exist on the physical network; and
- while Telstra actively and routinely seeks to reduce IT costs through negotiations with vendors, this is a costly and uncertain process – and the factors that reduce costs are not related to the number of SIOs but to features of the relevant IT application or system, such as its reliability and performance and the vendors' response times for faults.

(b) **Any scope for reducing costs of ITS vendor contracts is unrelated to changes in demand**

There are a number of features of Telstra's relationship with its IT vendors which mean that they remain relatively stable over time, irrespective of any aggregate 'network demand':

- Telstra typically chooses a vendor based on a variety of factors, but the overarching principle/consideration is the need to promote business continuity. On most occasions, this means looking to give the vendor who built a system or application the ongoing role to manage, maintain and develop the platform. This assists Telstra in managing risk as despite the best of efforts in establishing a robust transition plan to facilitate movement between vendors, it is complex and there will often be issues, resulting in IT downtime, and lost productivity to employees and unnecessary costs to the business.
- Once a vendor relationship is in place, it is difficult and costly to change. Telstra's experience is that transitioning between vendors is that it is difficult once Telstra commits to a particular application.
- The terms of the contracts with vendors are relatively fixed (between 3-5 years). This limits Telstra's scope to renegotiate with vendors until the term of the contract has expired.
- The pricing of contracts with PS&M vendors are not processing volume related (i.e. pricing is not linked to SIOs).
- By and large, SWL and Infrastructure costs are not processing volume related but "peak capacity" related. These costs are very unlikely to reduce unless Telstra spend significant opex and capex to make this happen.

In Telstra's experience, the only material way that Telstra can reduce operating expenditure in relation to IT applications and systems is through renegotiation of the pricing of maintenance agreements, through reducing its requirements either in terms of:

- **hours of service** - it is possible that Telstra may seek to reduce costs by limiting the hours of service its applications run for (eg 7x24, 5x15); or
- **service level** – different vendors offer different service levels (eg Reduced, Standard, Fix on Fail Service, Prioritised) as part of their contracts. It is possible that Telstra could decrease costs by choosing a lower service level.

Neither of these cost reduction "levers" is related to SIO or total network demand. Further, it is unlikely Telstra would be able to reduce costs with respect to the relevant IT systems by seeking reduced hours of service or reduced services levels over the FY2015-2019 period. Over this period the range of regulated and non-regulated fixed line services is not expected to change – Telstra will be required to continue provide the full range of declared wholesale services currently provided over the fixed line network. Telstra has both regulatory and contractual requirements that require it to ensure that its standard of service is not compromised, even if the total number of services reduces.

The evidence therefore demonstrates that:

- while total SIO numbers are forecast to fall over the forecast period, the scope and complexity of Telstra's fixed line network will not materially change over the forecast period and therefore Telstra will continue to need to support its existing IT systems and applications throughout the NBN rollout;
- the main driver of ITS opex is not labour or staff related, but is associated with software licences and vendor costs; and
- the ability to reduce licence fees or vendor costs is extremely limited and the key levers are not linked to total SIO volumes, but relate to issues of service reliability and service levels.

For these various reasons, there is no basis for finding that Telstra has any meaningful ability of reducing IT operating costs over the period FY2015-2019.

Telstra's attribution of ITS costs to the FLSM and the allocation of these costs within the FLSM to services are conservative and likely to understate the relevant costs of the regulated fixed line services

(c) **Allocation of ITS costs**

As well as questioning the *quantum* of ITS opex, the ACCC appears to question the *allocation* of ITS opex that is attributed to FLSM asset classes and therefore included in the FLSM.

The Draft Decision states (at page 39):[108]

[redacted]

This reasoning conflates and confuses the way in which ITS and TSO costs are allocated to the FLSM and the allocation of costs within the FLSM from the FLSM Asset Classes to individual services.

As noted above, the same number and type of IT systems and applications are expected to be in place throughout the regulatory period. There is little, if any, realistic scope for Telstra to decommission or "shrink" its network or service offerings and associated systems over this period. The same IT systems and applications are therefore likely to be needed to support these services and the underlying network.

The systems identified that are relevant to the FLSM comprise the eleven IT systems that support the underlying network assets and equipment within the fixed line network, and the 31 additional systems that support the provision of the fixed line services (excluding retail-specific

[108] Draft Decision, p 39.

systems). These systems are designed to support services supplied over the fixed line network and the fixed line network itself. The fact that fewer end users may be supplied the services in question is an irrelevant consideration when assessing cost.

Further, although Telstra does not expect the material drivers of its forecasts to change over the period FY2016 to FY2019, the Forecast Model nevertheless assumes that Telstra will be able to extract efficiencies and costs savings with respect to ITS-related costs of [redacted] in real terms over the forecast period. Given the fact that the number of systems required to support the fixed line network and services is expected to remain unchanged over this period, the results reflect conservative modelling assumptions on how Telstra will be able to extract incremental efficiency savings from its IT vendor partners and internal efficiencies.

Finally, the operation of the CAF within the FLSM and the manner in which Telstra has attributed ITS costs mean that the actual incidence of IT costs being borne by fixed line services (and impacting prices for the declared wholesale services) is conservative.

This is particularly the case with respect to costs attributed to IT systems that support the provision of the fixed line services and are included within the FLSM as an "indirect operating expenditure" (as explained further in Appendix 1):

- Telstra only captures the percentage of costs for these shared systems attributed to the seven fixed line services. This is conservative based on the operation of the FLSM and the allocation of costs from FLSM Asset Classes to services. Within the FLSM, indirect operating expenditure is equi-proportionally spread across the FLSM Asset Classes. Operating expenditure with respect to each Asset Class is then (along with other costs) allocated to the services that make use of each Asset Class through a fully allocated cost model. The services that make use of the set of FLSM Asset Classes include services and platforms other than the set of fixed line services. As a result a proportion of the ITS expenditure attributed to the fixed line products through the TEM process is allocated to other services through the FLSM.

- A less conservative, and equally valid, assumption would have been to include 100% of the relevant IT systems share of ITS costs rather than only the proportion attributable to the fixed line services. This approach would have significantly increased costs included within the FLSM.

- A further alternative would have been for Telstra to only include the proportion of ITS costs for these systems that is allocated through the TEM process to the wholesale regulated services, but rather than attributing these costs to the FLSM Indirect Costs category, attribute these costs directly to the relevant regulated fixed line service. This approach would also be reasonable, and would have resulted in an approximately [redacted] increase in the attribution of ITS costs to the regulated fixed line services through the FLSM.

In summary, and in addition the ongoing operation of the fixed line network and the ongoing provision of fixed line services, Telstra's forecasts of FLSM-relevant ITS costs are conservative in forecasting a real decline in costs of [redacted] between FY2016 and FY2019. Further, the choices made by Telstra in determining the relevant proportion of ITS costs to attribute to the FLSM likely understate actual FLSM-relevant costs, and particularly understate costs relevant to the regulated fixed line services.

3.4.3 TSO fault monitoring activities will not decline in line with the decline in demand for fixed line services

In its Draft Decision, the ACCC expresses similar concerns in respect of TSO opex to those expressed in relation to ITS. [109]

[109] Draft Decision, pp 37-38.

The predominant drivers of operating expenditure within TSO are the costs of managing network performance – including faults and customer experience monitoring – and the costs associated with the operation of Telstra's IT systems. Work involved in the supporting the provision of Telstra services includes identifying and responding to network alarms and coordinating incident response. It does not generally extend to the actual technical response to issues (i.e. undertaking 'truck rolls') which is managed and undertaken by the CSD team within the Networks business unit, based on the information provided by TSO.

TSO's total operating expenditure is derived from three main activities:

- **IT specific costs (i.e. to keep servers running).** These are largely incurred under the IT Operations (NITO) business function. The NITO team responds to any incidents in IT applications and attempts to prevent them from reoccurring. It also undertakes proactive projects on Telstra's applications; for example, risk management, application monitoring, operational readiness, and server patching.

- **Network specific costs (all Networks) (i.e. monitoring of alarms)**. These are largely incurred under the Service Assurance Operations (**NAO**) and the Network Infrastructure Operations (**NIO**) business functions. The NAO team is responsible for, amongst other things, major incident management, IT incident management and emergency (eg bushfire) management. NAO monitors alarms for faults and must then isolate and address them. The NIO team is engaged when NAO's incident response fails and faults are escalated. The NIO team is the highest level of Telstra technical operations skills and knowledge. NIO embarks on end-to-end investigation and analysis of complex customer, product and Network Infrastructure issues.

- **Customer experience monitoring (eg investigating the cause of a wide-spread drop in ADSL speed)**. These are largely incurred within the NAO and the Network Service and Facilities (**NSF**) business functions. NAO (discussed above) undertakes fault identification, isolation and response. These faults can be brought to the NAO team's attention by monitoring customer experience. Additionally, the NSF team manages customer network faults.

TSO costs have only been assessed as potentially relevant to the FLSM from the four TSO functions set out above (NITO, NIO, NAO, and NSF). Other work areas within TSO are excluded from Telstra's attribution of costs to the FLSM, which represents a conservative approach to estimating relevant costs and is likely to mean that TSO opex forecasts understate actual FLSM-relevant expenditure.

Telstra acknowledges that TSO operating expenditure is not forecast to decrease in line with demand over the regulatory period.

As set out above, the key drivers of TSO costs are the costs of operating IT systems and the costs of monitoring Telstra's networks and coordinating incidence responses. With respect to those costs related to the operation of IT systems (i.e the work undertaken by the NITO group within TSO), the drivers of costs and the potential for FLSM-relevant costs to change over time are likely to be highly correlated with the cost drivers and forecast cost profile of the ITS line of business.

With respect to the other groups within TSO for which Telstra have identified FLSM relevant costs (NIO, NAO and NSF), the cost drivers for these groups are the monitoring of Telstra's networks performance and responding to incidents. These cost drivers are not, in turn, driven by changes in SIO volumes, but rather by the complexity of Telstra's network and the number of actively monitored network elements. These underlying cost drivers will not be impacted by the migration of customers to the NBN and therefore Telstra's forecasts with respect to FLSM-relevant TSO expenditure are reasonable and prudent.

(a) **TSO costs are not driven by SIO volumes**

Although the number of fixed line services will decrease substantially over the forecast period (FY2015-2019), the scope and complexity of the fixed line network will remain relatively unchanged, as will the requirement for Telstra to continue to provide the full range of regulated and unregulated fixed line services to customers throughout Australia.

This means that Telstra's fixed line network in FY2019 will remain in substantially the same configuration as is the case today. The fixed line network will remain similar in scope and complexity as is the case today. Telstra will continue to operate a national network of PDH, SDH and xWDM transmission systems. These systems will interconnect Telstra's PSTN voice infrastructure (more than [redacted] local exchanges, [redacted] PSTN nodes and more than [redacted] active network elements) and Telstra's ADSL infrastructure (including more than [redacted] DSLAMs).

Telstra has provided a considerable amount of detail earlier in this chapter as well as in the attached statement of [redacted] that further articulates why the migration of customers to the NBN over the period FY2015 to FY2019 will not impact on the scale or scope of Telstra's fixed line network.

The scale and scope of the fixed line network directly correlates to the complexity and cost of the work undertaken by TSO in monitoring the performance of network elements and customer experience on the network. Specifically, the number of alarmed network elements that TSO is required to monitor and, in the case of an alarm being raised, diagnose and manage the response to, is the primary driver of TSO (NIO, NAO and NSF) costs.

Reductions in SIOs do not lead to a reduction in the scale and scope of the network and consequently to do no impact the number of monitored network elements that TSO must manage.

This is illustrated in information from the TSO NAO team on the number of monitored PSTN elements within the fixed line network in June 2012 and March 2015, as set out in following table:

Table 19: [redacted]

[redacted]

The above tables shows that over the period June 2012 to March 2015, the number of actively monitored PSTN network elements barely changed (a reduction of [redacted] elements out of more than [redacted] Over the same period, Telstra's PSTN SIOs reduced by almost [redacted] services ([redacted]). In other words, Telstra's expereince to date with PSTN decline and associated reduction in SIOs is that it does not materially impact on the scope of the monitoring task facing TSO.

Further, there is no relationship between the number of SIOs and the number of alarms raised by monitored network elements. The following figure sets out the number of alarms raised by PSTN network elements over the period March 2013 to March 2015:

Figure 21: [redacted]

[redacted]

As is clear from Figure 21, whilst the number of SIOs has declined [redacted] over this period, the number of alarm events has not decreased, but has in fact increased over 2014-15. The volatility observed in these alarm data point to the fact that the underlying drivers of network alarms are not end-user related (or related to faults on passive distribution infrastructure) but are typically caused by external events affecting the network which will have a large and varied impact on TSO. For example, the majority of incidents and alarms that TSO are required to address are related to faults from PSTN card failure, lightning hits to network plant and equipment, water damage to externally housed and exchange-based PSTN equipment, transmission outages, cable cuts, power failures, as well as the damages caused by storms, bushfires, floods, and cyclones.

The decline in demand for fixed line services may reduce the number of premises receiving fixed line services, but it is not premises-specific faults that TSO deals with. Rather, it is large-scale problems that relate to large portions of the network.

Therefore, individual premises migrating to the NBN will not reduce the number of alarms and incidents that TSO must resolve as the fixed line services assets will still be in use throughout the regulatory period. This means that TSO costs which ensure that these fault-monitoring functions are performed, even solely for fixed line service assets, should not be expected to decline.

The fixed line network and the network equipment within the FLSM Asset Classes constitute the dominant share of Telstra's monitored network elements and the dominant share of alarm events monitored and responded to by TSO. This is due to the scale and scope of the network and the variety of relevant network elements – including PSTN, DSLAM and transmission network equipment. The following table sets outs the proportion of all alarm events monitored by TSO across different network and non-network (service) platforms. These data are for 2013 as this was the most recent year that a comprehensive count of network and non-network platform alarm events was captured:

Table 20: [redacted]

[redacted]

As set out in Table 21 above, is transmission network platform (and principally PDH and SDH equipment) is the dominant source of active alarm events monitored by TSO ([redacted] This reflects both the scale and scope of the transmission network and the number of actively monitored elements within it, as well as reflecting the interconnected nature of the network. The ring architecture of the transmission network can result in a single incident (such as a cable cut) leading to an "alarm storm" due to many transmission elements throughout the network signaling the problem.

Although to some extent the above data reflect the particular qualities of the fixed line network infrastructure, the results are similar based on an assessment of critical customer (level 1) incidents in the network. The following table sets out the number and proportion of level 1 incidents monitored and responded to by TSO in March 2015:

Table 21: [redacted]

[redacted]

Although the relative impact of the transmission and PSTN platforms with respect to critical customer impact events are the near inverse of what is observed for all alarm events, the key conclusion is unchanged; the dominant source of critical customer incidents is the fixed line network and the FLSM Asset Classes.

Further, although the IP data platforms and mobile network continue to grow (in terms of active equipment, cell sites and customers) it is not expected that the likely growth of this network over the forecast period will materially change the relativities between fixed line network assets and other network platforms over the forecast period.

(b) Allocation of TSO costs to the FLSM will not materially change over forecast regulatory period as fixed line services will still require fault monitoring despite the decline in demand

In the Draft Decision, the ACCC expressed concern that:[110]

[redacted]

Over the forecast period (FY2015 to FY2019), as customers move to the NBN it is unlikely that the task of monitoring the fixed line network will reduce in complexity or comprise a materially smaller proportion of TSO costs than is the case today:

- As set out above, the fixed line network will remain similar in scope and complexity as is the case today.
- By virtue of its scope, scale and the technologies deployed, the fixed line network (including the transmission network, PSTN network and ADSL network equipment) constitutes the overwhelming majority of monitored equipment. This will not change during the migration to the NBN.
- The migration of customers to the NBN will not materially increase the number of network elements required to be monitored by TSO. For NBN Connected customers, Telstra will not be required to monitor network elements beyond the 120 points of interconnect (**PoIs**) established by NBN Co. In comparison to the number of fixed line network elements that will continue to operate, the number of additional network elements related to NBN-based services is unlikely to be material.
- To the extent any monitored network elements may be rationalised or removed from scope of TSO operations, it will most likely be HFC networks. Although the precise impact of transfer of the HFC network to NBN Co is unclear at this stage, it is likely to result in fewer active network elements being monitored by Telstra. This will not be the case with respect to the transfer of copper cable infrastructure to NBN Co for the purposes of FTTN. This passive infrastructure does not directly impact on the operations of, or costs incurred by TSO.

Although the demand for fixed line services is forecast to decline over the regulatory period, this does not mean that the allocation of TSO costs to fixed line services will decline. Fundamentally, this is because Telstra will have to keep almost all of its fixed network online despite the decline in demand. Over the forecast period, the task facing TSO and the costs of their activities attributable to the fixed line network will not be materially impacted.

3.4.4 Drivers of forecast increase in fault rates

In the Draft Decision the ACCC has raised a number of concerns regarding Telstra's forecast costs with respect to addressing network faults and the underlying fault rates forecasts. Specifically:

- as regards the driver of the increase in growth of fault rates for FY2016–19. The ACCC indicate that Telstra has not provided sufficient detail on this aspect particularly in light of the

[110] Draft Decision, p 39.

fault remediation program which should continue to have a positive impact on the number of faults.

- that there is a lack of sufficient justification that NBN induced faults are excluded from its forecast growth of fault rates.

Telstra responds to each of these concerns below.

Between [redacted], Telstra observed the [redacted][111] For the years FY2015 and FY2016, Telstra forecasts a growth in the fault rate that is the below the long term trend. However, Telstra anticipates that [redacted].[112]

The key drivers of the increase in fault rate growth for the period 2016-2019 relate principally to three factors. These are:

- ageing legacy copper infrastructure and dispersion in faults limit benefits of joint remediation activity ;

- increase in uptake of customer of new technologies and changes in customer behaviour ; and

- the greater proportion of ULLS services on Telstra's network will necessitating more field visits and therefore Telstra will incur higher costs.

Each of these are discussed below in detail.

(a) **Limited potential to address these issues through prudent capital expenditure**

Telstra has previously provided significant information regarding the drivers of faults. In Telstra's October 2014 submission, it was stated

[redacted]

Telstra's joint upgrade and remediation program seeks to address worst performing areas of the network (i.e. those joints/cables that are generating repeated faults). In assessing which sites qualify for remediation under this program, Telstra will prepare a business case for evaluation and will only undertake remediation of the identified joints/cables if the business case is NPV+ (as would any prudent business).

The business case will consider the costs incurred by Telstra in undertaking this remediation work (which will include the costs incurred in sending a technician, cost of material (connectors and cable), hauling in cable (when appropriate), project management costs etc. and these costs must

[111] Telstra Corporation, *Forecast Model v1.05,* October 2014, p 31.
[112] Telstra, *Opex Forecasts, Fixed Services Forecast Model v1.1*, January 2015.
[113] Telstra Corporation, *Forecast Model v1.05,* October 2014, p 32.

be outweighed by the benefit associated with this work (or cost savings which will be made) over a defined payback period. Put another way, if the costs Telstra will incur of remedying individual services/episodes caused by faulty joints on an ongoing and repeated basis are less than the cost of undertaking the joint/cable remediation, that site would unlikely be considered suitable under the joint upgrade and remediation program. Therefore, only joints/cables that are causing widespread customer faults (in terms of premises affected) on a repeated basis are likely to be suitable candidates under this program.

Given the geographic dispersion of faults, the ability to cost-effectively scale the joint remediation program is limited.

(b) **Increase in uptake of customer of new technologies and changes in customer behaviour**

Another reason why fault rates are expected to increase above the long term average from 2016 onwards relates to the increase in uptake of broadband vis a vis PSTN. As stated in Telstra's October submission:

[redacted]

Availability of broadband has become increasingly important for consumers. ACMA reports that users are engaging more intensively online than ever before, reporting that between the period between June 2013 and June 2014, there was an increase of [redacted] in the volume of data being downloaded in Australia.[115]

Changing consumer behaviour has also seen broadband become a substitute for traditional PSTN voice services, thus if users identify a fault with their broadband service, they are more likely to report a fault. In their most recent Communications Report, ACMA highlight this shifting consumer preference:

> *There is continued evidence of a shift in communications preferences to OTT and mobile services. For example, fixed-line telephone services in operation declined by over two per cent to 9.19 million, in line with the trend over recent years. However, users of voice over internet protocol (VoIP) services increased by six per cent to 4.87 million people with the majority of growth in VoIP usage related to OTT services such as Skype.*[116]

The following figure highlights the issue facing Telstra over the forecast period. Although absolute SIO numbers are forecast to decline significantly between FY2015 and FY2019, the proportion of PSTN services supplied in conjunction with either a retail or wholesale ADSL service is expected to continue to increase ([redacted] percentage points over the period) and this service combination will constitute the majority of PSTN services by the end of the period.

[114] Telstra Corporation, *Forecast Model v1.05,* October 2014, p 32.
[115] ACMA, *Communications Outlook 2013-2014*, p 13.
[116] ACMA, *Communications Report 2013-2014*, p 4.

[redacted]

(c) **The greater proportion of ULLS services on Telstra's network will necessitate more field visits incurring higher costs**

As at 2013/2014, ULLS represent [redacted] of total fixed lines. This is projected to increase to [redacted] in 2018/2019. This changing distribution of fixed voice services (specifically, the increased presence of ULLS) will be a further significant driver of faults and is a key reason why fault rates are expected to be above the historic trend over the forecast period.

[redacted]

It is important to note that the fault rate information within the Forecast Model reflect the rate of field visits (or “truck rolls”) per SIO in a given year. This particular fault metric was used (as opposed to all “called in” faults for which a truck roll may or may not be required) as it better matches the costs incurred by CSD in addressing faults. In other words as CSD costs are driven by the need to undertake field work to either diagnose or address a fault, Telstra relied on historic information and forecasts of field visits per active fixed line for use in the Forecast Model.

This distinction is important in understanding why the growth of ULLS as a proportion of services will impact on the fault rate.

When a fault is reported for a ULLS based service, it is almost always necessary to send a technician out to site to inspect and rectify the fault. Unlike other resale based services (i.e. WDSL, WLR) where Telstra maintains visibility of the end to end service as it remains on Telstra’s network, Telstra is unable to diagnose the fault remotely (through its SULTAN system.) Therefore, this limitation in almost all circumstances necessitates a field visit (resulting in higher costs to remedy).

Telstra has previously detailed some of the technical challenges it faces in the context of WDSL and specifically, why it would not be possible to offer Naked DSL. Specifically, Telstra identified the following:

> *Naked DSL would increase the costs of service assurance and would likely lead to a greater number of line faults.*
>
> *All of Telstra’s network management protocols, network management experience and tools and assets are built upon the CAN being primarily utilised for the provision of PSTN services. The presence of the PSTN service enables Telstra to utilise its automated line testing and assurance infrastructure. Without the ability to carry out metallic line test (MLT) on end user access lines, Telstra’s ability to detect, manage and restore network faults is significantly compromised.*
>
> *Over time, the removal of the PSTN service is also likely to lead to a greater number of line faults. The presence of wetting current provided by PSTN equipment, mitigates the effects of oxidisation build up that can lead to line faults. Telstra has observed that in the absence of an active PSTN service, the number of line faults increases and evidence was presented to support this in Telstra’s October submission.*
>
> *Service assurance is a critical aspect of service provision and assurance costs are a major component of Telstra’s cost of provisioning copper based services. A requirement to provide Naked ADSL services would increase the service assurance costs faced by Telstra. This is because Telstra would be unable to utilise its existing automated assurance systems and standard processes (as these are dependent on the presence of an active PSTN service). This would result in higher ongoing costs of providing Naked ADSL services.* [117]

As Naked DSL is provided over ULLS by access seekers, an important parallel can be drawn. The lack of a PSTN service on Telstra’s network necessarily limits Telstra’s ability to detect, manage and restore faults, particularly through remote means. Therefore as the changing distribution of services on Telstra’s network continues to bias ULLS over the regulatory period, Telstra is likely to incur rising costs over the regulatory period. Conflating these technical limitations with the challenges of an ageing network and geographical dispersion of faults, these drivers all conflate to explain why Telstra’s forecasts costs and fault rate are rising over the regulatory period.

---

[117] Telstra, Response to the Commission’s Draft Report in the Public inquiry to make a final access determination for the Wholesale ADSL service Public version, 5 April 2013. Pg. 20

NBN induced faults is excluded from its forecast growth of fault rates

Telstra has provided sufficient detail in its 30 January response to the ACCC's specific question on regarding whether or not the forecast increase in the fault rate is due to the expected impact of the NBN. In Telstra's submission, Telstra clarified its previously stated position in the October 2014 submission:

[redacted]

[redacted]

Specifically, Telstra take this opportunity to clarify earlier submissions made on this point. The relevant fault forecasts do not make any provision for the NBN, given it is based purely on historical data which to date has featured no NBN impact.

3.4.5 Propex

The ACCC and WIK raise three concerns in relation to Telstra's forecast propex:

- the ACCC considers that NBN-related propex should not be included, since this expenditure is incremental to the NBN rollout;
- the ACCC is concerned that there is a lack of evidence in support of the relevance, efficiency and prudency of Telstra's propex forecast; and
- WIK is concerned about the treatment of propex as opex. Its view is that propex should be treated as capex rather than opex, because it believes that:[119] *"the activities associated with propex are either the commissioning of new assets or an extension of asset lifetimes and this expenditure should be capitalised."*

The first of these issues is addressed in section 5, and the second issue is addressed in section 4. Therefore this section only addresses the third issue, regarding classification of propex as opex.

Telstra has addressed WIK's concern regarding the classification of propex as opex on numerous occasions, including as part of our response to an information request in January 2015 where we provided Telstra's capitalisation policy. In the Draft Decision, the ACCC acknowledge Telstra's various responses evidencing propex expenses as an opex, but still raise the concern of double counting total expenditure when propex and capital expenditures are allocated to the same asset class. [120]

As previously explained, expenditure related to a Telstra "capital project" may be either operating expenditure (in which case it is propex) or capital expenditure (capex). Expenditure on a project will be classified as ***either*** propex ***or*** capex in accordance with Telstra's capitalization policy. Expenditure cannot be double counted as propex and capex.

In this respect, use of the term "capital project" may be somewhat misleading. The fact that a project is labelled as such does not mean that all expenditure associated with the project will be capex. Rather, it simply means that the project requires approval through Telstra's internal processes. This is the key point of distinction between propex and other opex – propex is not labelled as such because it is capital in nature; rather, opex will be labelled propex if it is associated with a project requiring approval (as distinct from other opex that is more of a "business as usual" nature).

Many projects will involve a mix of capital and operating expenditure, while some projects will be purely opex or capex. This will depend on the nature of the project, and the extent to which required expenditure meets the thresholds for capitalisation under Telstra's capitalisation policy.

---

[118] Telstra, *Fixed line services access determination inquiry: ACCC request for information,* January 2015, pp 11-12.
[119] Draft Decision, p 53.
[120] Draft Decision, p 51.

The rules applied by Telstra to determine whether project-related expenditure is capex or propex are set out in Telstra's capitalisation policy (provided to the ACCC on 30 January 2015). This policy states:[121]

[redacted]

It is not clear from WIK's report whether it disagrees with this test for capitalisation in Telstra's capitalisation policy, or whether they believe that Telstra has not properly applied this test in classifying propex as opex. However, since the tests proposed by WIK are practically equivalent to those applied under Telstra's capitalisation policy, it would appear to be latter.

After comparing Telstra's capitalization policy with the rules proposed by WIK, Mr Smart concludes:[122]

> *Therefore, I conclude that there is no practical difference between the test that WIK proposes (apart from the imprecise language that they use) and the test in Telstra's accounting policy. WIK's claim [that the expenditure to which Telstra refers as "PROPEX" is in fact "CAPEX"] would only be correct in the unlikely event that Telstra did not follow its own accounting policy with respect to the PROPEX forecasts in its FLSM.*

Telstra strictly adheres to its capitalisation policy in classifying project-related expenditure as capex or propex. Therefore, given that our capitalisation policy aligns with the rules proposed by WIK, there can be no basis to concern regarding Telstra's classification of propex as opex.

3.5 Other issues

3.5.1 Business support mark up adjustment

Telstra updated its FLSM forecasts in January 2015 after identifying a number of errors. One of these involved its calculation of the Business Unit Support mark-up, which was increased from [redacted] to [redacted]

The Draft Decision rejects Telstra's proposed increase in the Business Unit Support mark up, on the basis that the explanation provided by Telstra (on 6 February) was inadequate.

Telstra provided an explanation of the correction made to the mark-up in its response dated 5 March 2015, as set out below:

Telstra's GL records individual GL cost items within the Telstra Operations Business Support function. These individual GL cost items were then further grouped in four broad operating expenditure categories, based on the nature of the cost items. These categories are provided below:

- Asset and Facility Management
- Labour and Contract Management

[121] Telstra, *Telstra's Corporate Accounting Policy (CAP) 012.2, Property, Plant and Equipment – Asset Expenditure Recognition Rules,* p 3.
[122] Appendix 13: Mike Smart, *Review of WIK report to ACCC*, April 2015, p 14.

- Business Performance Management
- Other, including senior management of Telstra Operations.

In order to calculate the mark up ratio, Telstra extracted all expenditure relating to the Telstra Operations Business Unit. Total expenditure for Telstra Operations totalled [redacted] for FY2014. Expense totals for the support functions within this LOB covering Asset and Facility Management, Labour and Contract Management, Business Performance Management and senior management were identified. Total expenditure for these sub functions totalled [redacted].

Table 22: Calculation of total BU support expense

	FY2014 Cost $ million
Total TOPS Operating Expense (excluding depreciation and amortization)	[redacted]
BU Support lines of business	[redacted]
Asset and Facility Management	[redacted]
Labour and Contract Management	[redacted]
Business Performance Management	[redacted]
Total BU Support Expense	[redacted]

Originally, the ratio was calculated as:

$$\frac{\sum\{Total\ Opex\ BU\ Support\}}{\sum Total\ Opex\ TOPS}$$

Where

$\boldsymbol{\sum Total\ Opex\ TOPS}$ is the total expenses for Telstra Operations in FY2014 as extracted from the GL;

$\sum\{\boldsymbol{Total\ Opex\ BU\ Support}\}$ is the total of actual expenses in FY2014 as extracted from the GL for the support functions listed above.

The resulting ratio was calculated as:

[redacted]

However, this produces the proportion of the total Telstra Operations opex which is BU Support, rather than the amount which is required to be added to reach the total Telstra Operations opex. To produce a markup which when applied produces the additional amount of costs required to achieve the total TOPS opex, the BU Support opex must be subtracted from the total Telstra Operations opex in the denominator.

The revised ratio is calculated as:

$$\frac{\sum\{Total\ Opex\ BU\ Support\}}{(\sum Total\ Opex\ TOPS - \ \sum\{Total\ Opex\ BU\ Support\}\ )}$$

The resulting ratio is calculated as:

[redacted]

This ratio is then applied to the Total FLSM Direct and Indirect Opex for each Line of Business within Telstra Operations – CSD, Networks, ITS and TSO, to calculate the Telstra Operations Business Support as an indirect overhead expense.

3.5.2 Productivity and efficiency factors

The ACCC expresses concern that Telstra has not provided sufficient explanation as to why it has not applied efficiency indices to all its cost centre activities. For example, the ACCC notes that not efficiency gains are assumed for building outgoings.[123]

As explained in the Forecast Model Documentation, efficiency gains are assumed in areas where the relevant business unit has set efficiency targets:

- in the Networks line of business, it is assumed that there will be a [redacted] per annum efficiency gain across both external maintenance contracts and internal labour;
- in ITS, a [redacted] per annum efficiency gain is assumed for IT professional services costs and salary costs; and
- in TSO, a [redacted] per annum efficiency gain is assumed.

Telstra has previously explained that these business unit efficiency targets are not necessarily reflective of what has been achievable in practice, but rather reflect management objectives to drive business productivity and reduce costs. Telstra considers that these are ambitious targets, and are likely to overstate the true potential for efficiency gains.

However, Telstra has not assumed efficiency gains in its forecasting where such gains are not considered to be feasible by the relevant business units. This simply reflects the fact that there is less scope for efficiency gains in some areas. For example:

- No efficiency gains are assumed for building outgoings, since there is limited scope to improve efficiency in this area. Telstra must continue to maintain its network buildings, and we do not anticipate that the cost of this upkeep can be materially reduced; and
- No efficiency gains are assumed for fault repair. As previously explained, fault repair costs are simply a function of the fault rate, the number of SIOs, and the unit costs of repairing faults. Telstra does not consider there to be scope for material efficiency gains in this area.

3.5.3 Capex-opex trade off

The ACCC expresses a concern that Telstra has not adjusted its forecast operating expenditure to reflect a trade-off between opex and capex. The ACCC suggests that there may be some opex savings due to "capital deepening" over the forecast period, which Telstra has not factored into its opex forecasts.[124]

Telstra does consider opex-capex trade-offs as part of its ongoing business planning and expenditure forecasting. A critical issue for Telstra in recent years has been the extent to which it should continue to invest in rehabilitation and upgrades to its legacy copper network infrastructure,

[123] Draft Decision, p 48.
[124] Draft Decision, p 57.

and the impact that reduced investment may have on operating and maintenance costs. As previously noted, Telstra has been [redacted].[125]

The way in which Telstra forecasts its operating and capital expenditure reflects these ongoing trade-offs, is based historical trends. For example, in relation to the trade-off referred to above:

- The ongoing reduction in capital expenditure associated with network rehabilitation and rejuvenation will be reflected in historical trends in capex for key asset categories such as copper cables and ducts. Through the use of trend-based capex forecasting, these past reductions in capex will be forecast to continue over the forecast period; and

- The effect of this reduced capex on fault repair costs will be reflected in historical trends in the network fault rate. Since historical trends in the fault rate are used to forecast fault rates (and repair costs), forecasts of fault repair costs will reflect this ongoing trade-off between network investment and opex / maintenance costs.

It is not true that there will be "capital deepening" over the FY2016-2019 period, and therefore there is no reason to expect that there would be opex savings associated with capital deepening. On the contrary, Telstra is forecasting very significant reductions in capital expenditure, from [redacted] in FY2015 to [redacted] in FY2019 ($FY2009). The reduction in forecast capex is more pronounced in some asset classes – for example a [redacted] reduction in annual capex is forecast for the copper cables asset class between FY2015 and FY2019.

The ACCC appears to consider that "capital deepening" occurs where there is an increase in "unit capital expenditure" (capex per SIO). This is not the case. The forecast increase in capex per SIO over the forecast period is due to the significant decline in demand that is forecast over this period and the associated loss of economies of scale – it is not due to any form of "capital deepening" that would reduce opex requirements, such as increased spending on network remediation or rehabilitation.

[125] Telstra Corporation, *Forecast Model v 1.05*, October 2014, p 32.

4. Capital expenditure forecasts

Key points:

Telstra's methodology for forecasting FLSM relevant capital expenditure is reasonable and appropriate by combining relevant historic trends with project and asset-specific capital expenditure planning information.

The forecasting approach adopted is conservative by design:

- Telstra was selective in only forecasting capital costs on the basis of ongoing programs of work. Where prior years capital expenditure is used as the basis for forecasting future requirements, expenditure incurred under short-term and one-off programs has not been included. This means no allowance is provided in the forecasts for similar short-term or otherwise new programs of work over the forecast period.
- The approach used by Telstra sets aside over [redacted] in past capital expenditure attributable to the FLSM Asset Classes on the basis that the programs under which this expenditure is incurred are not expected to continue past FY2014. If this expenditure had been included for the purposes of forecasting, capital expenditure on the FLSM Asset Classes for FY2015 to FY2019 would be at least [redacted] higher in nominal terms.
- Forecast trends are 'capped' where there is historic evidence of increased expenditure with respect to an FLSM Asset Class over time, whereas trends evidencing decline expenditure are forecast to continue unabated. If Telstra did not impose this cap, forecast capital expenditure reduces forecast capital expenditure on the FLSM Asset Classes for FY2015 to FY2019 would be over [redacted] higher in nominal terms.

More importantly, the forecasts produced by Telstra's forecast model are demonstrably conservative – and already trending significantly below actual capex requirements. Based on Telstra's recent capital planning round for FY2016, Telstra's budget for capital expenditure on the FLSM Asset Classes for that year will exceed the FLSM forecasts by [redacted] (in nominal terms).

The need to increase capital expenditure above what was originally budgeted for FY2016 reflects delays in the rollout of the NBN and unexpectedly strong growth in new estates and residential developments. However, Telstra does not propose to modify its FLSM capex forecasts to reflect this more recent and up-to-date information, at this stage.

This real world experience stands in contrast to the near "linear relationship" assumed by Telstra within the capital expenditure forecast model between the rollout of the NBN and reductions in capital expenditure on relevant assets. As evidenced by the comparison to FY2016 budget figures, this is a highly conservative assumption and is unlikely to reflect the actual profile of future capital expenditure, based on the nature of the NBN rollout, and the nature of Telstra's fixed line network this relationship is likely to overstate the impact of the NBN on forecast capital expenditure-particularly in the first half of the forecast period.

Telstra's treatment of NBN-related capital expenditure is reasonable, efficient, and in line with the Fixed Principles. Following the conclusion of the DA process, Telstra has further reviewed its approach to forecasting Telstra has updated its estimates for both NBN-related capital expenditure and NBN-related propex. As a result of this updating, NBN-related capital expenditure is now forecast to be [redacted] between FY2015-2019, while NBN-related propex is forecast to be [redacted] between FY2016 and FY2019.

This chapter sets out Telstra's response to the key concerns raised by the ACCC in the Draft Decision in relation to Telstra's capital expenditure forecasts.

The Draft Decision identifies four principal concerns with Telstra's forecast capital expenditure:

- The use of a moving linear trend methodology (based on 4-years historical expenditure data) for extrapolating capex forecasts is said to not provide a sound method of forecasting capital expenditure (page 68).
- The ACCC adopts the recommendation of WIK that no capital expenditure which is incremental to the NBN should be allocated to FLSM asset classes. Principally this is expenditure associated with duct remediation.
- The ACCC has specifically questioned the prudency of forecast capex related to transmission assets, which it says do not appear sufficiently linked to changes in demand.
- The ACCC considers that expenditure that is not incremental to the fixed line services should be excluded from the FLSM – and on this basis queries expenditure associated with a number of IMC codes that appear unrelated to fixed line services.

4.1 Telstra's capex forecasting methodology is reasonable, and the 'asset-volume' alternative proposed by WIK is flawed

Telstra undertakes its capital expenditure planning at a project level and not at an individual asset level – reflecting the size, scale and complexity of its operations.

In its Draft Decision, the ACCC expresses concern that Telstra's approach [redacted].[126] The ACCC suggested [redacted][127] Its Draft Decision was, therefore, that Telstra's *"proposed capital expenditure forecast methodology does not provide sufficient evidence on the linkage between cost drivers and the forecasts"*.[128]

These criticisms, which derive largely from the input received from WIK and accepted by the ACCC, involve rejecting Telstra's methodology on the following basis:

- The only appropriate basis for forecasting capex is to "build up" a capex forecast based on a forecast of future requirements for individual network assets over the period (i.e. "asset quantities"[129]) – WIK go as far as to claim that acceptable forecasts must be *"based on underlying asset types and asset quantities* [redacted]*"*[130];
- Telstra's approach, which relies in part on a modified linear trend analysis – does not reflect an assessment of underlying asset volume requirements.
- WIK argues that Telstra's approach is "[redacted] and "[redacted]".[131]

These criticisms of Telstra's approach are misguided, including for the following reasons:

- The FLSM Fixed Principles point towards the use of historic values as being a reasonable basis for the assessment of future values. This is the essence of the approach Telstra has adopted: using capital expenditure information from recent years as the basis for determining likely future year values. This approach is consistent with clause 6.10 of the Fixed Principles, and the ACCC's own previous FAD decisions.

[126] Draft Decision, pp 67-68.
[127] Draft Decision, pp 67-68.
[128] Draft Decision, p 69.
[129] Draft Decision, p 68.
[130] Draft Decision, p 69.
[131] Draft Decision, p 69.

- Telstra has not relied on gross or aggregated information in determining relevant past period capital expenditure with respect to the FLSM Asset Classes, rather it has used detailed information on projects undertaken by Telstra to only capture expenditure attributable to the relevant FLSM Asset Classes and only from relevant projects that are expected to continue into the forecast period.

- Telstra does not rely simply on historic or linear trends, but overlays a series of adjustments that reflect conservative (prudent) assumptions regarding forecast capital expenditure, specifically:

  - For FLSM Asset Classes most likely to be directly impacted by the NBN, Telstra has assumed a direct, linear relationship between the NBN rollout and decline in capital expenditure, implying that Telstra will able to reduce its capital expenditure in proportion to the NBN rollout.

  - For asset classes where past period trends suggest an ongoing increase capital expenditure, Telstra has employed a "cap" that limits the annual increase in capital expenditure for a given asset class to [redacted]

  - Ultimately this adjustment process ensured that Telstra's forecasting methodology for capital expenditure was [redacted], contrary to the ACCC's conclusion.[132]

- Far from being "arbitrary" or "lacking transparency" – the methodology used by Telstra is internally consistent, has been subject to ongoing review and improvement – including to address calculations and transposition errors identified by the ACCC – and is explained and supported in numerous submissions and explanatory statements provided to the ACCC in the FAD Inquiry process.

- The WIK proposal is simplistic and fails to recognise that while Telstra does not forecast investment at an **asset** level, it does do so at a **project** level and this formed an important part of Telstra's forecasting methodology. Telstra transparently adjusted its capital expenditure trends based on analysis of IMC project codes in order to remove projects that would otherwise affect the linear result but which were either not FLSM-related, or which involved projects unlikely to continue throughout the regulatory period. However, no adjustment was made to assess the likelihood of new projects emerging (i.e. the use of IMC codes meant that projects and expenditure were removed from the linear forecast, but none was added) – resulting in a considerable downward bias in the forecasts.

The alternative, "asset volume" approach proposed by WIK would require Telstra to individually identify the investment required in each physical unit in its network over the next five years. Mr Smart summarises the impracticality of the approach proposed by WIK:[133]

> *WIK complains (notably in s2.6 and s5.8) about the lack of information provided on physical quantities of assets, about the lack of granularity in asset information, and about the lack of data that would permit WIK to estimate Asset-Volume Relationships ("AVRs") and Cost-Volume Relationships ("CVRs").*
>
> *It is true that Telstra did not provide physical asset information at the level of detail that WIK would prefer. This information would be extremely detailed and complex. For example, (par. 249) WIK states that a list of cost centres has to be prepared (to derive CVRs and AVRs), and (par. 251) WIK says that a separate primary cost centre would be required for each copper loop cable, each MDF, each DSLAM, and every piece of transmission or switching equipment. In a service area containing more than 10 million SIOs the proposed number of cost centres would be unmanageably large. This proposed*

[132] Cf. Draft Decision,, pp 67-68.
[133] Appendix 13: Mike Smart, *Review of WIK report to ACCC – Final Report*, April 2015, p 7.

bookkeeping structure would be very costly to manage in an accounting sense, but also disproportionately detailed for the task of benchmarking AVRs and CVRs.

The apparent intention to benchmark AVRs and CVRs is also fraught with comparability challenges. Population and traffic densities in Australia are vastly different from those in Europe, where WIK's knowledge base is presumably founded (being a German firm).

Telstra operates over [redacted] exchange service areas (**ESAs**), each linked by a complex network of PDH, SDH and xWDM transmission systems and optical fibre. More than [redacted] local area and trunk AXE and System 12 PSTN switches support the provision of voice services and more than [redacted] DSLAMs in combination with aggregation and routing hardware enable the provision of DSL services in [redacted] exchanges. Given the size of Australia, Telstra's is one of the most geographically dispersed networks of any incumbent in the world.

Telstra's network is simply too extensive and complex to project the investment demands for individual assets or types of assets over a 4-year period. This is particularly the case as Telstra does not in the ordinary course of its business planning seek to quantify capital expenditure on the basis of physical units. Telstra's capital planning process are focused on achieving outcomes for our retail and wholesale customers. Therefore if Telstra were required to adopt a physical-based forecasting model, it would have to be developed from scratch and would require the development of information that is not routinely recorded or systematically stored by Telstra. It would be unreasonable and impractical to implement.

Instead, Telstra has adopted a forecasting methodology that is not only reasonable and practical, but also highly sophisticated. While Telstra accepts that a linear trend methodology necessarily involves a simplification of likely future capital expenditure, in implementing this methodology Telstra has ensured that:

- to the maximum extent possible, the simplification reflected in the trend is tested by reference to IMC project-specific information to corroborate and guide the forecast;
- the overall trend aligns with Telstra's internal capital forecasting; and
- where adjustments are made (to remove specific IMC projects from the trend) – this results in a downward bias.

The methodology that has been used by Telstra is reasonable, internally consistent, and transparent and includes a number of conservative assumptions that are, if anything, likely to result in a strong downward bias, and are therefore likely to mean that the capex forecasts understate capital expenditure on the relevant FLSM Asset Classes over the forecast period.

Finally, the use of historic capital expenditure data and trends as a basis for forecasting is supported by the fact that Telstra has a strong incentive and internal systems in place to ensure its capital expenditure is prudent and efficient as a rule. As set out in Telstra's October 2014 submission in response to the ACCC's discussion paper:

Telstra faces very strong incentives to ensure that all its capital expenditure is prudent and efficient, and that mandated reliability standards and service levels are met at least cost.

As noted above, the vast majority of Telstra's revenue is derived from services which are not price-regulated. As a result, Telstra faces competitive pressure to reduce costs wherever possible (subject to regulatory obligations), as any cost reductions directly contribute to Telstra's competitiveness and improve its overall financial performance. On the other hand, any inefficiency or imprudent spending will clearly be detrimental to the business' performance.

Further, to the extent that Telstra does derive revenue from price-regulated services, the determination of these prices is not based on its actual expenditure (rather, it is based on *forecast expenditure). This means that Telstra effectively keeps the benefit of any efficiency gains that it makes, and bears the cost of any inefficient or imprudent spending. In short, Telstra has no incentive to 'gold plate' or spend inefficiently. The fact of the NBN rollout, and the transition of customers from the fixed line network to the NBN is a further constraint on any incentive Telstra could conceivably have to spend inefficiently – particularly with respect to those assets that will be directly impacted by the NBN.*[134]

The method used by Telstra in determining FLSM relevant capex over the forecast period is set out in below.

4.2 Telstra's approach to forecasting capital expenditure

The methodology adopted by Telstra to forecast its capital expenditure was revised for this regulatory period as compared to the approach adopted for the previous FAD.[135] The new methodology moved from a simple percentage mark-up of an observed base year to an approach based on past period information on capital expenditure at a project level, further disaggregated by its attribution to FLSM Asset Classes. [redacted].[136]

4.2.1 Incorporating IMC project information into FLSM capital expenditure forecasts

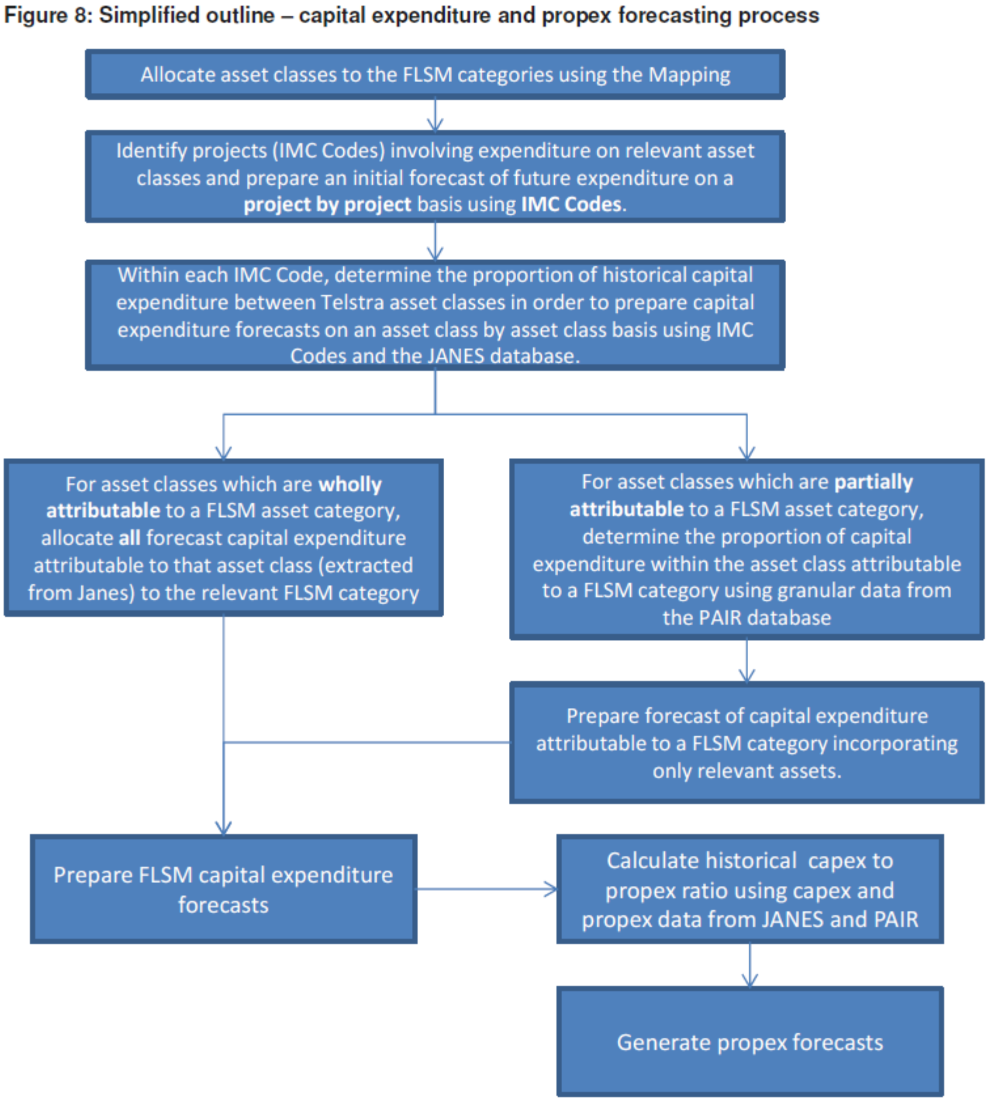
In its November 2013 Explanatory Statement, Telstra set out in some detail the process by which it developed [redacted].[137]

Telstra's Investment Management Group plans Telstra capital expenditure at a project level. In doing so, it measures and selects projects it intends to undertake, not what specific assets it intends to invest in. This is a matter of ensuring Telstra makes wise and efficient investments. By treating capital expenditure as the cost of desirable projects, it ensures money is only spent where it will make a more logical and systematic improvement to assets.

Capital project expenditure is grouped together under program-specific codes (**IMC Codes**). The capital expenditure for each of these IMC Codes can be traced through to asset classes. Where those asset classes are not wholly related to the provision of fixed line services, the classes are broken down further to assess which assets are properly attributable to the provision of fixed line services. A simplified outline of this process, taken from Telstra's November 2013 Explanatory Statement, is set out below:

[134] Telstra, *Public inquiry into final access determinations for fixed line services – primary prices: Response to Discussion Paper*, October 2014, p 70.
[135] Telstra, *Final Access Determinations Inquiry – confidential response to information request under the BBM RKR – Comparison Statement*, November 2013, pp 17-18, 20.
[136] Telstra, *Public inquiry into final access determinations for fixed line services – primary prices: Response to Discussion Paper*, October 2014, pp 68-69.
[137] Telstra, *Final Access Determinations (FADs) Inquiry – confidential response to information request under the BBM RKR – Explanatory Statement*, November 2013, pp 26-28.

Figure 24: Outline of forecasting process



4.2.2 An interpretation of IMC project names is not a reliable indicator of whether capex support FLSM services

The ACCC expressed concern that expenditure that was unrelated to the provision of fixed line services appears to have been included in the FLSM. In particular, it questioned whether all of the top ten IMC-level projects included in Telstra's capital expenditure forecasts were incremental to fixed line services.[138] WIK also raises a number of questions about the relevance of IMC expenditure, based on their project names.[139]

The name of an IMC code is not a reliable way to determine the appropriateness of expenditure with respect to the FLSM Asset Classes and Telstra notes that a number of the IMC project names do not necessarily reflect accurately or completely the nature of the work within them.

A good example is Telstra Retail and Telstra Mobile – which are among the IMC projects queried by WIK and the ACCC.[140] When providing, for example, fibre services for retail customers or

[138] Draft Decision, p 77.
[139] Draft Decision, p 77; WIK Report, pp 87-92.
[140] Draft Decision , p 77.

providing Mobile Base stations, Telstra's network designers in undertaking detailed design work considers other demand and AROS requirements in the area to optimise the investment and reduce truck rolls. Main ducts, main cables, optical fibre and other transmission equipment will be installed with sufficient capacity to meet all requirements. Therefore expenditure often occurs on the FLSM Asset Classes and these asset are improved, replaced and upgraded because of work done under this code.

In fact, far from including irrelevant capital projects, Telstra has adopted a conservative approach to the inclusion of IMC-level project expenditure in its capital expenditure forecasts that is more likely to exclude IMC-level expenditure that strictly relates to FLSM assets and should have been included.

Telstra's approach is summarised below:

- Step 1: The total capex for all IMCs is the initial data set from which allocations are made to FLSM assets in accordance with the steps below.

- Step 2: The data from step 1 is refined to remove any IMCs that do not involve any expenditure on FLSM assets.

- Step 3: The data from step 2 is then further refined *within* each IMC code to include only the capex that is determined to be related FLSM assets, according to the asset classes that make up that IMC project. That is, the capital expenditure within the IMC projects is sorted according to the asset classes against which expenditure is incurred to exclude capital expenditure on non-FLSM assets from the total of FLSM-relevant IMC codes.

- Step 4: The data from step 3 is then further (and conservatively) refined to exclude a range of projects, including because they involve projects due to end during FY14 or FY15, or relatively small projects where these have a highly volatile capital expenditure profile (so that Telstra is concerned that they may bias the forecast trend).

Further, removing capital expenditure on a shared and common FLSM Asset Class on the basis of the driver of expenditure is not appropriate in the context of a fully allocated cost model where costs are aggregated to and allocated from those asset classes. In order to consistently and properly apply a fully-allocated cost framework, it is important that all costs associated with FSLM **asset classes** are included in the model, and that the allocation of these costs to services occurs later, through the allocation framework.

To the extent that a project involves expenditure on an FLSM asset class, it needs to be included – without any prior assessment of what services that expenditure is intended to support. The question of what proportion of those costs should then be allocated to FLSM or non-FLSM services can be determined by applying appropriate allocation drivers (such as usage), through the allocation model.

4.2.3 Determining forecast information at an FLSM Asset Class level

It should be noted that although IMC Codes form and integral part of Telstra's capital expenditure planning, this data cannot be directly used to produce forecasts for the purposes of the FLSM. In part, this is because the capital expenditure with respect to an individual IMC Code will rarely be 100% attributable to a single FLSM Asset Class and, in many cases, expenditure for a given IMC Code will be spread across assets within the FLSM Asset Classes and outside of the FLSM Asset Classes. This requires Telstra to adopt the process depicted above to map only relevant spending to the set of FLSM Asset Classes.

Further, [redacted].[141] This, again, is to ensure that Telstra invests only in those capital projects that appropriately respond to business conditions, such as demand for services. This approach is consistent with Telstra's strong incentive to incur only efficient expenditure. However, the FLSM requires Telstra to produce up to five years of capital expenditure forecasts at the asset class level. This requirement necessitated that Telstra adopt an alternative approach to produce reasonable, prudent capital expenditure forecasts for the forecast period.

To calculate capital expenditure forecasts for the period FY2015 to FY2019, Telstra aggregated the IMC-level data to the FLSM Asset Classes and by the Funding program that each IMC sat within. In order to make these adjustments, the IMC codes (reflecting grouped capital projects) are themselves grouped under the drivers of expenditure (demand, AROS, NBN-remediation and discretionary).

This was done to ensure that the four main cost drivers of capital expenditure (demand, asset replacement / operational support (AROS), NBN-remediation and discretionary) were reflected in its forecasts, and to ensure that historical trends with respect to remediation programs (AROS-based expenditure) could be distinguished from trends observed for Demand-based expenditure programs. It also enabled NBN-related remediation expenditure to be identified and excluded from other past period capital expenditure and forecast on a separate basis.

Within each funding-type, capital expenditure is then forecast for each asset class using a moving linear trend. However, the trend created from this historic data is specifically modified to cap any potential increase in expenditure based on the observed trend and to explicitly take into account and reduce forecast capital expenditure for assets impacted by the NBN rollout. These adjustments, and other assumptions made by Telstra in the forecast model are conservative, in the sense they are likely to lead to an understatement of actual capital expenditure over the forecast period.

4.3 Telstra's capital expenditure forecasts are conservative by design

As well as being reasonable and as granular as is practicable (given the scale and complexity of its network), Telstra's capex forecasting methodology is conservative by design and, based on an empirical analysis, the results of the forecast model understate the approved budgeted capital expenditure with respect to the FLSM Asset Classes for FY2016.

The forecasting approach adopted is conservative by design:

- Historic capital expenditure (used as the basis for forecasting) only reflects the sub-set of relevant capital projects that are expected to continue over the forecast period. Historic expenditure, where it was incurred by a program that is not expected to continue has not been included. Further, Telstra has not projected the emergence of new capital programs over the forecast period.

- Forecast trends are 'capped' where there is historic evidence of increased expenditure with respect to an FLSM Asset Class over time, whereas trends evidencing decline expenditure are forecast to continue unabated.

- The impact of the NBN is explicitly taken into account in determining capital expenditure forecasts. For FLSM Asset Classes where capital expenditure is considered likely to be impacted by the NBN, forecast expenditure is reduced in proportion to the NBN rollout. This approach assumes a "linear relationship" between the NBN rollout and Telstra's ability to reduce relevant capital costs – based on the nature of the NBN rollout, and the nature of Telstra's fixed line network this relationship is likely to overstate the impact of the NBN on forecast capital expenditure- particularly in the first half of the forecast period.

[141] Telstra, *Final Access Determinations (FADs) Inquiry – confidential response to information request under the BBM RKR – Explanatory Statement*, November 2013, p 4.

4.3.1 Only capital expenditure associated with ongoing IMC programs is included in historic data that forms the basis of the forecasts

As set out above, Telstra was selective in only forecasting capital costs on the basis of ongoing and relevant IMC Codes. This filtering involved two steps:

- Where prior years capital expenditure is used as the basis for forecasting future requirements, expenditure incurred under short-term and one-off programs has not been included. This means no allowance is provided in the forecasts for similar short-term or otherwise new programs of work over the forecast period.
- In other cases, expenditure on the relevant Asset Classes was excluded where expenditure for the IMC was only tangential to the fixed line network and the FLSM Asset Classes.

The impact of this decision is that the historic data used as the basis of forecasting capital expenditure over the period FY2015 to FY2019 is much lower than actually occurred.

The following chart shows the FY2012 to FY2014 capital expenditure on the FLSM Asset Classes for all IMCs in comparison to only the subset of IMCs that are used in the trend analysis:

Figure 25: [redacted]

[redacted]

The approach used by Telstra sets aside over [redacted] in past capital expenditure over the period FY2012 to FY2014 that is otherwise attributable to the FLSM Asset Classes on the basis that the programs under which this expenditure is incurred are not expected to continue past FY2014.

This conservative approach has an impact on the forecasts generated for the relevant FLSM Asset Classes. For example, the following chart sets out the impact of only including ongoing capital programs in the past period data used for the forecasts with respect to the FLSM Asset Class C001 Switching Equipment Local:

Figure 26: [redacted]

[redacted]

As set out above, if Telstra had relied on past period capital expenditure information related to the Local Switching Asset Class from all IMCs (and not only IMCs expected to continue into the forecast period) in developing its forecasts, then capital expenditure over the forecast period would be [redacted] higher over the period FY2015 and FY2019 and [redacted] higher than otherwise in FY2019.

Across all FLSM Asset Classes, if this expenditure had been included for the purposes of forecasting, capital expenditure for FY2015 to FY2019 would be at least [redacted] higher in nominal terms.

The choice to exclude this expenditure is clearly conservative and leads to an outcome that, if anything, is likely to <u>understate</u> prudent capex requirements. It is important to emphasise that Telstra has not excluded this expenditure on the basis it is not attributable to the FLSM Asset Classes, but simply because the programs under which this expenditure was incurred were not expected to continue beyond FY2015.

4.3.2 Where the historic trend implied an increase, adjustments were made to limit this by placing a [redacted] 'cap' on any annual increase in forecast expenditure in an asset class

Where the historic data trend implied an increase in the forecast capex over the period FY16 to FY19, the forecasts were adjusted to limit the increase. Telstra acknowledges that there will always be a certain level of lumpiness in capital expenditure, and so has capped any individual forecast increase based on the rolling average historical trend to limit any risk that such lumpiness results may forecasts.

In addition to mitigating against the risk of an outlier result in historic information having and outsized impact on forecast trends, the imposition of the [redacted] cap to year-on-year growth in capital expenditure also serves as a proxy for Telstra's overall prudency with respect to capital planning and expenditure.

This [redacted] year on year ceiling on increases in forecast expenditure has had a significant effect on some asset classes. For example, past period capital expenditure on the Core network Asset Classes CO04 Interexchange cables, CO05 Transmission Equipment and CO06 Core Radio

Bearer Equipment all exhibited a trend increase over the period FY2012 to FY2015. Similar trends are apparent for the CAN/Core Asset Classes for Other Communications Plants and Equipment, Network Buildings and Support and Indirect Capital Assets.

The following charts compare (for Transmission Equipment and Interexchange Cables) capital expenditure as forecast by Telstra in the FLSM to a scenario in which the [redacted] year on year increase limit is not imposed:

Figure 27: [redacted]

[redacted]

From the above figure, aggregate capital expenditure on transmission equipment would be over [redacted] greater in nominal terms over the period FY2015 to FY2019.

The fact that Telstra is holding back the observed growth in trend capital expenditure for Transmission Equipment demonstrates the prudency and conservatism of Telstra's forecasting approach. It also stands in contrasts to concerns raised by the ACCC regarding the prudency of the transmission equipment capital expenditure forecast:

- On page 74 of the Draft Decision, the ACCC states that '[redacted]'.
- Telstra maintains that its forecast transmission expenditure is efficient and prudent and are materially below the observed trend of increasing capital expenditure.
- There is no evidence or reason to suggest that capital expenditure with respect to transmission would decline over the forecast period, notwithstanding the forecast reduction in SIOs associated with NBN migration.

A similar trend is observed with respect to CO04 interexchange cables:

Figure 28: [redacted]

[redacted]

As with transmission equipment, if Telstra had not imposed a [redacted] cap on year on year capital expenditure growth, then expenditure on this asset class would be [redacted] higher over the forecast period.

In aggregate, if Telstra had not imposed this cap on annual increases in forecast trends, forecast capital expenditure across the FLSM Asset Classes would be [redacted] higher in nominal terms.

It also must be noted that Telstra has only applied this limit on year-on-year change in capital expenditure levels in one direction. Where trends in past period capital expenditure point to ongoing declines in capital expenditure, Telstra has not sought to mediate or restrict the trend decline. This is unlikely to be realistic in all cases and represents a conservative assumption.

4.3.3 NBN adjustments are aggressive and likely overstate the responsiveness of capital expenditure to the NBN rollout

There are three reasons why Telstra's approach to reflecting NBN impacts in its capex forecasts is highly conservative:

- first, it assumes that Telstra is able to reduce capital expenditure below historic levels relatively early in the NBN rollout (and before even a handful of Telstra ESAs reach a "steady state" with respect to NBN migration) – something that experience suggests is very unlikely to be achievable, given the difficulties with reducing capital expenditure in parts of the network still being used to support active equipment and services; and

- second, it assumes that Telstra's response to capital expenditure reductions with respect to NBN Co's rollout will reduce linearly throughout the rollout – in other words, Telstra will spend progressively less each year on capital expenditure with respect to key FLSM Asset Classes, despite the fact that the fixed line network will continue to operate well beyond the rollout period for the NBN;

- third, it assumes that the NBN rollout will occur as currently forecast by NBN Co – something which has not occurred to date.

As noted by Telstra in its October 2014 submission in response to the ACCC's discussion paper, forecast capital expenditure was significantly reduced by adjusting for historic trend factors and the impact of the NBN.[142]

> *The assumption underlying these forecast reductions in capital expenditure is that Telstra will be able to make further reductions in its capital expenditure below historic trend levels, and that the amount of these further reductions will be directly proportional to the rate of NBN rollout. This is likely to be a highly conservative assumption, in the sense that it will almost certainly overstate the extent to which Telstra can effectively reduce its capital expenditure (and the timing in which these reductions can be made) as customers migrate to the NBN.*[143]

As set out in chapter 3 and in the attached statement of [redacted], Telstra's experience is that any material reduction in capital and operating expenditure associated with the NBN rollout will rely, at the least, upon the rollout achieving a "steady state" across an ESA. [redacted].[144]

The challenges associated with reducing expenditure prior to completion of the NBN rollout is addressed in significant detail in the statement of [redacted], at Appendix 15. The issue is also addressed – in relation to similar difficulties with reducing operating expenditure in light of the NBN Rollout – at chapter 2.

The difficulties identified by [redacted] as constraining Telstra's ability to plan and forecast reductions in opex to align with the early stages of the NBN rollout apply also to capex, for example:

- The nature of the NBN rollout in unprecedented. NBN Co is not designing its rollout to facilitate an efficient reduction in Telstra's capex program.
- Telstra has extremely limited information upon which it can rely – in relation to the locations or timing of the NBN rollout – which would be critical to planning any reduced capex expenditure.
- The impact of the rollout is unpredictable, will change, and will occur unevenly across a patchwork of ESAs - with most ESAs only being fully serviced by a number of rollout regions, all of which would need to have migration completed.
- The 'end to end' timeframe for NBN migration in each rollout region is long, with a minimum of 2 years (from RFS date to the final 'sunset' date for in train order premises). This does not reflect the longer periods for 'service continuity' regions or the continued obligations which Telstra has to supply services after the disconnection date (below).
- Even after the disconnection date for a rollout region, Telstra has continuing regulatory and other obligations to supply a range of services, including:
    - 'special services' as well as ULLS used to support equivalent TW services – as well as continuing to supply existing services, this includes an obligation to 'rebuild' copper paths in its systems to supply new services of this kind;
    - services supplied to non-Premises (e.g. traffic lights, ATMs etc);

[142] Telstra, *Public inquiry into final access determinations for fixed line services – primary prices: Response to Discussion Paper*, October 2014, pp 69, 70.
[143] I Telstra, *Public inquiry into final access determinations for fixed line services – primary prices: Response to Discussion Paper*, October 2014, p 73.
[144] Appendix 15: Statement of [redacted], April 2015,p 14.

- any legacy PSTN services supplied to common areas within apartment buildings and other "multi-dwelling units"; and

- obligations to continue to supply and maintain TEBA and interconnection facilities for wholesale customers, pending removal of equipment by wholesale customers (which, based on experience to date, is not expected until very late in the NBN rollout).

Moreover, to the extent that Telstra has made NBN adjustments to capital expenditure forecasts, this has been based on the most recent corporate and rollout planning provided by NBN Co. It does not make any allowance or contingency for the NBN rollout occurring more slowly than currently anticipated. This is reflected in a comparison of FLSM capex forecasts for FY2016 compared to Telstra's recently established capital expenditure budgets for FY2016, set out below.

4.4 A comparison of updated part-year actuals and budgeted capex demonstrates the robustness and inherent conservatism in Telstra's FLSM forecasting approach

Since Telstra provided its updated FLSM capital expenditure forecasts to the ACCC in October 2014, it has undertaken its internal capital planning processes for the FY2016 financial year. The outputs from that process reflect the most up-to-date view of Telstra's current expected internal capex requirements for the first full year of the FLSM forecast period. Specifically, Telstra is able to compare capital expenditure for the Demand/Baseline and AROS funding types from the Forecast Model to the new budget figures for FY2016.

In addition, given the passage of time, the FY2015 budget figures that are used within the Forecast Model can be compared to 6 months of actual and 6 months of remaining budget figures for FY2015.

The following chart sets out the comparison for demand/baseline and AROS funded capital expenditure between the FLSM forecasts for FY2015 and FY2016 and these updated actual and budget figures:

Figure 29: [redacted]

[redacted]

The above chart sets out two key points:

- First, the FY2015 budget figures used by Telstra in the Forecast Model are a close approximation of the updated (six months actual plus six month budget) figures for FY2015. This supports the use of capital budget figures (where available) are a very reasonable estimate of future year capital expenditure.

- Second, the FLSM capital expenditure forecast for FY2016 (for demand & baseline and AROS) is significantly lower (approximately [redacted]) than Telstra's recently established capital expenditure budget.

Taken together, these figures suggest that as the FY2016 capital budget is likely to be a reasonable and close estimate of actual FY2016 expenditure and based on the budget figures, Telstra's FLSM forecasts materially underestimate capital expenditure.

The FY2016 budget figure is not only higher than the Telstra's FLSM forecasts for FY2016, but is also [redacted] higher than actual/budget expenditure in FY2015. The drivers of this actual increase in capital expenditure include:

- the NBN rollout occurring materially slower than anticipated; and

- higher levels of capital expenditure in response to higher demand for new residential estates, then originally forecast.

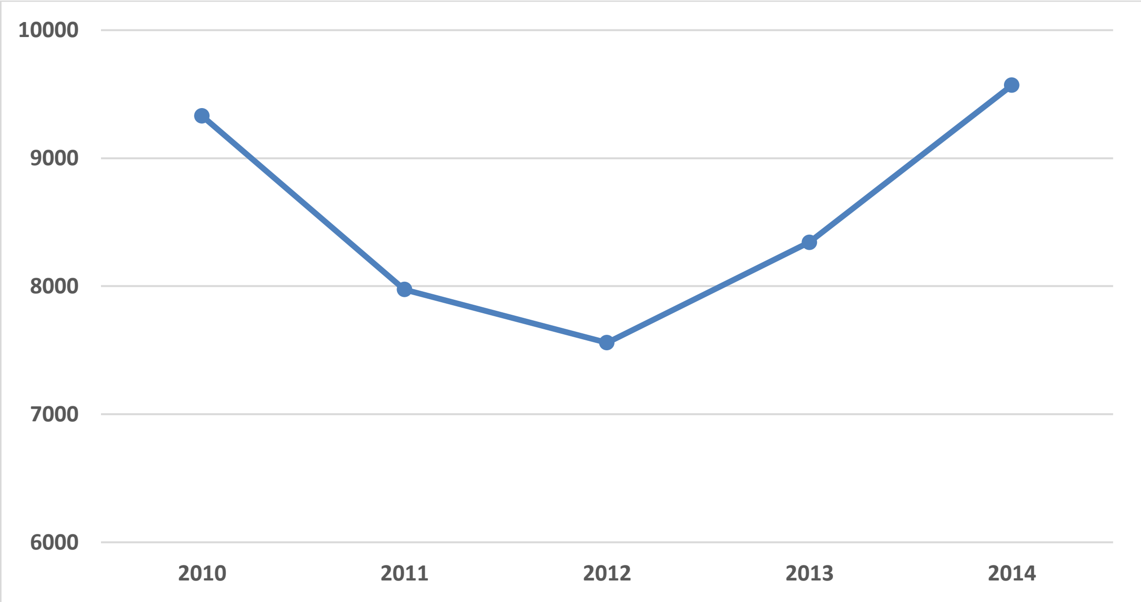
Delays in the rollout of the NBN have meant that Telstra is required to invest more in the fixed line network than was previously anticipated – or than has been forecast.

- Telstra has for a number of years heavily constrained any capital expenditure on network assets in anticipation of the NBN rollout occurring. Given the delays that have occurred in the rollout, however, there is a 'tipping point' approaching at which Telstra must increase its capex in order to maintain the fixed line network.

- The delays in the NBN rollout mean that Telstra faces a continuing need to extend and expand the reach and capacity of its transmission network over the near future, to service new and developing areas and estates, most of which will remain outside the NBN footprint.

- In addition, the delays in the NBN rollout have been coupled with recent growth in demand for new residential estates has been higher than originally anticipated. This is illustrated by the ABS data in the graph below which demonstrates an increase in average monthly dwelling approval (presented in yearly intervals) in total throughout Australia.

Figure 30: Total average monthly dwelling approvals across Australia



The capex drivers set out above are particularly relevant to FLSM CAN Asset Classes. Capital expenditure on both copper cables and ducts and pipes is having to increase to meet these challenges:

Table 23: [redacted]

[redacted]

Table 24: [redacted]

[redacted]

4.4.1 Adjustments to NBN-related duct remediation capital expenditure

Telstra has forecast capital expenditure related to remediation of ducts and other network infrastructure related to the NBN using a different approach than for other capital expenditure funding programs. A per premises figure is used to facilitate the modelling task. This figure is calculated in the following manner (as set out in Telstra's letter to the ACCC on March 5 2015):

- Telstra has forecast the total capital costs required for duct remediation over the full rollout of the NBN (including capital expenditure to date).

- This estimate of the total capital costs requirement is based on the revised Multi-Technology Mix (MTM) NBN view, which assumes FTTP-based rollout to [redacted] premises. This is consistent with the terms of the Definitive Agreements. This expenditure is expected to be incurred between FY2013 and FY2021.

The use of a per premises figure, rather than a per financial year total, provides for greater flexibility in the approach to modelling forward-looking capital expenditure, ensures that within the Forecast Model that future capital expenditure on duct and related remediation is aligned with the NBN rollout, and allows different NBN rollout scenarios to be tested, with the amount and timing of capital expenditure on duct and related capital expenditure to remain aligned with different rollout scenarios. Telstra has revised downwards the per premises figure used for the purpose of modelling NBN related capex in the Fixed Services Forecast Model v1.2 (Appendix 20).

Previously Telstra put forward that capital expenditure on NBN-related network remediation would cost the equivalent on [redacted] per brownfield premises passed by NBN Co during the network rollout.

However, Telstra has further reviewed its interpretation of the requirements and responsibilities for both NBN Co and Telstra arising from the revised Definitive Agreements and now believes that it was in error in estimating the relevant capital expenditure amount at [redacted] per premises.

Telstra now estimates that relevant capital expenditure on NBN-related network remediation will be [redacted] per premises. The reduction reflects the fact that certain costs forecast to be incurred by Telstra had been incorrectly interpreted as capital expenditure.

As a result of this update, NBN-related capital expenditure is now forecast to be [redacted] between FY2015-2019, while NBN-related propex is forecast to be [redacted] between FY2016 and FY2019.

5. Return on capital

Key points:

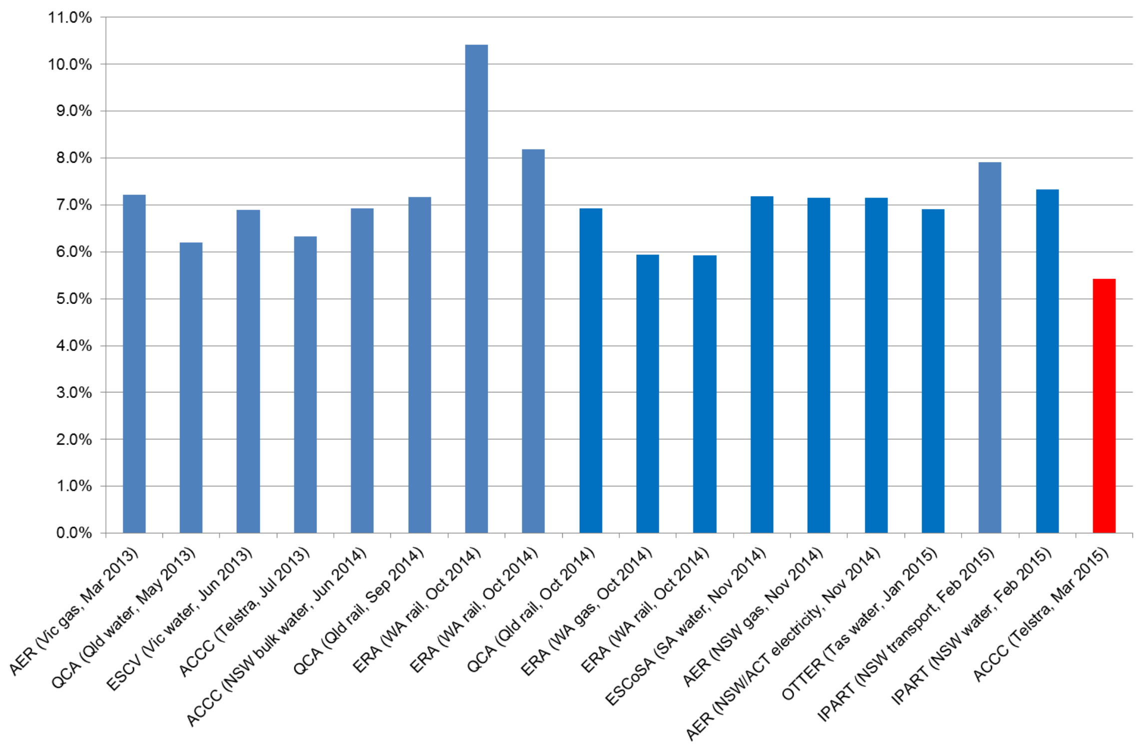
- The WACC determined in the Draft Decision is lower than in any recent decision of the ACCC or any other Australian regulator.
- In part, this outcome is the result of the ACCC applying its traditional method at a time when the risk-free rate is at an historic low, without considering whether the outcome of this traditional method is reasonable in such circumstances.
- More importantly, it is apparent from the Draft Decision that the ACCC has not considered whether the overall WACC outcome is reasonable, nor has it considered whether its traditional estimation methods remain appropriate in current market conditions. This is most obvious in relation to the market risk premium (**MRP**), where the ACCC continues to rely on historic measures and refuses to take into account current evidence of the forward-looking MRP.
- In relation to the debt risk premium (**DRP**), the ACCC has relied on a new and untested data source without considering whether the estimate produced by this source is reasonable, resulting in a DRP that is lower than in any recent decision of the ACCC and significantly below Telstra's efficient cost of debt financing – which has been recently tested and identified by Telstra placing a long term bond in international markets.
- In these circumstances, the ACCC should review its traditional approach and consider how it may need to be amended in order to ensure a more reasonable outcome.

5.1 Reasonableness of the overall WACC outcome

The WACC applied in the Draft Decision (5.43%) is significantly lower than in any recent decision of the ACCC in the telecommunications sector. It is more than 3 percentage points lower than in the 2011 FADs (8.54%).

It is also the lowest WACC set by any Australian regulator in any decision that Telstra is aware of over the past two years (Figure 31). WACC values determined by other regulators over this period have ranged from 5.93% to 10.42%, with an average of 7.16% (refer to Appendix 6 for details of this comparison). The majority of decisions over this period have delivered an overall WACC in the range of 6.5% - 7.5%.

Figure 31: Survey of recent WACC decisions (as at March 2015)[145]



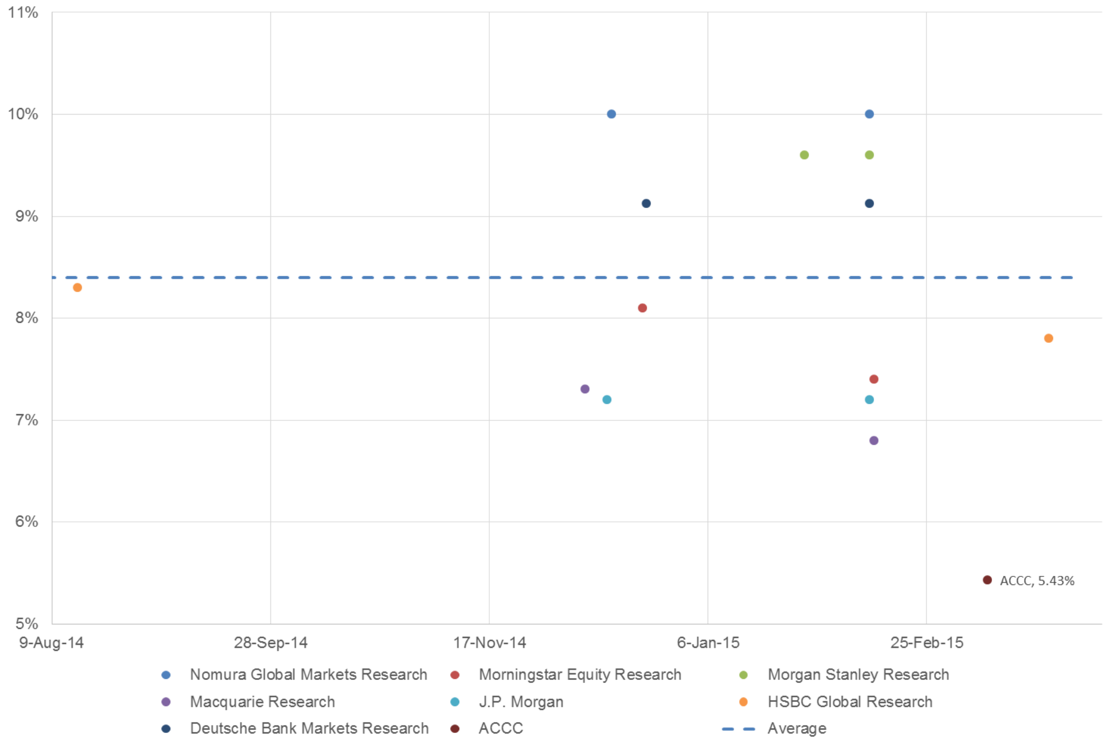
The WACC adopted in the Draft Decision is also significantly lower than any recent estimate of Telstra's cost of capital by independent market practitioners, such as brokers or analysts. Table 25 and Figure 32 below shows that the ACCC's WACC estimate of 5.43% is out of step with market practitioners views of Telstra's cost of capital, as reflected in recent broker reports. The ACCC's WACC is more than 1% lower than the lowest estimate from recent broker reports and nearly 3% lower than the median estimate from these reports (8.2%).

Table 25: Recent market practitioner estimates of Telstra cost of capital

Research House	Date of report	WACC
HSBC Global Research	25 March 2015	**7.8%**
Morningstar Equity Research	13 February 2015	**7.4%**
Macquarie Research	13 February 2015	**6.8%**
Morgan Stanley Research	12 February 2015	**9.6%**
Deutsche Bank Markets Research	12 February 2015	**9.12%**
J.P. Morgan	12 February 2015	**7.2%**
Nomura Global Markets Research	12 February 2015	**10.0%**
Morgan Stanley Research	28 January 2015	**9.6%**
Deutsche Bank Markets Research	23 December 2014	**9.12%**
Morningstar Equity Research	22 December 2014	**8.1%**
Nomura Global Markets Research	15 December 2014	**10.0%**
J.P. Morgan	14 December 2014	**7.2%**
Macquarie Research	9 December 2014	**7.3%**
HSBC Global Research	15 August 2014	**8.3%**

[145] Telstra survey of recent decisions by the ACCC, AER, QCA, IPART, ESCV, OTER, ESCoSA and the ERA. Refer to Appendix 6 for details.

Figure 32: Comparison of ACCC WACC with broker estimates of Telstra cost of capital



This outcome is due to the combination of:

- a historically low risk-free rate, indicating abnormal or "non-average" market conditions;
- a refusal of the ACCC to countenance any departure from its traditional approach to estimating other WACC parameters, despite the obvious signs that these are not normal or average market conditions;
- errors by the ACCC in the interpretation of key data underpinning the calculation of certain parameters; and
- a failure of the ACCC to consider whether the result of applying their traditional approach is reasonable in the circumstances.

Telstra accepts that changes in the risk-free rate are beyond the control of either the ACCC or Telstra. However in light of the dramatic decline in the risk-free rate in recent months, it is incumbent upon the ACCC to consider whether the overall WACC outcome delivered by its traditional method is reasonable. It is also critical that the ACCC consider whether and to what extent other WACC parameters may be impacted by the same changes in market conditions that are driving this decline in the risk-free rate.

It is apparent from the Draft Decision that the ACCC has not considered whether the overall WACC outcome is reasonable. Unlike other regulators such as the AER[146], the ACCC has not applied any form of "reasonableness check" to its estimates of the return on equity, return on debt or the overall rate of return. Instead, the ACCC has simply "turned the handle" on its traditional WACC method, trusting that this will deliver a reasonable result.

[146] For example, in relation to the return on equity, the AER applies a number of 'cross-checks', including using the 'Wright approach' to provide an alternative estimate, comparing estimated the return on equity to returns on debt, and reviewing return on equity estimates from independent valuation reports. Refer to AER, *Draft decision: Ausgrid distribution determination 2015–16 to 2018–19 – Attachment 3: Rate of return*, November 2014, [3-87]-[3-97].

Had the ACCC conducted a "reasonableness check" by reference to decisions of other regulators or market evidence, it would have been apparent that its WACC estimate is out of step with other regulatory decisions and market estimates of Telstra's cost of capital.

In relation to individual parameters, the ACCC has not considered whether its traditional estimation methods remain appropriate in current market conditions. This is most obvious in relation to the MRP, where the ACCC has to date continued to rely on historic measures and refused to take into account current evidence of the forward-looking MRP from dividend growth modelling. In relation to the DRP, the ACCC has relied on a new and untested data source without considering whether the estimate produced by this source is reasonable, resulting in a DRP that is lower than in any recent decision of the ACCC and significantly below Telstra's efficient cost of debt financing.

The ACCC's approach leads to an outcome where the rate of return moves essentially in lock-step with the risk-free rate. The inflexibility in the ACCC's approach means that the WACC will only change if the risk-free rate changes, and in this case essentially in tandem with the movement in the risk-free rate. In the present case, the ACCC's estimate of the WACC has actually fallen by ***more*** than the decline in the risk-free rate, because the ACCC has relied on a new and untested data source to estimate the DRP, resulting in a DRP estimate that is lower than in any recent decision.

Telstra considers that such an outcome is illogical and unreasonable. There is simply no evidence to support an assumption that as the risk-free rate declines (or increases) the required rate of return on risky assets will decline (or increase) by the same or greater amount. On the contrary, the available evidence demonstrates that when the risk-free rate falls the risk premia on risky assets tend to increase meaning that there is a less than unitary correlation between the risk-free rate and the required rate of return.[147]

The intuition for this is simple. A decline in rates of return on risk-free assets is often associated with a 'flight to quality' – that is, investors seeking less risky or risk-free investments, thus pushing down yields on these investments. If this is the case, then the required risk premium on risky investments may be expected to rise above historic average levels, as demand for these investments declines. There have been a number of recent examples of this, including during the GFC (2008/2009) and the European debt crisis (2012).

This phenomenon was explained to the ACCC in a letter from the Reserve Bank of Australia during the European debt crisis. The RBA explained:[148]

> *In recent years, changes in investors' risk preferences and/or their perceptions of risk have seen a significant increase in demand for risk-free assets, such as CGS, globally. Within the Australian market, one notable source of demand for risk-free assets has come from non-resident investors, whose holdings of CGS now comprise more than three-quarters of outstanding supply. As a result, there has been a widening in the spreads between CGS yields and those on other Australia dollar-denominated debt securities. This widening indeed confirms the market's assessment of the risk-free nature of CGS* ***and reflects a general increase in risk premia on other assets****.*
>
> [Emphasis added]

Given this, and in the context of historically low returns on risk-free assets, it would be unreasonable for the ACCC to simply maintain a fixed estimate of the MRP based on historic data (6%), and set the DRP at a ***lower*** level than in any recent decision.

Other regulatory bodies have acknowledged that traditional methods may not be appropriate in all market conditions, particularly where yields on risk-free assets are unusually low. For example, IPART states, in its most recent WACC methodology review:[149]

---

[147] For example, CEG, *Internal consistency of risk free rate and MRP in the CAPM: Prepared for Envestra, SP AusNet, Multinet and APA*, March 2012, section 4.
[148] Reserve Bank of Australia, *Letter to the ACCC: The Commonwealth Government Securities Market*, July 2012.

> *…in recent years we have become concerned that the methodology may not produce the 'best' decision in all market conditions. In particular, we considered that it may underestimate the efficient benchmark cost of capital due to changes in financial market conditions since the global financial crisis (GFC). This was mainly due to historically low yields on Commonwealth Government Securities (CGS), which resulted in much lower costs of debt and equity than their historical averages.*

IPART's solution is to consider a range of WACC values based on long-term and short-term estimates of the return on debt and return on equity. Long-term estimates are based on internally consistent measures of the long-term risk-free rate and risk premia, while short-term measures are similarly determined on an internally consistent basis. Importantly, IPART does not simply apply the traditional approach of combining short-term measures of the risk-free rate with long-term measures of other parameters such as the MRP.

The AER approach is to only consider "short-term" or "current" measures of the return on equity (i.e. reflecting prevailing market conditions), but to ensure that all parameters are genuinely current and forward-looking. In relation to the MRP, the AER takes into account forward-looking measures, such as the results of its own dividend growth model. As a result, the AER has increased its estimate of the MRP in recent times, from 6% to 6.5%.

Similar issues have been considered and addressed by overseas regulators. For example the US Federal Energy Regulatory Commission (**FERC**) was asked to consider an adjustment to the traditional CAPM-based methodology for determining the return on equity for the New York Independent System Operator. In that case the FERC acknowledged that due to abnormal market conditions, there was a need to depart from the traditional approach. The FERC explained:[150]

> *We find that NYISO's proposed ROE value of 12.5 percent is adequately supported by substantial evidence. NYISO argues that unique* ***current conditions in financial markets created a downward bias in the CAPM results, necessitating a calibration adjustment of 1.21 percent to the calculated return on equity of 11.29 percent****. Specifically, NYISO argues that the result yielded by the CAPM analysis "appeared potentially too low relative to regulated rates of return and as the CAPM is subject to bias at times during the interest rate cycle" because of the potential impact on the historic relationship between the market returns for government debt and common equities. Given the recent trends of near-historic low yields for long-term U.S. Treasury bond rates, the CAPM's input for the "risk-free" rate, we find that it is a reasonable assumption that the current equity risk premium (which is added to the risk-free rate to calculate the cost of equity data point that determines the slope of the CAPM curve) exceeds the 86-year historical average used as the consultants' CAPM input.* ***The current low treasury bond rate environment creates a need to adjust the CAPM results, consistent with the financial theory that the equity risk premium exceeds the long-term average when long-term U.S. Treasury bond rates are lower than average, and vice-versa.*** [Emphasis added]

Telstra considers that in this case there is evidence that the ACCC's traditional method is delivering unreasonable results. As noted above, the WACC determined in the Draft Decision is lower than in any recent decision of the ACCC or any other Australian regulator, and well below market practitioners' views of Telstra's cost of capital.

In these circumstances, the ACCC must review its traditional approach and consider how it may need to be amended in order to ensure a more reasonable outcome. This must include reviewing the traditional approach to individual parameters, as discussed below.

---

[149] IPART, *Review of WACC Methodology*, December 2013, p 5.
[150] Federal Energy Regulatory Commission, *Order accepting tariff filing subject to condition and denying waiver*, Docket No. ER14-500-000, January 2014, p 36.

5.2 Parameter estimates

5.2.1 Risk-free rate

As noted above, the risk-free rate has fallen to historic lows. At the time of the Draft Decision, the risk-free rate was approximately 2.5%, compared to its average over the past 10 years of approximately 5%.[151]

Telstra accepts that changes in the risk-free rate are beyond the control of either the ACCC or Telstra, and we do not propose any change to the methodology for estimating the risk-free rate, *provided that other WACC parameters are estimated on a consistent basis and that the overall WACC outcome is reasonable*.[152]

This means that, like the risk-free rate, all other WACC parameters must reflect *current* market conditions. It would be unreasonable for the ACCC to only adjust the risk-free rate to reflect current market conditions, while leaving other parameters unchanged.

Telstra notes that the ACCC intends to update its parameter estimates (presumably including the risk-free rate estimate) for the final decision.[153] Telstra proposes that this update occur as close as practicable to the time of the final decision.

5.2.2 Debt risk premium

The ACCC's Draft Decision is to adopt a DRP estimate of 0.94%. This is based on the ACCC's estimate of current yields on ten-year Telstra bonds.

(a) Use of a Telstra-specific bond rate

The ACCC's Draft Decision is to adopt a Telstra-specific nominal bond rate to estimate the cost of debt. The ACCC considers that a Telstra-specific approach is likely to give a more accurate estimate of Telstra's efficient cost of debt.[154]

In our October submission, Telstra proposed using a benchmark corporate bond rate, consistent with the practice of other regulators, such as the AER. One reason for taking this position was that at that time, there was limited information upon which to base an estimate of the Telstra-specific 10-year bond rate (i.e. there were no Telstra bonds on issue with a remaining term close to ten years). On the other hand, measures of the benchmark corporate bond rate were (and continue to be) readily available.

Telstra acknowledges that in this particular context, a Telstra-specific measure may be appropriate, *provided that data is available and that the Telstra-specific measure that is chosen is reliable and robust*. As discussed below, Telstra considers there are problems with the particular measure of the Telstra-specific bond rate chosen by the ACCC. Some alternative measures of the Telstra-specific bond rate are discussed in the following section.

[151] IPART estimates that the average yield on 10-year CGS over the past 10 years to be 4.9% (IPART, *WACC Biannual Update*, February 2015, p 2).
[152] There are potentially alternatives to the conventional method for estimating the risk-free rate. One alternative is to simply take a long-term average risk-free rate, rather than a current estimate. Another alternative is the IPART approach, which combines long-term and short-term estimates of the return on debt and return on equity. Long-term estimates of the return on debt and return on equity are based on an historic average risk-free rate, which short-term estimates are based on a current risk-free rate. Refer to: IPART, *Review of WACC Methodology*, December 2013.
[153] Draft Decision, p 81.
[154] Draft Decision, p 97.

(b) Estimates of the Telstra-specific nominal bond rate

(i) Information from recent Telstra bond issue

Since the Draft Decision, new information has become available on the Telstra-specific cost of debt. On 30 March 2015, Telstra issued a 10-year bond in the US market. [redacted] After swaps to convert the US$1 billion issue into Australian dollars, the semi-annual coupon rate attached to this bond issue was 4.27%, implying a DRP of 1.94%. Further detail on this recent bond issue is provided in Box 1 below and the statement of [redacted] Appendix 16).

Box 1: Recent 10-year Telstra bond issue

Telstra has very recently issued a 10-year bond. This provides the best possible information on the current cost of debt for Telstra.

Key details of the recent issue are as follows:

- on 30 March 2015, Telstra borrowed US$1 billion in the US 144A market, at a semi-annual coupon of 3.125% for a 10 year term;
- Telstra simultaneously executed US$1 billion of Cross Currency Interest Rate Swaps and these converted that USD issue into A$1.3 billion at a semi-annual coupon of 4.27%;

[redacted]

- based on Australian Government bond rates at the time of issue, the implied debt risk premium associated with this recent debt raising is 1.94%.

Telstra considers that this recent bond issue provides the best possible information on the current cost to Telstra of raising ten-year debt. As noted by the ACCC in it Draft Decision, Telstra has no incentive to operate inefficiently with respect to debt issuance.[155] Therefore the DRP associated with this recent bond issue will be reflective of the efficient DRP for Telstra.

(ii) Market pricing information periodically collected by Telstra

Telstra Treasury periodically collects information on the return required by investors on Telstra-issued debt. This information is used to inform Telstra's debt management strategy.

The information collected by Telstra is based on surveys of lending institutions. Telstra Treasury seeks information from these institutions on the yield that would be required on Telstra-issued bonds of various maturities, given prevailing market conditions. Further detail on this survey process is provided in the statement of [redacted] (Appendix 16).

The results of the most recent survey, conducted in March 2015, are presented in Table 26 below. This shows that, based on market survey evidence, the required DRP on 10-year Telstra bonds is currently around [redacted].

[155] Draft Decision, p 97.

Table 26: Telstra market pricing survey, March 2015

Term	CGS Yield	Telstra Bond Yield	DRP
1 year	1.70	[redacted]	[redacted]
2 years	1.66	[redacted]	[redacted]
3 years	1.71	[redacted]	[redacted]
4 years	1.86	[redacted]	[redacted]
5 years	1.92	[redacted]	[redacted]
6 years	2.01	[redacted]	[redacted]
7 years	2.10	[redacted]	[redacted]
8 years	2.17	[redacted]	[redacted]
9 years	2.25	[redacted]	[redacted]
10 years	2.33	[redacted]	[redacted]

Source: Telstra Treasury

(iii) TBVAL data source

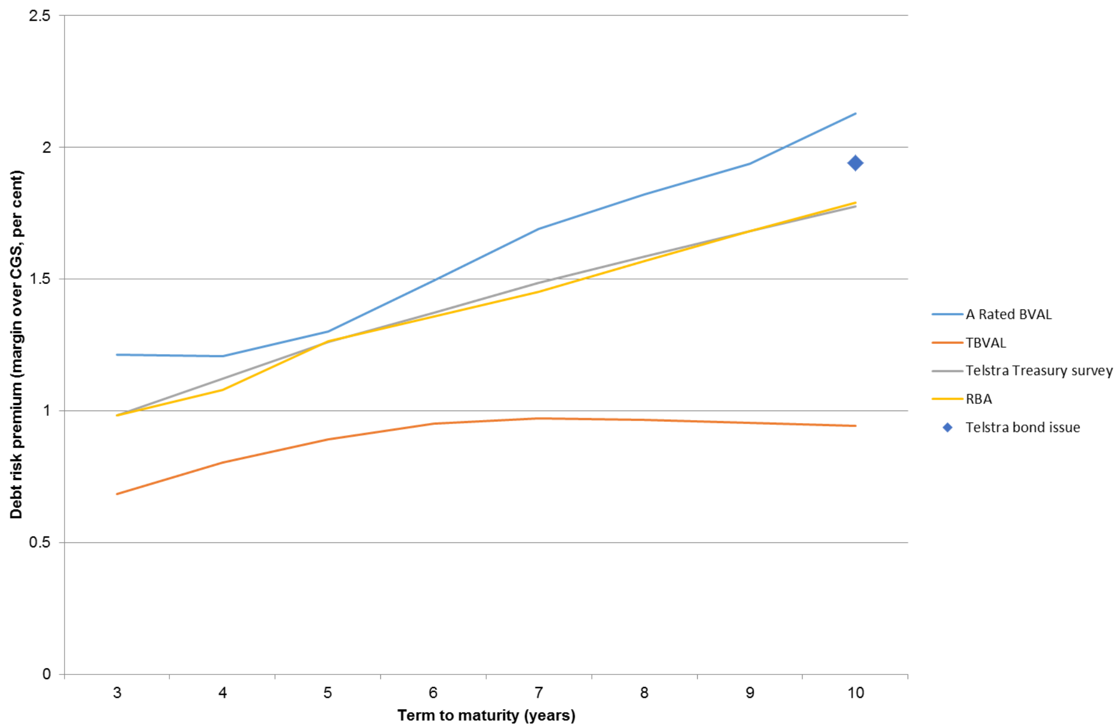
The ACCC proposes to use the Telstra BVAL (TBVAL) data source to estimate the Telstra-specific nominal bond rate. Over the 20-day averaging period used by the ACCC in the Draft Decision, the nominal bond rate from the TBVAL data source was 0.94 per cent.

Telstra has concerns with use of the TBVAL data source for estimating the DRP. These include:

- ***TBVAL estimates are significantly below any other indicator of the current cost of debt for Telstra and other A-rated businesses***. Telstra is concerned that the TBVAL estimates are not sufficiently reliable, and not appropriate for use in this context. The DRP estimate produced by the TBVAL curve for the Draft Decision averaging period is 0.94%. This is approximately 85 basis points below estimates of the DRP for A-rated bonds generally over the same period,[156] and 100 basis points below the DRP for the 10-year bond recently issued by Telstra (Figure 33). The TBVAL curve is a clear outlier in terms of currently available estimates of the yield on 10-year Telstra bonds, or yields on ten-year A-rated bonds more generally.

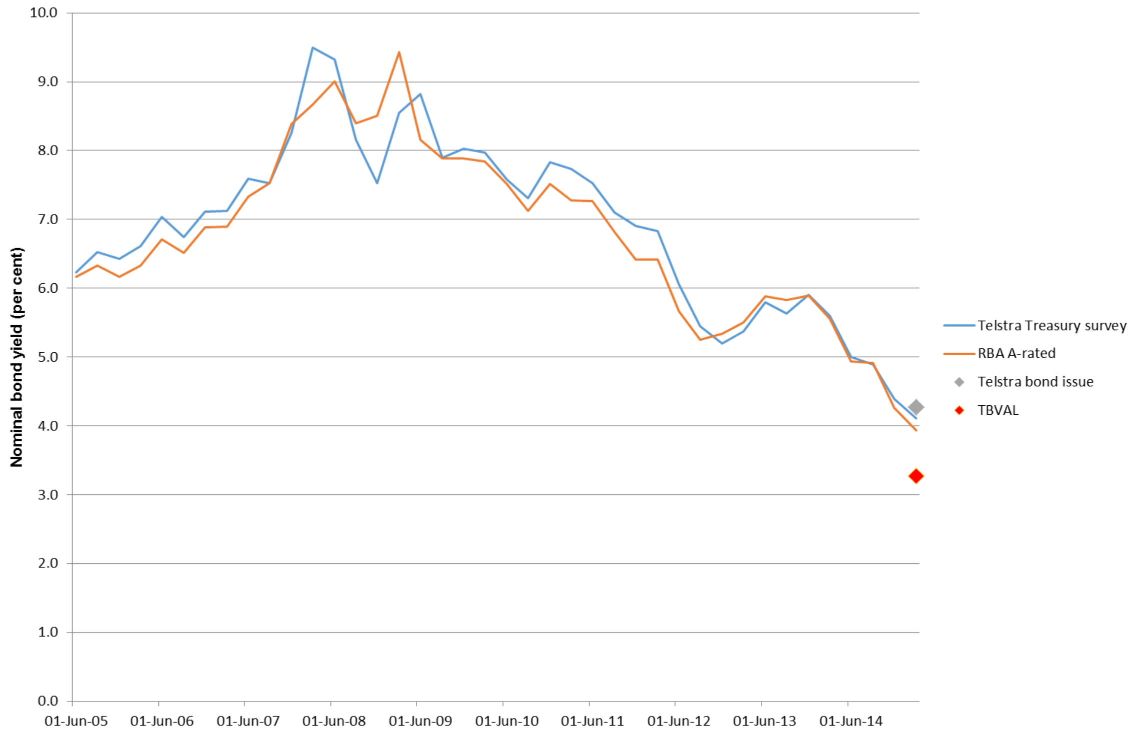
[156] Over March 2015, the RBA estimate of the DRP on 10-year A-rated corporate bonds was 1.79%.

Figure 33: TBVAL compared to Bloomberg and RBA A-rated curves, Telstra Treasury survey and margin on recent Telstra bond issue



- ***TBVAL estimates are implausible, in light of both current and historical measures of the cost of debt.*** The cost of debt estimated by the TBVAL curve is more than 300 basis points lower than the average cost of debt for Telstra over the past ten years (see Figure 34 below). Telstra considers it implausible that the prevailing DRP on a 10-year Telstra bond could be so low.

Figure 34: TBVAL compared to historic cost of debt measures and margin on recent Telstra bond issue



- ***Source data used by Bloomberg to construct the TBVAL curve***. Telstra considers that one possible reason for the implausible estimate from the TBVAL curve is that the source data used by Bloomberg does not reflect the yield on newly issued Telstra debt. Based on conversations with Bloomberg staff, Telstra understands that the TBVAL estimates are based on secondary market prices for Telstra bonds currently on issue in the Australian market. This secondary market information is unlikely to be representative of the return that would be required by investors on newly issued debt because there are relatively few Telstra bonds currently on issue in the Australian market (as noted above, Telstra often has to go overseas to obtain sufficient amounts of debt), and those bonds that are on issue are thinly traded.

- ***Not widely used or market accepted***. The TBVAL curve has only been available for public access since October 2014, and prior to that it was only used internally by Bloomberg. This data source is not used by Telstra internally, and we are not aware of it being used by other market practitioners.

If a Telstra-specific bond rate is to be used, two alternative sources of information are available: information from recent Telstra bond issues; and market pricing information periodically collected by Telstra. Each of these alternative information sources is discussed above.

(c) Inconsistency between the DRP estimate and assumed gearing levels

The ACCC's estimate of the DRP is based on an assumption that Telstra can maintain its current credit rating of A, and therefore access debt financing at relatively low cost (compared to other businesses with lower credit ratings).

However Telstra considers that this assumption is inconsistent with the gearing level assumed by the ACCC for Telstra (40% debt / 60% equity). The ACCC assumes a much higher level of gearing than actually adopted by Telstra in practice. If Telstra were to increase its gearing to the level assumed by the ACCC, it is likely that Telstra's credit rating would deteriorate, leading to a higher cost of debt.

Telstra's current debt/value ratio is in fact less than 20%. Telstra has approximately $15.5 billion of debt and market capitalisation (value of equity holdings) of around $73 billion. This means that Telstra's debt holdings comprise only 18% of Telstra's total enterprise value (Table 27).

Table 27: Values of Telstra equity and debt (as at 31 December 2014)

Market capitalisation	$72,987 million
Short term debt	$2,452 million
Long term debt	$13,175 million
Total enterprise value	$88,614 million
Debt / total value	18%
Equity / total value	82%

Source: Bloomberg

As explained in the statement of [redacted] (Appendix 16), Telstra could not increase its debt holdings to the level assumed by the ACCC (i.e. to 40% of its enterprise value) without compromising its credit rating and thus increasing borrowing costs. In order to reflect the ACCC's gearing assumptions, Telstra would need to increase its debt holdings from $15 billion to approximately $35 billion. Based on S&P and Moody's credit rating metrics, [redacted] considers that this would lead to a downgrade in its credit rating to BBB.[157]

In this respect, the ACCC's decision is internally inconsistent. The ACCC assumes a gearing level that would not allow Telstra to maintain its "A" credit rating, but then that assumes that Telstra can borrow at (or below) the cost of debt for an A-rated business.

(d) Conclusion on the DRP

Telstra accepts that a Telstra-specific measure of the DRP may be appropriate, *provided that data is available and that the Telstra-specific measure that is chosen is reliable and robust*.

However Telstra has concerns with the particular measure of the Telstra-specific bond rate chosen by the ACCC (the TBVAL measure).

If a Telstra-specific bond rate is to be used, this could either be based on information from recent Telstra bond issues and/or the market pricing information periodically collected by Telstra. Both of these measures indicate a Telstra-specific DRP that is significantly higher than indicated by the TBVAL data source.

Telstra considers that the best available information on the current cost of raising debt for Telstra comes from the very recent ten-year bond issue. This indicates that the Telstra DRP is currently 1.94%.

However, this is likely to understate the DRP for a business with the gearing level assumed by the ACCC. As discussed above, if Telstra were to adopt a gearing level that reflects the ACCC's assumptions, this would most likely lead to a downgrade in its credit rating to around BBB. Recent estimates of the DRP for BBB / BBB+ rated businesses are significantly higher than the current DRP for Telstra based on its "A" credit rating.

---

[157] S&P and Moody's both assess a business' ratio of debt to EBITDA in assigning credit ratings. The S&P range on this metric for a BBB credit rating is 3 – 4 times (i.e. businesses with debt value three times their EBITDA will be assigned a credit rating of BBB) while the Moody's threshold on this metric for a BBB credit rating is 2.75 times. [redacted].

5.2.3 Market risk premium

The ACCC adopts an MRP of 6% in the Draft Decision. When combined with a risk-free rate of 2.5%, this implies an estimate of the required market return of 8.5%.

Telstra considers that maintaining an MRP of 6% in current market conditions is unreasonable. Evidence of the current forward-looking MRP – including evidence from the AER's own analysis – demonstrates that the current MRP is currently well above its long-term average value of 6%.

The primary basis for the ACCC's estimate of the MRP is evidence from historical excess returns. The ACCC states that it has placed most reliance on this source of evidence in estimating the MRP.[158] The ACCC also refers to survey evidence, directional information from conditioning variables, and past regulatory decisions (including its own decisions).

A key point of difference between Telstra's approach and the ACCC's approach in the Draft Decision is that the ACCC does not appear to give any real weight to forward-looking estimates of the MRP from the dividend growth model (**DGM**). The ACCC states that it gives "less weight" to DGM results, although in the outcome it appears that *no weight* has been given to these results.

Telstra considers that there is no reasonable basis to disregard DGM results in estimating the MRP. On the contrary, given that DGM results provide the only reliable indication of *current* market conditions, they must be given significant weight by the ACCC in determining the MRP. Failure to take into account DGM results is likely to lead to an MRP estimate that does not reflect current market conditions.

Telstra notes that each of the measures that are given real weight by the ACCC are measures of past market conditions. In particular:

- Estimates of the average historic excess return reflect the long-term average of excess market returns over an historic period. These are not estimates of the current MRP, and will only offer a reasonable guide to the current MRP where current market conditions reflect historic average market conditions.

- Surveys merely provide a snapshot of market practitioner's views at a particular point in time, and therefore, unless very recent, may not reflect current views as to the prevailing MRP. Further, as has been noted by the Australian Competition Tribunal, survey results must be treated with great caution.[159] In many cases, depending on the design and timing of the survey, survey results can be largely valueless or potentially inaccurate.

- Past decisions of the Tribunal or other regulators simply represent the views of those bodies as to prevailing market conditions at those previous points in time. The MRP set in those decisions may not reflect current market conditions.

The only evidence of the current MRP that is referred to by the ACCC is DGM evidence. The DGM provides an estimate of the current MRP, based on current dividend yields and estimates of the long-term growth rate for dividends. The DGM is a simple and transparent method for estimating the current MRP which has been used by numerous regulatory bodies, including the AER.

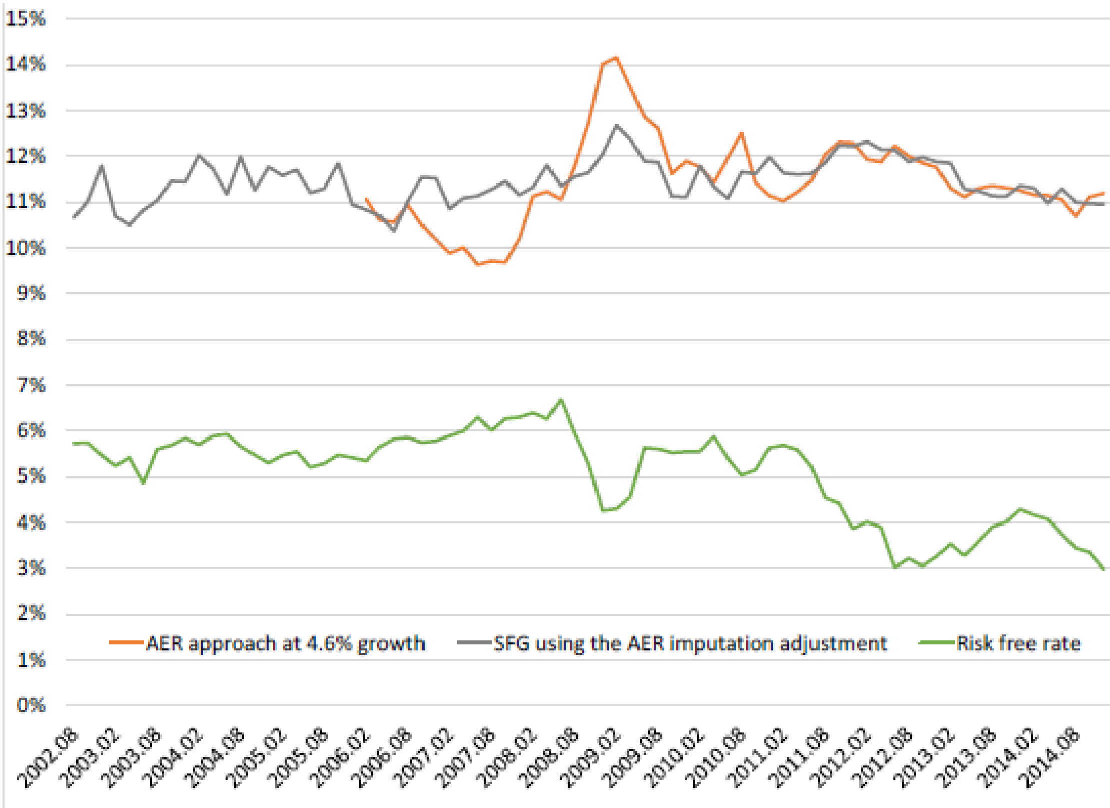
Current estimates of the MRP produced by the AER's DGM are significantly above the historic average value of 6%. In its draft decisions for the NSW electricity businesses, the AER estimated a range for the MRP from its DGM of 6.6% - 7.8%, implying a range for the required market return of 10.15% - 11.35%.[160] If the same estimates of the market return were to be applied in

[158] Draft Decision, p 84.
[159] *Application by Envestra Limited (No 2)* [2012] ACompT 3, [159]-[163].
[160] AER, *Draft decision: Ausgrid distribution determination 2015–16 to 2018–19 – Attachment 3: Rate of return*, November 2014, [3-199]. The AER used a risk-free rate of 3.55% in its Draft Decisions for the NSW electricity businesses. When added to the range of MRP values from the AER's DGM, this implies a range for the market return of 10.15% - 11.35%.

combination with a risk-free rate of 2.5% (per the ACCC's Draft Decision), this would imply a range for the MRP of 7.65% - 8.85%.

Analysis by SFG shows that estimates of the market return (risk-free rate plus MRP) from the AER's DGM have remained relatively constant over the past five years, despite declines in the risk-free rate (Figure 35). The market return implied by the AER's DGM has generally remained between 11% and 12% since 2010, while the risk-free rate has declined from around 5.5% to less than 3%. This implies that the MRP (the difference between the market return and risk-free rate) has increased as the risk-free rate has declined.

Figure 35: SFG and AER estimates of the market return from DGM[161]



Telstra considers that, like the AER, the ACCC must consider and give real weight to DGM results.[162] As noted above, the AER has now developed its own DGM model, and the results of this model indicate that the current MRP is well above its long-term average. The ACCC must properly consider this evidence in estimating the current MRP.

Telstra considers that it would be unreasonable for the ACCC to maintain an MRP of 6% in current market conditions. Evidence in relation to the current MRP indicates that it is well above its long-term average value of 6%.

Given changes in financial market conditions over the past six months, even an estimate of 6.5% is likely to understate the current MRP. Current evidence indicates that the MRP is likely to be in excess of 7%.

[161] SFG, *Cost of equity: Update report for Jemena Gas Networks' averaging period – 19 January to 16 February 2015*, March 2015, Figure 2.

[162] The ACCC appears to consider that the AER has only been required to give consideration to DGM results since the energy rules were amended in November 2012. This is not the case. The AER considered DGM measures prior to the November 2012 rule changes, including in its 2008/09 review of WACC parameters (AER, *Final decision: Electricity transmission and distribution network service providers – Review of the weighted average cost of capital (WACC) parameters*, May 2009). While the AER appears to give greater weight to DGM results in recent decisions, this is most likely due to it having greater confidence in the results of these models (particularly the results of its own DGM) rather than any change in the regulatory framework. In any event, it is not clear why the ACCC would not be similarly required to have regard to information before it in relation to the DGM.

5.2.4 Equity beta

Telstra's October submission explained that an equity beta of 0.7 (as determined in the 2011 FADs) is no longer appropriate, as it does not reflect the degree of systematic risk faced by Telstra in supplying fixed line services. Telstra argued that the equity beta should be increased to at least 0.8, in order to properly compensate for this risk exposure.

This was supported by two forms of evidence:

- a comparison between Telstra and other Australian regulated businesses, in terms of exposure to systematic risk and the equity beta values determined by the regulator. This comparison showed that an equity beta of 0.7 would be towards the lower end of the range of equity beta values for regulated infrastructure businesses in Australia. Telstra argued that it would be unreasonable to maintain an equity beta at this level, given Telstra's relatively high exposure to systematic risk; and

- empirical evidence from a sample of international telecommunications businesses.

Based on this evidence, Telstra concluded that a reasonable but conservative estimate of the asset beta associated with the supply of fixed line services is 0.5 (implying an equity beta of 0.8, at Telstra's assumed gearing level).

The ACCC does not agree with Telstra's analysis in relation to the equity beta in the Draft Decision. Each of the issues raised by the ACCC is addressed below.

(a) **Comparison with other Australian regulated businesses**

Telstra's October submission identified a number of differences between Telstra and other regulated businesses which mean that it is likely to be more exposed to systematic risk. These included differences in the nature of services supplied, and particular, higher income elasticity of demand for telecommunications services, and differences in the form of regulation applied to Telstra and its infrastructure peers.

The ACCC does not agree that Telstra faces higher risk exposure than other Australian regulated businesses for four reasons:

- the ACCC is not persuaded that differences in the nature of services supplied by Telstra and other regulated entities are likely to impact on exposure to systematic risk;

- the ACCC does not agree that a regulated firm's systematic risk exposure will necessarily be affected by the decision between revenue-cap and price-cap form of regulation;

- the ACCC notes that not allowing unders/overs adjustments may incentivise efficient and prudent expenditure; and

- the ACCC considers that the risk and cost of unforeseen events should be reflected in Telstra's expenditure allowance.

In relation to the first of these points, the ACCC has dismissed the evidence presented by Telstra in relation to income elasticities, on the basis that "*the assessment of systematic risk exposure… should be considered in the context of the regulated business and industry*".[163] It is not clear why income elasticities would not be relevant to this assessment – income elasticity is a measure of how responsive demand will be to changes in income levels, and will therefore bear on the exposure of the regulated businesses to fluctuations in economic activity. While the elasticity study referred to by Telstra is relatively old, the income elasticity of demand for fixed-line services is only likely to have increased since the date of this study, due to changes in the telecommunications

[163] Draft Decision, p 94.

industry and the development of competing services (e.g. mobile services).[164] As noted in Telstra's October submission, the available evidence indicates that the income elasticity of demand for fixed line services is significantly higher than in other regulated industries.

In relation to the second point, Telstra considers that the decision between revenue-cap and price-cap regulation will impact on exposure to systematic risk. Under a price-cap, the regulated business bears the risk that actual demand may be different to forecast, due to changes in economic conditions or other factors. Even if this risk is symmetrical over the long-run, it is still a risk that is borne by the regulated business under a price-cap, but not under a revenue-cap. This has been acknowledged by the AER and other regulators such as the QCA. For example in its recent Draft Decision for Ausgrid, the AER explains that *"a revenue cap removes a significant amount of the revenue risk from unexpected changes in demand".*[165]

In relation to the third point above, while it is true that not allowing unders/overs adjustments may incentivise efficient and prudent expenditure, it will also create additional cost risk for the regulated business. Although the rationale may be to incentivise efficient expenditure, the effect is to increase expenditure risk for the regulated business.

Finally, the cost and risk of unforeseen events cannot be reflected in Telstra's ex ante expenditure. Since these events are unforeseen, it is impossible for them to be accounted for in the expenditure allowance. It is for this reason that some regulatory regimes allow for pass through of costs associated with certain unforeseen events such as natural disasters, tax changes, or changes in regulated service standards.[166] However since there is no pass through mechanism in this case, Telstra bears the risk associated with unforeseen events.

The AER and other regulators have recognised that the form of regulation will impact on a service provider's exposure to systematic risk. In particular, the AER has noted that revenue cap regulation and cost pass through mechanisms (neither of which applies to Telstra) can insulate the service provider from risk. In its recent Draft Decision for Ausgrid, the AER states:[167]

> *The structure of the regulatory regime insulates service providers from systematic risk. For example, this provides for revenue cap regulation, tariff variation mechanisms and cost pass through mechanisms.*

The different form of regulation applied to Telstra means that it is more exposed to systematic risk, relative to many other regulated businesses. In particular, the use of price-cap regulation and the absence of any cost pass through mechanism means that Telstra is more exposed to both demand and expenditure risk.

Further, the nature of the telecommunications industry and the higher income elasticity of demand for telecommunications services means that demand risk is likely to be greater for Telstra, relative to businesses in other regulated industries. Higher income elasticity implies that demand for telecommunications services is likely to be more exposed to fluctuations in economic activity.

Therefore Telstra maintains its view that it would be unreasonable to maintain an equity beta at the lower end of the range of values for regulated infrastructure businesses in Australia.

(b) **Empirical evidence**

The empirical evidence presented in Telstra's October submission supported an asset beta of at least 0.5 for Telstra. Analysis of asset betas for international telecommunications businesses

[164] The development of competing services, such as mobile services, is likely to diminish the status of fixed-line services as an "essential service" and would therefore be expected to increase the income elasticity of demand for fixed-line services.
[165] AER, *Draft decision: Ausgrid distribution determination 2015–16 to 2018–19 – Attachment 3: Rate of return*, November 2014, [3-68].
[166] For example: National Electricity Rules, clause 6.6.1.
[167] AER, *Draft decision: Ausgrid distribution determination 2015–16 to 2018–19 – Attachment 3: Rate of return*, November 2014, [3-234].

indicated that the average asset beta is at least 0.5 (the precise value depends on whether daily, weekly or monthly data is used).

In the Draft Decision the ACCC relies on a different set of empirical estimates. The ACCC's estimates produce a lower average asset beta across the international comparator set.

The ACCC provides a number of reasons for its different interpretation of the empirical data, including:[168]

- firstly, the ACCC uses "raw" rather than "adjusted" equity beta estimates from Bloomberg; and
- the ACCC uses a different formula to de-lever the equity beta estimates provided by Bloomberg for the international comparator set. The ACCC uses the Monkhouse formula, which accounts for the Australian dividend imputation tax system.

For reasons discussed below, Telstra does not agree with the methodological choices made by the ACCC on each of these issues.

(i) Raw versus adjusted equity betas

Bloomberg provides both "raw" and "adjusted" equity beta estimates for each business in the international comparator set.

Bloomberg calculates its adjusted equity beta estimates as follows:

$$\beta_{ADJUSTED} = 0.33 + 0.67 \times \beta_{RAW}$$

The Bloomberg adjusted beta represents an estimate of the forward-looking beta, whereas the raw beta simply reflects the historically observed beta. The estimate of the forward-looking (adjusted) beta is based on an assumption of mean reversion – that is, a firm's beta moves toward the market average over time.

The Bloomberg adjustment formula is based on empirical observation of mean reversion over time. Empirical analysis by Blume (1971) demonstrated that if you observe a low beta estimate for a firm in one period, on average you are likely to observe a higher beta estimate for that firm next period.[169] Later work by Vasicek (1973) verified that the mean-reversion tendency documented by Blume will be observed even if there is no change whatsoever to the actual systematic risk.[170] The Bloomberg adjustment formula referred to above is consistent with the empirical results of Blume (1971), in terms of the relationship between observed betas over time.[171]

In assessing the forward-looking cost of capital, Telstra relies on the adjusted equity beta estimates from Bloomberg. Telstra considers that these estimates provide a better indication of the future equity beta.

Similarly, in the context of setting a forward-looking return on capital allowance for the next regulatory period, the ACCC should rely on the adjusted equity beta estimates from Bloomberg. Use of raw beta estimates is likely to lead to underestimation of the true forward-looking beta for businesses with a beta of less than one.

[168] Draft Decision, pp 93-94.
[169] Blume, *On the assessment of risk*, 1971, pp 1–10.
[170] Vasicek, *A note on using cross-sectional information in Bayesian estimation of security betas*, 1973, pp 1233–1239.
[171] In Table 4 of his paper, Blume reports results from a series of regressions of period 1 beta on period 2 beta. Approximately, the regression results suggest that the beta estimate in period 2 = 0.33 + 0.67 × beta estimate in period 1.

(ii) De-levering formula

The ACCC notes that in calculating an implied asset beta for each business in the international comparator set, Telstra has applied a de-levering formula which does not account for the Australian dividend imputation tax system. The ACCC prefers to use the Monkhouse formula, which does account for dividend imputation.

Telstra does not agree that the Monkhouse formula should be applied in de-levering equity beta estimates for international telecommunications businesses. The Monkhouse formula embodies certain assumptions about dividend imputation which may be appropriate in an Australian context, but which do not apply to international businesses. In particular, the Monkhouse formula assumes that investors receive imputation credits, and assign some value to those imputation credits – clearly this assumption is not applicable in overseas jurisdictions where there is no dividend imputation system.

Australia is relatively unique in having a dividend imputation tax system. Telstra is only aware of one other country in the international comparator set (New Zealand) that has a similar system.

Therefore, for the purposes of de-levering equity beta estimates for international businesses, Telstra does not consider it appropriate to apply a formula which assumes that there is dividend imputation.

(iii) Updated estimates

Telstra has obtained updated equity beta estimates for the international comparator set, as at March 2015. Using the adjusted equity beta estimates from Bloomberg, implied asset betas were calculated for each firm (Table 28 below). The updated comparison continues to support an asset beta for Telstra of at least 0.5.

Table 28: Updated comparison of asset betas for global peer set (March 2015)

Firm	5 year monthly	5 year weekly
AT&T	0.47	0.59
Verizon	0.43	0.54
Cincinatti Bell	0.47	0.48
Bell Canada	0.27	0.39
British Telecom	0.79	0.83
Telekom Austria	0.42	0.51
Telecom Italia	0.45	0.43
Hellenic Telecom	0.88	0.79
TDC Solutions	0.36	0.40
Portugal Telecom	0.12	0.13
TeliaSonera	0.51	0.67
Telefonica	0.65	0.59
Deutsche Telecom	0.58	0.56
Orange Telecom	0.56	0.61
KPN	0.39	0.56
SwissCom	0.49	0.54
NTT	0.52	0.61
SingTel	0.69	0.74
PCCW	0.36	0.36

Firm	5 year monthly	5 year weekly
Chunghwa	0.39	0.51
Korea Telecom	0.26	0.27
Bezeq	0.85	0.67
Spark (Telecom) NZ	0.97	1.11
Telstra	0.52	0.59
Peer group average	**0.52**	**0.56**

Source: Bloomberg

(c) **Conclusion in relation to beta**

For reasons above, Telstra maintains its view that the equity beta should be increased to at least 0.8, in order to properly compensate for risk exposure.

Telstra considers that it would be unreasonable to maintain an equity beta of 0.7, given Telstra's relatively high exposure to systematic risk, compared to other regulated businesses. An equity beta of 0.7 would also be inconsistent with current empirical evidence.

5.2.5 Gamma

In the Draft Decision, the ACCC adopts a value for gamma of 0.45. The ACCC does not specify values for the two components of gamma, the distribution rate and the value of distributed credits (theta).

Telstra considers that there is no reasonable basis to adopt a value for gamma of 0.45. This is because:

- ***Recent analysis by the AER demonstrates that the <u>maximum</u> possible value for theta is 0.43***. In its recent Draft Decision for Ausgrid, the AER presents updated analysis of credit redemption rates from tax statistics.[172] The AER concludes from this analysis that the best point estimate of the redemption rate is 0.43 – i.e. of imputation credits that are distributed only 43% are redeemed. This implies that theta can be no higher than 0.43 (since unredeemed credits have no value) and is likely to be lower than this, to the extent that redeemed credits are less than fully valued. This means that the ACCC's gamma value of 0.45 cannot be correct – even if a distribution rate of 1 was assumed, and if all redeemed credits were fully valued, gamma could be no higher than 0.43.

- ***The best evidence in relation to theta indicates a value of 0.35***. This is the value indicated by Professor Stephen Gray's dividend drop-off study.[173]

  Market value studies, such as Professor Gray's dividend drop-off study, provide the best evidence in relation to the value of distributed imputation credits. These studies indicate the value of imputation credits to investors, as reflected in share price movements.

  The best available market value study is Professor Gray's dividend drop-off study. The methodology used in Professor Gray's study is the product of a consultative development process involving the AER and several regulated businesses and overseen by the Tribunal in the *Energex* review. The methodology used in Professor Gray's study was designed specifically to overcome methodological shortcomings of previous studies (e.g. shortcomings in the methodology employed by Beggs and Skeels (2006), which were identified by the Tribunal in the *Energex* review). In accepting the conclusions of Professor Gray's study, the Tribunal expressed confidence in those conclusions in light of the careful

[172] AER, *Draft decision: Ausgrid distribution determination 2015–16 to 2018–19 – Attachment 4: Value of imputation credits*, November 2014, [4-59].
[173] Professor Stephen Gray, *Updated dividend drop-off estimate of theta: Report for the Energy Networks Association*, June 2013.

scrutiny to which the methodology had been subjected, and the way in which it had been designed to overcome shortcomings of previous studies.[174]

- ***Equity ownership rates do not provide evidence of the value of imputation credits.*** The ACCC appears to rely on estimates of the utilisation rate based on equity ownership rates – for example the ACCC observes that foreign ownership of Telstra is restricted to a maximum of 35%, then concludes from this that "*the utilisation rate across Telstra's shareholders is likely to be in the range of 0.65-1*".[175] However equity ownership rates do not indicate the utilisation rate or value of imputation credits to investors. Equity ownership rates will only indicate the maximum set of investors who ***may*** be eligible to redeem imputation credits and who may therefore place ***some*** value on imputation credits. Theta can be no higher than the equity ownership rate and will in fact be lower due to factors which reduce the value of credits distributed to Australian investors.

- ***Distribution rate should be an economy wide measure.*** The distribution rate is conventionally estimated as a market-wide parameter, rather than a firm-specific parameter – this is the approach taken by the AER in its recent rate of return guideline, supported by expert advice.[176] Therefore the ACCC's estimate of gamma should not be based on estimates of the Telstra-specific distribution rate.

Telstra maintains its view that the best estimate of gamma is 0.25. This reflects the best current estimate of the market-wide distribution rate (0.7)[177] and the best estimate of theta, from Professor Gray's dividend drop-off analysis.[178]

5.3 Conclusion

In the Draft Decision, the ACCC adopts a nominal vanilla WACC of 5.43%. This is the product of the ACCC applying an historically low risk-free rate, in combination with traditional methods for estimating other WACC parameters.

It seems clear, however, that in this case the ACCC's traditional method is delivering unreasonable results. The WACC determined in the Draft Decision is lower than in any recent decision of the ACCC or any other Australian regulator. It is also significantly below estimates of Telstra's cost of capital from independent market practitioners.

In these circumstances, the ACCC should review its traditional approach and consider how it may need to be amended in order to ensure a reasonable outcome. In particular the ACCC must, at a minimum:

- review the methodology and data sources used to estimate the DRP, as it is clear that the ACCC's DRP estimate does not reflect Telstra's efficient debt financing costs;

- review its approach to estimating the MRP, to ensure that its estimate reflects *current* market conditions; and

- review the methodology and data sources used to estimate the equity beta, to ensure that this accurately reflects Telstra's exposure to risk.

[174] *Application by Energex Limited (Gamma) (No 5)* [2011] ACompT 9, [22].
[175] Draft Decision, p 101.
[176] AER, *Better Regulation: Explanatory Statement Rate of Return Guideline*, December 2013, section 9.3.3.
[177] NERA, *The Payout Ratio: A report for the Energy Networks Association*, June 2013.
[178] Professor Stephen Gray, *Updated dividend drop-off estimate of theta: Report for the Energy Networks Association*, June 2013.

6. Asset lives

Key points:

- The 2011/2013 FAD asset lives used by the ACCC in the Draft Decision for new capital expenditure do not reflect a reasonable, accurate or up-to-date estimate of the economic life of the relevant assets within each FLSM Asset Class.
- In many cases the 2011/2013 FAD asset lives rely on earlier estimates sourced from the Analysys Mason (TSLRIC) cost model, which had determined benchmark lives to be applied to the equipment within its hypothetical model. As a result, the asset lives that are applied to the FLSM Asset Classes do not relate to the same or actual assets and types of network equipment within each of the FLSM Asset Classes.
- As part of the 2013 BBM RKR process, Telstra supplied the ACCC with up-to-date economic lives for new expenditure within each FLSM Asset Class, based on the weighted lives of the actual telecommunications equipment and asset types that make up each class. These lives were determined and reviewed by Telstra on an annual basis using the most up-to-date information available, and the review process is independently reviewed by Ernst & Young (**EY**).
- The problems caused by the ACCC's approach are apparent in the scale of the differences between its asset lives for new capital expenditure, which are in some cases up to 7 times longer than those actually adopted by Telstra for accounting purposes and proposed for the FLSM.
- In addition to the substantial information supporting the BBM RKR asset lives as part of the BBM RKR responses and the current FAD process, Telstra submits further detail on how Telstra has calculated its service lives, including how the asset lives in Telstra's internal systems align with the FLSM Asset Classes.
- Telstra submits that its proposed asset lives should be applied in determining depreciation allowances in the FLSM for the forthcoming FAD period – i.e. from FY2016 onwards.

The ACCC have stated in their Draft Decision that, except for copper cables, it does not accept Telstra's proposed asset lives for forecast capital expenditure in any of the depreciable asset classes in the FLSM. The ACCC has instead principally retained the asset lives established in the 2011 and 2013 FADs, which were based on the TEA and Analysys cost models previously used to determine TSLRIC pricing.[179]

The Draft Decision rejects Telstra's proposed asset lives principally on the basis that the explanatory material provided by Telstra, to date, is said to be insufficiently detailed and transparent to enable the ACCC to be satisfied that the information on which they are based is superior to that used for the previous FADs.[180] At the same time, the ACCC acknowledges that it would be appropriate to modify the asset lives (on a forward-looking basis) if better and more up-to-date information were to become available.[181]

In respect of copper cables, the ACCC acknowledges that asset lives for new capital expenditure must ensure that Telstra continues to have an incentive to invest efficiently in assets.[182] The same rationale applies to all other asset classes.

[179] Draft Decision, p 127.
[180] Draft Decision, p 128.
[181] Draft Decision, p 128.
[182] Draft Decision, p 128.

However, whilst acknowledging the importance of accurate asset lives (to ensure efficient incentive to invest), the result of the approach adopted by the ACCC is that the asset lives in the FLSM are, in the great majority of cases, substantially longer (between [redacted] and [redacted]) than those adopted by Telstra, as evidenced in Table 29 below. This table compares the asset lives derived by the ACCC and Telstra for new capital expenditure. As the calculation of the asset lives has been updated to be weighted by the value of capex booked in FY2014, and further, includes some additional assets which were inadvertently excluded, the Telstra asset lives below differ slightly to that provided to the ACCC in January 2015.

[redacted]

[redacted]

Many of the asset lives that the ACCC has used for the purposes of the Draft Decision not only differ from the asset lives provided by Telstra do not provide reflect the best and most up-to-date information available, and do not provide a reasonable basis for forecasting costs through the FLSM.

Telstra agrees that the asset lives in the FLSM must reflect the best and most up-to-date estimate available of the economic lives of new assets.

The asset lives Telstra has proposed in its BBM RKR material (as updated) reflect the economic lives of the relevant FLSM asset classes,[183] and are its best and most up-to-date view. Telstra reviews and updates its asset lives for accounting purposes on an annual basis and this service review process is independently reviewed by EY.

Telstra has supplied the ACCC with substantial information supporting the BBM RKR asset lives as part of the BBM RKR responses and the current FAD process.[184] Telstra has also provided a statement by [redacted], setting out more detail on the approach taken by Telstra in assessing the service lives for copper cables.[185]

However, in response to concerns expressed in the draft decision, Telstra provides with this submission further evidence in support of the asset lives that have been proposed, including:

- setting out in Appendix 7 substantial further detail on how Telstra has calculated its service lives, including how the asset lives in Telstra's internal systems align with the asset classes used in the FLSM; and
- a copy in Appendix 19 of the annual service life review process document prepared by EY.

By contrast, the asset lives used in 2011 (and 2013) FADs do not currently reflect a reasonable, accurate or up-to-date estimate of asset lives for forecast capital expenditure. These asset lives were subject to criticism at the time they were first used, and have become substantially less accurate since. This is because:

- the data they are based on is at least 5 years old (and in some cases up to 6 years old);
- in many cases, the data is drawn from a hypothetical cost modelling exercise for which the notional asset classes do not reflect the assets within the corresponding FLSM asset class; and
- in some important case, the assets which were included in the Analysys Mason asset lives were different to those included in the FLSM. For example, the "Local Switching" asset class in the FLSM is made up of PSTN (Ericsson AXE and Alcatel Lucent S12) switching equipment. However, the benchmark asset life used by the ACCC in the 2011 FAD assumes that this asset class also includes the exchange building that houses this equipment. As a result, the ACCC benchmark overstates the economic life of this asset class by [redacted]

[183] Where the asset lives are not described identically in the FLSM and for Telstra's internal accounting purposes, Telstra has adopted weighted lives for the purpose of the FLSM reflecting the lives of the set of equivalent assets.
[184] Telstra Corporation Limited, *Final Access Determinations (FADs) Inquiry – confidential response to information request under the BBM RKR*, November 2013, pp 55-58.
[185] Statement of [redacted], February 2015, pp 10-12.

Telstra criticised the Analysys Mason service lives adopted by the ACCC in the 2011 FAD at the time they were adopted[186] and stated that Telstra's own service lives:[187]

> *…most accurately and appropriately reflect the relevant network conditions and environment, as well as being tested against international benchmarks. In that sense, they offer the best of both worlds: providing benchmarked asset lives, which nonetheless reflect the unique Australian network and conditions.*

Telstra submits that the asset lives it proposes, which align with the service lives we use for our own internal accounting purposes (and which are reviewed on an annual basis in line with accounting principles) are the most up-to-date and appropriate for the purpose of the FLSM.

The use of the ACCC's proposed lives gives rise to a substantial impact on the timing of cost recovery especially if the ACCC's approach to "optimising" substantial amounts of the RAB (referred to in Chapter 2), because it would increase the value of capex that is effectively stranded and inappropriately treated as disposals in the ACCC's Draft Decision.

These matters are addressed in more detail below.

6.1 The previous 2011/2013 FAD asset lives are not reasonable

Telstra submits that the ACCC should not retain the asset lives determined in the 2011 and 2013 FADs for a number of reasons.

6.1.1 Limitations of the asset lives in the Analysys model

The ACCC relied upon the Analysys model as a source of information on asset lives for the 2011 and 2013 FADs. This involved using information sourced from the Analysys cost model to determine the average asset life of Telstra's CAN and Core assets, except ducts and pipes.[188] The Analysys model is a hypothetical, forward-looking TSLRIC model that "builds" a hypothetical network.

The Analysys model and its associated asset lives are not an appropriate basis for determining economic lives of asset lives, including for the following reasons:

(a) **The assets forming part of the asset classes within the Analysys model are not equivalent to the assets comprising asset classes in the FLSM**

The asset classes outlined in the Analysys model are not equivalent to the asset classes in the FLSM. Telstra has previously highlighted this issue in its CAF for the ACCC FLSM.[189]

Indeed, although the Analysys model has asset classes with the same names as the FLSM, the assets inside those classes are, in many cases, quite different (Table 30 below). A clear example of this is Switching Equipment. Telstra previously submitted the following in relation to this asset class:[190]

> *The CO01 Switching Equipment - Local Asset Class comprises PSTN equipment used for the provision of voice (PSTN and ISDN) calls. This includes the Remote Subscriber Stage (RSS) devices – used to aggregate end-user copper pairs – Local Access Switch (LAS)*

[186] Telstra Corporation Limited, *Pricing Principles for Fixed Line Services Response to the ACCC's Draft Report,* October 2010, pp 102-109.
[187] Telstra Corporation Limited, *Pricing Principles for Fixed Line Services Response to the ACCC's Draft Report,* October 2010, p 105.
[188] ACCC, *Review of the 1997 telecommunications access pricing principles for fixed live services, Draft Report*, September 2010, pp 79-80.
[189] Telstra Corporation, Cost Allocation Framework for the ACCC Fixed Line Services Model, Framework and Model Guide, Version 1, July 2014, p 31.
[190] Telstra Corporation, Cost Allocation Framework for the ACCC Fixed Line Services Model, Framework and Model Guide, Version 1, July 2014, p 31.

devices – used to control and direct voice calls – and software and other control infrastructure.

It is important to note the Switching Equipment Local Asset Class within the FLSM RAB does not include exchange building assets or ancillary assets such as power supplies and air-conditioning. These general purpose facilities were included in the Analysis [sic] Model's asset class of the same name (within the FLSM these assets are part of the CO07, CO08 and CO09 Asset Classes).

More detail on the differences between the switching equipment asset classes, as used in the Analysys Model and FLSM, is set out below:

CO01 Switching Equipment – Local

The Analysys Model includes the following asset types in its Asset Class referred to as 'Local Switching':

- LE: Site acquisition, preparation and maintenance;
- LE: UPS (40kVA) and Generator (50kVA);
- LE: Air conditioning unit (10kVA);
- LAS/LTH Building: Site acquisition, preparation and maintenance;
- LAS: UPS (50kVA) and Generator (50kVA); and
- LAS: Air conditioning unit (50kVA).

However, none of these asset or equipment types are contained within the similarly named FLSM Asset Class. These assets are included in the calculation of the Analysys asset lives and since these assets are typically far longer lived than the assets actually within the FLSM Asset Class CO01, they contribute to the significant discrepancy between the ACCC's and Telstra's asset life for FLSM Asset Class CO01.

CO02 Switching Equipment – Trunk

The Analysys Model includes the following assets:

- TNS/MTH building: Site acquisition, preparation and maintenance;
- TNS: UPS (100kVA) and Generator (100kVA); and
- TNS: Air conditioning unit (100kVA).

As is the case for CO01, the assets listed above form part of the Analysys Asset Class Trunk / IEN Switching, but have no relationship to the FLSM Asset Class CO02 Switching Equipment – Trunk. The result is a significant discrepancy between the ACCC's and Telstra's average asset life for CO02.

The asset lives in the Analysys Model may also be affected by differences between the remaining lives of existing assets at the time the model was used, and new switching equipment today – for which a substantially shorter life is appropriate.

Table 30: Comparison of Analysys and FLSM asset classes

Asset Code	Asset Class Description	Analysys assets	Analysys lives	FLSM	Telstra Asset Life
CA01	CAN Ducts and pipes	IEN ducting CAN duct	[redacted]	Main duct Distribution duct	[redacted]
CA02	CAN Copper cables	Copper cable		Copper cable	
CA03	CAN Other cables	Fibre cable, ODF connections		Fibre cable FTTP equipment	
CA04	CAN Pair gain systems	LPGS equipment		Pair Gains racks, cards, software	
CA05	CAN Radio Bearer Equipment	Radio equipment Radio site acquisition etc		CAN Radio Bearer Equipment	
CA06	Other CAN	NTP MDF connection Tie cable		NTD (copper)	
C?07	Other Communications	Core billing system Core provisioning systems		CAN Support Structures, CAN and Core racks, tie cables	
C?08	Network Land	No equivalent, Site acquisition located in various CAN and Core classes		Land, structural land improvements, mains power connection	

Asset Code	Asset Class Description	Analysys assets	Analysys lives	FLSM	Telstra Asset Life
C?09	Network Buildings/Support	No equivalent Site acquisition etc various CAN and Core classes	[redacted]	Building, Air con, power plant, lighting, fit-out, security, network management	[redacted]
C?10	Indirect	Business Overheads		Software, hardware, vehicles, aids	
CO01	Switching Equipment - Local	Site preparation etc Processor and MUX Line cards Air con and power		Processors, ports, transfer points, software	
CO02	Switching Equipment - Trunk	Site preparation etc Regenerator Core Radio Air con and power		Transit switching, echo cancellers, software	
CO03	Switching Equipment - Other	Intelligent Network		Other switching equipment	
CO04	Inter-exchange Cables	IEN fibre cables		IEN fibre cables	
CO05	Transmission Equipment	Transmission cards Other Transmission equipment		Clocks, PDH equipment, SDH equipment, WDM equipment, software and huts	
CO06	Core Radio Bearer Equipment	Microwave towers and links		Antennas and links	
CO11	LSS equipment				

Asset Code	Asset Class Description	Analysys assets	Analysys lives	FLSM	Telstra Asset Life
CO12	Data Equipment	Line cards DSLAM BRAS and servers	[redacted]	CMUX, ASAM, ISAM, software, IP hardware	[redacted]

(b) **The asset lives in the Analysys model were based solely on international benchmarking, and not Telstra's own views of its service lives**

At the time of its development and adoption by the ACCC, Telstra also highlighted problems surrounding the use of the Analysys model for determining asset lives given the over-reliance on international benchmarking:[191]

> *Telstra shares the ACCC's concerns about the ability of international benchmarking to fully and properly reflect the unique network and conditions which exist in Australian [sic] in relation to the CAN and Core assets.*

Telstra submits that its actual and current service lives most accurately and appropriately reflect the relevant network conditions and environment of its assets (which is the intent of the FLSM) then theoretical lives based solely on international benchmarks.

Moreover, the service life reviews that are undertaken by Telstra each year nonetheless have the benefit of including an element of benchmarking – as Telstra compares its proposed lives for each asset class against international peers, as a final check to ensure that they are reasonable. Telstra's proposed lives offer the best of both worlds as they reflect Telstra's network and conditions, whilst ensuring that they remain comparable with international standards.

(c) **Given the evidence provided by Telstra, the asset lives from 2011 FAD do not reflect a reasonable view of the economic lives of those assets**

The ACCC notes in the Draft Decision that:[192]

> *In general, the ACCC considers that it would accord with regulatory best practice to review asset lives if better and more up-to-date information were to become available*.

As well as the detailed material set out in this chapter (including the EY service life review material), Telstra has previously provided the following information on its service lives:

- **BBM RKR -** In the BBM RKR Telstra outlined in detail the mapping process it used to allocate assets to the FLSM categories as the asset classes used by the ACCC do not match the asset classes used in Telstra's internal accounting systems. [193]
- [redacted].[194]

Telstra now also sets out a further detailed description of the asset lives adopted for each FLSM Asset Class in Appendix 7. This description is drawn from Telstra's service life reviews for relevant or equivalent asset classes.

This compares with the Analysys model, which was both a TSLRIC+ model and one that was developed in 2007-2008 before the building block model was adopted by the ACCC.[195] Compared with the evidence provided by Telstra in support of the use of its actual services lives, the 2011

[191] Telstra Corporation Limited, *Pricing Principles for Fixed Line Services Response to the ACCC's Draft Report,* October 2010, p 104.
[192] Draft Decision, p 128.
[193] Telstra Corporation Limited, *Final Access Determinations (FADs) Inquiry – confidential response to information request under the BBM RKR*, November 2013, p 56.
[194] Statement of [redacted], February 2015, pp 10-12.
[195] Draft Decision, p 143.

FAD asset lives are both materially incorrect (in relation to its description of asset classes) and now out-of-date.

6.1.2 Calculating Weighted Average Service Life (WASL)

Telstra has calculated a WASL for each FLSM asset class based on booked capex within each FLSM asset class during FY2014. This process involves two steps, which are described below.

Step 1: Calculate the Effective Service Life for each asset class in Telstra's accounting systems

Within Telstra's accounting systems, assets are grouped in classes, then categories. An asset category will contain multiple asset classes. The asset categories in Telstra's accounting systems are then aggregated to form the FLSM asset classes. Therefore an FLSM asset class will typically contain multiple Telstra asset categories, each of which will comprise multiple Telstra asset classes.

The starting point for calculating WASLs for each FLSM asset class is therefore to calculate effective lives for each asset class recorded in Telstra's accounting systems.

The Effective Service Life for each asset class in Telstra's accounting systems is calculated as:

- If the Type of Life is "No Depreciation", Effective Service Life = 10,000
- Otherwise, if Type of Life is Date of Acquisition (**DoA**), Service Life = Life(Years) + Life(months)/12
- Otherwise, if Type of Life is "End Date"
  - if the End Date is within next 6 months then the Service Life = 0.
  - otherwise Service Life = the fraction of the year represented by the number of whole days between the midpoint of the financial year in which the service life is to be applied and the End Date.

Effective service lives for each Telstra asset class are then used to calculate WASLs in step 2.

Step 2: Calculate the WASL using the Effective Service Life

The WASL for each asset category and FLSM asset class are calculated as a weighted average of the effective service lives for Telstra asset classes within the category or class. The weightings are based on the amount of capital expenditure booked to each Telstra asset class in FY2014.

In order to calculate WASLs for FY2015, Telstra has used actual accounting data for FY2014 from its SAP system (i.e. data on actual capex in each Telstra asset class for that year). For future years, Telstra has assumed (consistent with its usual forecasting practices) that the composition of capex within each FLSM asset class will be the same as FY2014.

When calculating the WASL for each asset category, Telstra used the effective service lives assigned to each component asset class within its accounting systems. The WASL for each asset category is simply a weighted average of the effective service lives for each asset class within the category, weighted by the amounted of capex booked for the relevant year in each class. For any asset category *j*, comprising multiple asset classes *i*, the WASL is calculated as follows:

$$WASL_j = \sum_i \frac{Asset\ Class\ Capex_i}{Asset\ Category\ Capex_j}\ x\ Asset\ Class\ Effective\ Service\ Life_i$$

For example, within the Telstra asset category "main duct" (coded XC in Telstra's accounting systems) there are three asset classes Telstra Asset Class ZC1DUCT, ZC8CAPCV and ZC8CAPIN. The WASL for the main duct asset category is therefore calculated as a weighted average of the effective service lives for these three asset classes. In this case, since each of the three Telstra Asset Classes (ZC1DUCT, ZC8CAPCV and ZC8CAPIN) which comprise Telstra Asset Category XC have the same Effective Service Life of [redacted] years, the WASL for Telstra Asset Category XC also equals [redacted] years. The same process is applied to calculate the WASL for Telstra Asset Category XN (distribution duct), the result of which is a WASL of [redacted] years.

In order to calculate the WASL for each FLSM asset class, a similar process is followed. The WASL for each FLSM asset class is a weighted average of the WASLs for each Telstra asset category within that class, weighted by the amounted of capex booked for the relevant year in each category. This means that for any FLSM asset class *k*, comprising multiple Telstra Asset Categories *j*, the WASL is calculated as follows:

$$WASL_k = \sum_i \frac{Asset\ Category\ Capex_j}{FLSM\ Asset\ Class\ Capex_k}\ x\ Asset\ Category\ WASL_j$$

For example, for FLSM asset class CA01 (ducts and pipes), which comprises Telstra Asset Categories XC and XN, the WASL is the weighted average of WASLs for the XC and XN asset categories, calculated as above. This results in a WASL for this FLSM asset class of [redacted] years.

6.2 Conclusion

Telstra considers that, except for copper cables (for which Telstra agrees the life should be [redacted] years), the asset lives proposed in the Draft Decision for new capital expenditure in respect of each of the other FLSM Asset Classes do not reflect the best and most up-to-date information available, and are inaccurate in material respects.

The asset lives proposed by Telstra reflect the economic lives of the fixed-line assets and are the product of detailed and thorough service life review process undertaken by Telstra (and overseen by EY) in the ordinary course of business. Telstra has provided substantial information outlining this process and to explain and support its proposed asset lives.

By contrast, the asset lives applied in the 2011 FAD are based on a theoretical international benchmarking exercise undertaken 5-6 years ago. As Telstra noted at the time, in some cases the asset lives used in the Analysys model also relate to a different set of assets to the FLSM Asset Classes, leading to substantially different (and in almost all cases, longer) lives.

Telstra submits that its proposed asset lives should therefore be adopted in determining depreciation allowances in the FLSM in respect of new capital expenditure.

7. Cost allocation

Key points:

- Telstra acknowledges that the ACCC has accepted the use of a fully-allocated cost framework for the FLSM, noting that this supports the objective of promoting efficient investment in the network.

- Telstra welcomes the opportunity to continue to work with the ACCC and its consultant to provide further information on the Cost Allocation Framework (CAF), including outside of this response to the Draft Decision.

- The two principal areas in which the ACCC have raised questions in the Draft Decision about the allocators adopted by Telstra were:

  - the use of the FLSM "general allocator" to allocate Exchange building costs (Asset Class (CO09) as between fixed services; and

  - the approach adopted to allocation of costs associated with Transmission assets.

- For the CO09 Asset Class (Core Network Buildings and Support) costs are allocated among fixed line services and other Telstra services using a so-called "general allocator". To test the reasonableness of this allocation approach, Telstra has undertaken further analysis to develop a specific allocator for CO09, based on rack usage. The results of this analysis show that not only is the general allocator a reasonable basis for allocation exchange cost among Telstra services, it likely understates the costs otherwise attributable to the regulated fixed line services.

- Telstra's "capacity based" approach to the allocation of transmission costs is also highly conservative and results in less costs from this asset class being allocated to declared services then would be the case under the "cost based" approach previously adopted by the ACCC under the Analysys Mason model. The overall impact if the Analysys Mason cost allocation factors were applied to the FLSM is that the costs attributed to the regulated wholesale services would increase by [redacted] dollars over the period FY2016-2019.

7.1 Use of a fully allocated cost framework and ongoing work to verify the accuracy of allocation information

The Fixed Principles impose the following requirements on the choice of allocators, when developing and applying the FLSM (clause 6.14):

- *The allocation of costs of operating the PSTN should reflect the relative usage of the network by various services.*

- *Direct costs should be attributable to the service to which they relate.*

- *The cost allocation factors for shared costs should reflect causal relationships between supplying services and incurring costs.*

- *No cost should be allocated more than once to any service.*

- *The determination of cost allocation factors should reflect the principles in 6.14(a) – (c) above except where reliable information is not available to support the application of the principles.*

Telstra acknowledges the adoption by the ACCC of a fully allocated cost model to determine the costs of supplying declared services. In doing so, the Draft Decision notes that:[196]

> *If costs are not fully allocated between all relevant services, the access provider cannot have an expectation it will be able to recover its efficient costs, and this is likely to discourage efficient investment in the fixed line network.*

While the Draft Decision accepts the consistency of Telstra's Cost Allocation Framework (CAF) and, in most cases, accepts that the individual allocators are based on relevant information regarding usage of assets, the ACCC indicated that it intended to obtain further expert advice on the methodology and assumptions adopted by Telstra.

Since publishing the Draft Decision, the ACCC (and its consultant) has approached Telstra directly asking for a considerable amount of further information in order to verify the operation of its proposed allocators. Telstra welcomes this opportunity to provide further information and will continue to do so, over the coming period, including following submission of this response to the Draft Decision.

This submission is therefore focused on responding to the two principal areas in which the Draft Decision appears to raise questions directly about the allocators adopted by Telstra:

- the use of the "general allocator" to allocate Exchange building costs; and
- the approach adopted to allocation of costs from the Transmission asset class.

In both cases, Telstra has had the opportunity since the Draft Decision to obtain further evidence which clearly demonstrates that our choice of allocators is conservative, and are likely to under-allocate those costs to declared services compared with other uses.

7.1.1 Cost allocator with respect to network exchange buildings (Asset Class CO09)

The ACCC queries the use of a general allocator for certain FLSM assets, notably the allocation of costs associated with 'rack spaces' in Telstra exchange buildings: [197]

> *…whether Telstra's allocator for 'Telstra racks' adequately separates out usage for fixed line services from other uses of racks in its exchanges and if there is a more transparent method of allocating costs on the basis of the fixed network's share of land and building space.*

The use of these facilities in the supply of a broad range of Telstra services, as well as their use by third parties, impacts on the estimation of cost allocators. A mixed-allocation approach is adopted, whereby costs with respect to these asset classes attributable to third-party access are calculated, with the remaining costs allocated to individual fixed line services on the basis of a general allocator. The CAF within the FLSM adopts the following approach for the allocation of costs for Asset Class CO09 Network Buildings & Support as between fixed line services and "other" uses:First, use of exchange buildings by Telstra is distinguished from use by third parties (NBN Co and TEBA customers). This is done on the basis of rack count information for Telstra, TEBA customers and NBN Co. the use of rack count information provides for reliable, common base of information to apportion costs between Telstra and third parties.

However, the next step in the allocation process is more difficult and requires considerably more granular information in order to determine the uses of Telstra racks by fixed line services and other services and network platforms operated by Telstra.

[196] Draft Decision, p 150.
[197] Draft Decision, p 150.

Telstra adopted a general allocator as at the time the allocation framework was developed there was insufficient data available to practically determine a fully allocated cost allocation for the relevant Asset Class CO09. Each regulated fixed line wholesale service receives an allocation of CO09 costs based on the proportion of costs allocated using the specific allocators in respect of the primary Core FLSM Asset Classes. The methodology for this allocation was described in Telstra's Cost Allocation Framework.

The following table shows the general allocators for the regulated fixed line services with respect to the CO09 Asset Class. Based on the general allocator, [redacted] of CO09 Network Buildings/Support costs are allocated to declared services.

[redacted]

In order to test the reasonableness of this allocation (and the use of the general allocator for this asset class), Telstra has undertaken further analysis to develop a specific allocator for CO09, based on rack usage (given that this appeared to be the primary concern of the ACCC). The specific allocator was developed following a review of all sub-rack usage by different classes of equipment across almost the almost one million installed or in-use sub-racks within Telstra's network.

More detail on the methodology and the data sets is set out in Appendix 9.

Telstra sourced detailed data on network equipment throughout Telstra's network of exchange buildings. This information identified individual equipment to the "sub rack" level and allows for a reliable comparison of the relative usage of Telstra's exchange buildings by different types of network equipment and different network platforms. The descriptions of the sub rack equipment are then used to map to FLSM Asset Classes, and other asset-types that are not part of the fixed line network (for example, HFC equipment, mobile network equipment and types of data equipment not used for the provision of ADSL services).

The total number of sub-racks installed or in-use within Telstra's network, as spread across the FLSM Asset Classes, is set out below. "#N/A" indicates the identified sub racks were out of scope of the FLSM Asset Classes (i.e relate to non-FLSM assets).

[redacted]

Other than PSTN switching equipment, the most common equipment type within Telstra exchanges is equipment (including power and air conditioning equipment) within the CO09 Asset

Class. As the purpose of this exercise is to distribute costs for this equipment (and the broader CO09 asset class), ths sub racks associated with CO09 are distributed proportionally to the other FLSM and non-FLSM asset classes. The result of this distribution process is set out in Table 33 below.

[redacted]

In order to calculate an allocator for CO09 on the basis of the relative space u (as measured by number of sub racks used) used by different services, Telstra relies on the other FLSM Asset Class specific allocators. These allocators are then weighted by the proportion of sub-racks occupied by each FLSM Asset Class and summed to determine the share of CO09 costs attributable to the relevant services.

The cost allocations to the wholesale regulated services for FY2015 from version 2 of the FLSM are set out below:

[redacted]

This calculation process is summarised in Table 35 below.

[redacted]

[redacted]

This analysis, based on a detailed review of all sub-rack usage in Telstra's network, shows that the use of the asset class specific allocators (weighted by the share of the asset class of Telstra's total rack space) to allocate costs from the Network Buildings and Support asset class (CO09) results in [redacted] of those costs being allocated to declared services (as per version 1.2 of the FLSM Model). If the general allocator is used – the share of costs from the asset class allocated to the fixed line services would be approximately [redacted].

That is, the use of the general allocator is reasonable, if not conservative and appears to allocate less cost from this FLSM Asset Class to declared services than the use of a more granular, specific allocator, based on actual sub-rack usage.

7.1.2 Transmission allocator

Telstra's allocators for transmission are accurate, appropriate – and are conservative (i.e. likely to understate the share of transmission costs allocated to declared services). The approach adopted to the allocation of transmission costs in the FLSM results in substantially less costs being allocated to declared services than would be the case if Telstra adopted the same allocation approach used by Analysys Mason in their TSLRIC cost model.

Telstra described the method it adopted to allocate relevant transmission equipment expenditure to the FLSM in its Revised Cost Allocation Framework documentation provided to the ACCC on 24 July 2014. Further detail on the method applied to calculate transmission allocators was provided to the ACCC in the week beginning 13 April 2015 – see *CO05 - Transmission Equipment service platform allocation.xlsx.*

A more detailed overview of the allocation of transmission costs, and a study comparing this with the allocators used in the Analysys Mason model is set out in Appendix 8.

The allocation of transmission expenditure to fixed line services through the CAF is not based on SIOs, but on the relative capacity of services based on information received from Transmission Recording and Control (**TRAC**). The reason that a straight-forward SIO measure is not appropriate for transmission assets because the costs associated with transmission equipment are not closely aligned with individual premises or SIOs. TRAC instead provides information on:

- all the transmission equipment links in use in the network;
- the equipment which transmission equipment is connected to (eg, PSTN switches, mobile base stations, DSLAMs and other data equipment); and
- the bandwidth capacity of the link (eg, 2Mbps, 155Mbps etc).

This information reflects what service the equipment is intended to be used for. This information is summarised in reports and stored in the Network Decision Support Database (**NDSD**).

For the purpose of allocating transmission costs, Telstra converts all transmission links into a standard unit of a 2Mbps-equivalent service. In making this conversion, Telstra has used a capacity factor. The conversion is based upon the capacity of the links (i.e. the number of 2 megabit links that can be aggregated and transported on a higher bandwidth link). For example, a link of 45 megabits has a capacity to carry 21 x 2Mbps links.[198]

Table 36 below shows the 2Mbps-equivalent capacity-based conversion factors used.

Table 36: Capacity of different link speeds (SDH)

	2M	8M	34M	45M	140M	155M	622M	2.5 G	10 G
Weighting based on capacity	1	4	16	21	53	63	256	1008	4032

In practice, this means that the share of costs from the allocated to customers that use higher bandwidth products will be substantially higher than customers using lower bandwidth links (proportional to the greater capacity of the higher bandwidth link).

Intuitively, it is clear that such an approach is likely to overstate the actual cost gradient between different capacity links. In the context of the FLSM, the use of a capacity-based conversion factor will result

A higher proportion of wholesale services involve lower-bandwidth links than retail services (for which Telstra supplies a number of higher-bandwidth, complex data products). This means that the allocation approach that has been adopted in the CAF substantially over-allocates costs to retail services, and under-allocates costs to declared services.

The allocators used in the Analysys Mason model, previously relied upon by the ACCC, did not adopt a capacity approach – but rather an alternative, “cost based” methodology. Analysys Mason recognise that the costs of higher capacity transmission links will not scale in proportion to growth in capacity. This is intuitive as if a higher capacity link were to cost as much as an equivalent capacity collection of smaller links, it would render uneconomic the use of higher capacity, more technically efficient links where that capacity as required. It is obvious that this cannot be the case in practice.

Rather than use a capacity conversion factor, Analysys Mason therefore suggest the use of a cost conversion factor in which the cost of a link will increase 2.5 times for a quadrupling of capacity. In other words, an 8Mbps link would cost 2.5 times as much as a 2Mbps link. Under Telstra’s approach, the multiple is 4 times.

The comparison of 2Mbps-equivalent units using the capacity approach adopted by Telstra and the cost approach adopted by Analysys Mason is depicted in the figure below:

198 [redacted]

Figure 36: [redacted]

[redacted]

The implications of the difference in the 2Mbps-equivalent conversions are important in the context of allocating costs for transmission equipment among regulated fixed line services and non-regulated services. Because PSTN services are regulated and generally use lower capacity links than services that are not regulated, the implication is that Telstra's approach will allocate significantly less cost to regulated services than the alternative, cost-based approach.

As detailed in Appendix 8, Telstra tested the impact of its choice of conversion factor in the context of SDH transmission equipment. The results show that the cost based methodology is less conservative than Telstra's existing methodology because although it allocates less cost [redacted] to ADSL compared with the capacity based methodology [redacted]), it allocates much more cost to the PSTN [redacted] compared to the use of a capacity based methodology ([redacted]). Overall, under the cost based approach, [redacted] of costs is allocated to PSTN and ADSL compared to the allocation of [redacted] under a capacity based approach. This is shown in Table 37 below.

Table 37: [redacted]

[redacted]

The overall impact if the Analysys Mason cost allocation factors were applied to the FLSM is that the costs attributed to the regulated wholesale services would increase by [redacted] dollars over the period FY2016-2019.

8. Demand forecasts

Key points:

- The ACCC has accepted that Telstra's forecasts of demand are reasonable.
- More recent data supports the accuracy of key assumptions underpinning the demand forecasts. In particular, recent data on the rate of customer migration to the NBN is consistent with Telstra's assumptions in this regard.

In its Draft Decision, the ACCC chooses to adopt Telstra's demand forecast for the purposes of setting primary price terms. The ACCC considers both Telstra's pre-NBN and post-NBN forecasts and considers both are reasonable based on the information provided.

Recent data on the rate of customer migration to the NBN further supports the reasonableness of Telstra's demand forecasts and the underlying assumptions. As explained in Box 2 below, the rate of customer migration assumed by Telstra in its Forecast Model is almost exactly the observed rate of migration in recent data.

Box 2: Observed rate of customer migration to the NBN

As explained in the Forecast Model Documentation, [redacted]

Recent data supports the reasonableness of this assumption. Based on new data for [redacted] NBN Co FSAMs that have now passed 12 months post the ready for service date:

[redacted]

The distribution of migration rates among the [redacted] FSAMs is shown below

[redacted]

This suggests that Telstra's assumption regarding the rate of customer migration is very accurate. If anything, this assumption may slightly understate the true rate of customer migration

As noted in the Draft Decision, the ACCC has requested information from Telstra in relation to the basis for its forecasts. Telstra has provided further information in response to the ACCC's requests, and is happy to provide more information if required.

9. Determination of prices

9.1 Price Structure and scope of FOAS and FTAS

In its Draft Decision, the ACCC recognised that geographically de-averaged price for FOAS and FTAS is *more likely* to result in *cost reflective prices* and *reflect cost differences between areas.*[199]

This finding is consistent with the evidence provided by Telstra in its earlier submission, of geographic price differentials by providing data on geographic costs of supply. In summary, Telstra identified the total amount of cost allocated to FOAS and FTAS for 2014-2015 and the key asset classes used to supply FOAS and FTAS (local switching, inter-exchange cables, transmission equipment, and network buildings and support). These were then broken down into CBD, metropolitan, provincial and rural area costs, based on the key cost drivers. These cost differences can be attributed primarily to economies of scale of local switching and network buildings, and the distance between PoI and local exchange.

In its Draft Decision, the ACCC nevertheless considered that a uniform price for these services should be retained in the interests of price stability – consistent with its approach of maintaining existing price structures across all of the Fixed Services.

In its final FAD decision in July 2011, in which the ACCC decided, for the first time, to change the long standing price structure for FOAS/FTAS (previously PSTN OA/TA) from geographically de-averaged pricing to a national average price, the ACCC also noted that:[200]

> *……access seekers and Telstra can negotiate disaggregated prices should they choose to do so. The ACCC notes that, if concerns are subsequently raised due to parties being unable to agree on disaggregated prices, the ACCC may consider whether it is necessary and appropriate to utilise other regulatory mechanisms such as, for example, binding rules of conduct.*

Given the nature of traffic distributions for FOAS/FTAS, there may be limited practical difference in aggregate terms for most access seekers (and Telstra) when considering a nationally averaged FAD price versus the alternative of a disaggregated approach to traffic terminated on Telstra's PSTN. However, where Telstra is the acquirer of FOAS or FTAS terminated on another fixed access provider's network the significant geographic cost differences noted by the ACCC become relevant in the context of FOAS/FTAS pricing charged by non-dominant network.

As noted by Telstra in its submission of October 2014, commercial negotiations of FOAS and FTAS pricing with non-dominant networks have consistently reflected lower network costs in CBD/metro areas where these operators have typically deployed networks. These commercial agreements have continued to be successfully negotiated between Telstra (as an access seeker) and other fixed network providers by reference to the ACCC's longstanding non-dominant network pricing guideline (issued in 2001) (**Pricing Guideline**).

In Telstra's view, the ACCC's position in the Pricing Guideline was that the efficient price of PSTN OTA supplied by non-dominant network providers should not be above the disaggregated regulated price pertaining to supply of that service by a dominant network provider, but in circumstances where a non-dominant PSTN network has costs significantly lower than those of Telstra's due to factors such as the specific nature of the service they provide, the ACCC may assess these instances individually, and determine whether an argument exists for looking specifically at the costs of the particular services of the non-dominant network.

Based on the Pricing Guideline, the de-averaged OTA price for CBD and metropolitan areas (as it then was) would form the upper bound for non-dominant operators, and the Pricing Guideline

[199] Draft Decision, p 168.
[200] ACCC, *Inquiry to make final access determinations for the declared fixed line services,* July 2011, p 108.

explicitly recognises that the efficient costs of providing such services by a non-dominant provider may in fact be lower.

Given the ACCC's recognition that costs are likely to vary in different regions, if a non-dominant operator (inconsistently with the ACCC's previous Pricing Guideline) did seek to impose a FOAS/FTAS price at the nationally averaged price reflecting Telstra's costs of supplying these services across different geographies, this would likely be above the efficient costs of supply for that operator. In practice Telstra's expectation is that existing commercial arrangements with non-dominant operators will continue to be reflective of the lower costs of supplying FOAS and FTAS on non-dominant CBD and metro-only networks. However, in the (hopefully unlikely) event that, contrary to longstanding commercial practice, non-dominant network operators did seek to charge prices significantly above their costs in CBD and metro areas, then Telstra believes the ACCC's guidance from its 2011 Fixed Services FAD decision would continue to stand as a possible fallback: *"if concerns are subsequently raised due to parties being unable to agree on disaggregated prices, the ACCC may consider whether it is necessary and appropriate to utilise other regulatory mechanisms…".*[201]

9.2 Approach to adjustment of prices

Telstra agrees with ACCC's Draft Decision to maintain existing inter-service price relativities and apply any required price change as a one-off uniform adjustment across all services. For reasons set out in Telstra's October submission, we consider that this approach would best promote the LTIE.

9.3 Mid-term review

Telstra submits that the expiry dates for each of the replacement FADs should be 30 June 2019. This would closely align the expiry of the FADs with the expiry dates for each of the declarations (except WDSL, which has an earlier declaration expiry date). This would mean a term for the replacement FADs of four years.

Telstra considers that it is appropriate to set pricing for a longer period (compared to the 2011 FADs) to provide all industry participants with certainty regarding fixed line prices during the transition to the NBN. A shorter period would not provide the regulatory certainty and price stability that is necessary to promoting the LTIE. In its Draft Decision, the ACCC has recognised the need for pricing stability in the transitional period to the NBN.

Telstra also considers that the FAD should not contain a mid-term review. The potential to re-open pricing mid way through the term of the FADs would undermine the need to provide price stability for the transitional period to the NBN, and would be contrary to the LTIE.

Telstra acknowledges that there may be more uncertainty around longer-range forecasts of demand and expenditure. However, Telstra has developed a fully integrated Forecast Model, based on a bottom-up forecasting methodology, and considers that this model provides a robust view of demand and expenditure requirements out to FY2019, and is flexible enough to accommodate changes to exogenous factors which may affect demand and expenditure over this timeframe (particularly changes in the NBN rollout plan or migration timetable).

For these reasons, it is in the LTIE to have a four year FAD term with no mid-year review.

9.4 Modelling of price changes

Telstra is aware that modelling of required price changes is complex and potentially subject to modelling or input errors. We would therefore encourage the ACCC to be as transparent as possible around any proposed modelling adjustments, and the calculation of price adjustments.

[201] ACCC, *Inquiry to make final access determinations for the declared fixed line services,* July, 2011, p 108.

Telstra is concerned that the modelling underpinning the Draft Decision prices was not sufficiently transparent. Telstra has found it difficult to identify all changes made by the ACCC to the FLSM and impact of these changes on prices.

Telstra has identified at least two modelling errors, which are described below. In order to minimise the risk of further errors in determining final prices, we encourage the ACCC to be as transparent as possible around its approach to the modelling of price changes, and to allow time for appropriate review of modelling changes.

9.4.1 Error in the calculation of tax liabilities

In the FLSM v2.0 which the ACCC used for the Draft Decision, the calculation of the tax liabilities includes an error in the interest rate applied to the debt.

In the sheet 10. Tax Liabilities the calculation of the interest on debt refers to the named cell Cost_of_debt. This named cell refers to the Nominal cost of debt in table 1.1.2 in the sheet "1. Economic Parameters", and is applicable to the period FY2012-2014.

The ACCC updated the values in the sheet "1. Economic Parameters", and have included values for the period FY2015-2019, including revising their estimate of the nominal cost of debt from 7.30% to 3.52%.

The calculations for the interest on debt in the sheet "10. Tax Liabilities" for each of the years FY2015-2019 should refer to the revised estimate of the cost of debt, however they are still referring to the named cell Cost_of_debt.

Changing the formulas in cells M204-Q204 and M206-Q206 to refer to the revised estimate results in a decrease in the nominal interest of [redacted] over the 5 years, and this flows through to an increase in the nominal tax allowance included in the Revenue Requirement of [redacted] over the same period. The total revenue requirement used by the model to calculate new prices increases by [redacted] and this means instead of a decrease of 0.7% overall the result would be an increase of 0.3%.

9.4.2 Error in application of inflation indices

The ACCC appears to have applied inflation values and indices inconsistently through the FLSM. In some places the static value for inflation used in the WACC calculation is referenced in a formula, while in other places the cumulative inflation index table is referred to, and on occasion the static value for inflation used in the WACC calculation for the previous period is used.

For example, in the sheet '8. RAB Roll-forward', in table 8.3.1, the static inflation rate (i.e. that used in the WACC) is used to appreciate the land assets. That is, the 2012-2014 static rate of 2.55% is used to inflate land from FY2009 each year to FY2014. The updated static inflation rate is then used to inflate land FY2015 to FY2019.

10. Application of SAOs to CBD areas for WLR and LCS

Telstra is disappointed with the ACCC's decision to cease geographic exemptions and apply standard access obligations (**SAOs**) to CBD areas for WLR and LCS. This decision is not based on an evidence-based review of market structure in CBD areas, and has relied on an inappropriate linkage between Building Block Model (**BBM**) pricing outputs and market prices to infer market failure. The ACCC should have determined whether setting prices was in the LTIE by undertaking a substantive review of market dynamics in CBD areas.

Telstra's previous submission (dated 15 October 2014) outlined the framework it believes should be applied when considering whether to limit the application of the SAOs under s152BCA of the Act. This submission highlighted that reliance on prior decisions was not sufficient on which to base the making of an FAD, and that any reasonable approach to applying the LTIE in the context of the current FAD process requires the ACCC to re-examine the relevant issues. In considering this FAD it is clear that the ACCC has not conducted the appropriate analysis.

10.1 The ACCC's decision to cease exemptions for CBD WLR/LCS from the SAOs

In its final Fixed Line Services Decision (2014), the ACCC decided to vary the WLR and LCS service descriptions to remove the existing exemptions in CBD areas. In justifying its decision, the ACCC argued that "…*the removal of the CBD exemptions will provide end-users with additional choices in terms of service provider and increased competition in retail service dimensions. Access seekers will be able to compete more effectively with Telstra to offer competitively priced products to end-users*."[202]

The ACCC cited the following reasons for its views:

- In its view – and on the basis of imputation testing it performed – the price of CBD WLR is excessively high so as to interfere with access seekers' opportunity of generating an appropriate margin in downstream retail markets.[203]

- In its view there are a large number of customers for voice-only services in CBD areas[204] and no effective substitutes to WLR for supplying copper-based voice only services. It consequently rejected the argument that – because competition is increasing (with Telstra's market share eroding) – there is no need to regulate WLR in CBD areas.[205]

In the ACCC's view, the following were not considered to be substitutes for WLR or copper based services in CBD areas:

- ULLS was not considered to be a substitute for WLR in cases where only a small numbers of services to a particular premise are demanded, as economies of scale are required for ULLS-based supply to be economically feasible.[206]

- Fibre networks were not considered to be substitutes for copper-based services because they are generally available in different areas to copper-based services. It considered that the presence of fibre networks is not sufficient to demonstrate competition is effective in CBDs nor to supply full range of substitutes including for enterprise and government services.

- IP services were not considered to be substitutes for PSTN voice services (including small business use such as EFTPOS) because the cost of replacing existing equipment with IP-based customer equipment is still sufficiently significant to deter end-users from shifting to IP-based systems.

[202] ACCC, *Public inquiry into the fixed line services declaration*, April 2014, p 40.
[203] Draft Decision, p 190.
[204] ACCC, *Public inquiry into the fixed line services declaration*, April 2014, p 43.
[205] ACCC, *Public inquiry into the fixed line services declaration*, April 2014, p 43.
[206] Draft Decision, p 190.

The ACCC considered that there would be competitive benefits from removing CBD exemptions, specifically that the commercial WLR price will no longer hold up retail voice line rental prices in CBD areas and that competition in the national markets for voice services and bundled voice and broadband services for businesses that require a "whole of business" offering will be promoted.[207]

10.2 Market evidence does not support the decision to revoke CBD exemptions

Telstra considers that the reasons for the ACCC's decision to revoke CBD exemptions for WLR and LCS are not soundly based. The reasons provided by the ACCC are considered in turn below.

10.2.1 ACCC view that imputation testing shows that the markets for WLR and LCS in CBD ESAs are insufficiently competitive

The ACCC appears to believe that for competition to be effective, the commercial price of the WLR should be driven down to at least the regulated price (if not a cost-based price). However, the ACCC's argument that Telstra's prices are above the regulated prices due to excessive market power fails to explain why Telstra has not changed its prices since 2005. Since then, Telstra's prices have declined in real terms. As the independent expert report commissioned from Mr Alex Sundakov points out, the fact that Telstra has left long term prices for WLR and LCS unchanged would seem inconsistent with a firm wielding significant market power.

The likely cause for the price difference between CBD and other areas is that Telstra's loss of market share is resulting in increasing average costs of supply. This view is supported by the evidence Telstra has provided to the ACCC of declining WLR SIOs in CBD areas.[208] Strong infrastructure-based and ULLS-based competition has resulted in a decline in the use of Telstra's retail-line rental and WLR in CBD areas at levels above the national decline in the past three years ([redacted] whilst ULLS use increased over the same period by [redacted]

A major concern with the ACCC's approach is that an imputation analysis cannot substitute for a proper evidence-based market review and competition analysis. If these were undertaken, Telstra considers that WLR and LCS cannot reasonably be considered an essential facility or an enduring bottleneck in CBD areas as access seekers have a choice of multiple alternative wholesale inputs within CBD areas and there are a wide range of alternative end-user services that are available alongside WLR-based services.[209] This is discussed further in 10.3 below.

10.2.2 ACCC reasoning on basis of customers for voice-only services in CBD areas

Another reason for the ACCC's decision is that there is a large pool of voice-only customers in CBD areas. However, the ACCC appears to have misinterpreted the data regarding the number of voice only SIOs. The true extent of "voice only" is better proxied by the number of "voice only" premises, which is significantly lower than the number of voice-only SIOs. Reliance on this latter figure – which is extracted from Telstra's CAN RKR and hence does not include alternative, fibre networks – risks significant regulatory error. As there are only [redacted] premises in CBD areas with only a single PSTN line supplied to it, [redacted] of total "voice only" SIOs (residential or business, retail and WLR) it is difficult to determine that "voice only" is a true characterisation of the needs of the CBD end user.[210] Further, the term "voice only" is a misnomer as the use of the underlying service is unknown and may include EFTPOS, facsimile, security alarms and elevator telephones.

---

[207] ACCC, *Public inquiry into the fixed line services declaration*, April 2014, pp 40-41.
[208] Telstra, *Letter to Mr Michael Cosgrave*, November 2013.
[209] Telstra Corporation Limited, *Fixed Line Services FAD inquiry on price and non-price terms and conditions, submission on the Application of the SAOs for WLR/LCS in CBD Areas,* October 2014, p 25.
[210] Telstra Corporation Limited, *Fixed Line Services Review: Response to the ACCC's Draft Report on the Declaration Inquiry*, February 2014, pp 14-15.

10.2.3 ACCC's substitution analysis

The ACCC's view that there is a lack of substitutes for WLR or copper based services in CBD areas is incorrect. For the following reasons, Telstra considers that the CBD markets are highly competitive with a number of substitutes to WLR and copper based services.

First, the ACCC claimed that ULLS is not a substitute for WLR in cases where only a small number of services are demanded due to lack of economies of scale. However, CBD ESAs contain a significantly larger addressable market than other ESAs. On average CBD ESAs are approximately 37 per cent larger in terms of active PSTN (including ULLS) SIOs than Band 2 ESAs ([redacted]). The number of active PSTN SIOs (not including ULLS) in CBD ESAs ranges from [redacted]. It should be noted that the significant presence of alternative, fibre-based networks within CBD ESAs means that these data understate the true size of the addressable market – particularly for those service providers operating their own network infrastructure.

Second, Telstra does not agree with the ACCC's view that fibre networks are not a substitute for PSTN voice services because, it claims, they are generally available in different areas. Competitive IP-based services operate as full substitutes to traditional PSTN voice services including WLR and LCS in CBD areas. The data that the ACCC relies upon appears to be derived from the CAN RKR, which provides only a partial snapshot of the services that are available. Given the presence of extensive fibre infrastructure in all of the CBD ESAs – between [redacted] fibre providers in each of the 16 ESAs – the ACCC cannot ignore the alternatives that can be (and are being) delivered by that medium.[211] Similarly, there is overwhelming evidence of DSLAM-based supply within CBD areas and its impact on competition. As at June 2014, there were on average [redacted] DSLAM-based competitors in each CBD ESA.

Finally, in addition to competitive fibre providers, Telstra supplies fibre-based DTCS tails to CBD premises. Starting at 2 Mbps, these services can supply multiple voice channels using protocols ranging from SIP trunks through to ISDN emulation. This means there are also regulated fibre alternatives (DTCS) in CBD areas.

10.3 It is not in the LTIE to regulate WLR and LCS in CBD areas

Any declaration should be limited to areas where there is an essential bottleneck facility to be regulated. To do otherwise is contrary to the LTIE. As Professor Stephen King points out, based on first principles, ex-ante access regulation is only likely to be in the LTIE where there is an enduring bottleneck.[212] A facility or service is only a bottleneck if it is a necessary natural monopoly input into the production process of a firm to compete in a downstream market. A natural monopoly exists where at all levels of production it is more efficient to have one supplier of a service.[213]

Strictly, a bottleneck service exists only if it satisfies two economic tests:[214]

- It is used to manufacture a specific good or service and there must be **no alternative input or process** which enables a competitor to produce an equivalent final good or service at a comparable cost; and

- There must be **no alternative, substitutable final good or service** that can be manufactured and sold at a comparable price without using that input.

[211] Infrastructure RKR data for September 2013 shows an average of over 8 fibre owners with CBD ESAs (compared with under 4 in Band 2 ESAs where 2 or more fibre owners are present).
[212] King, *National Competition Policy,* 1997, p 273.
[213] This is also referred to as the "uneconomic to duplicate" test. See for example ss. 44H(4)(b) of the *Competition and Consumer Act 2010* (Cth).
[214] King, *National Competition Policy,* 1997, p 273.

If both tests are met,[215] then an economic problem that may justify access regulation exists. If only one or none of the tests are not met, then there is no structural impediment to competition and no economic basis justifying the imposition of regulation. This is because, if one or both of the tests are not met, "*the owner of the essential facility* (bottleneck) *is constrained from exercising monopoly power due to direct competition from substitutes or indirect competition because substitutes exist to products that use its input.*"[216]

In practice, this means that the two economic tests, which focus on the existence of substitutes, determine the circumstances in which regulation will or will not enhance competition and the LTIE. As Telstra argued in its October 2014 submission, the WLR and LCS in CBD ESAs do not satisfy either of these tests because there are multiple substitutes available which can enable competitors to provide the final product- a standard telephone call – at a cost comparable to Telstra. As discussed, these substitutes include IP-based voice services, fibre networks and ULLS voice services.

In contrast, and rather than conduct a proper application of the competition framework, the ACCC view of competition appears, at least in part, to be based on the fact that due to the rollout of NBN voice services at some point in future, there is unlikely to be further investment in CBD copper services. In its Final Fixed Line Services Decision, the ACCC noted the slowing investment in exchange equipment since 2009 and the reduced incentives to invest in infrastructure due to the NBN rollout:[217]

> *…the ACCC notes that, since 2009, access seekers' investment in copper-based exchange equipment has slowed significantly. This is largely due to the rollout of the NBN, which has reduced the incentives to invest in copper-based infrastructure such as DSLAMs, which will become redundant when the NBN is rolled out. There is a greater risk that access seekers may be unable to receive an adequate return on such investment.*

As the ACCC rejects the substitutability of IP voice services at least until the NBN rollout is complete, it considers that regulation of CBD copper services is required to address Telstra's significant market power in an ex post manner. However, as noted above, Mr Sundakov's independent expert report observes that Telstra has left long term prices for WLR and LCS largely unchanged, which would seem inconsistent with a firm wielding significant market power.

The transition to the NBN is a unique event both technologically and temporally, and CBD WLR and LCS services should be seen in that context. The NBN is set to strand copper-based services and this means that there is reduced incentive to invest in copper-based fixed line services as services transition to IP-based networks in the next few years. The amount of spare capacity on installed copper-based competitive infrastructure shows that installing additional DSLAMs would not be rational for access seekers. As the ACCC notes underinvestment can result "…*particularly when firms consider there is a risk that they may not be able to recover sunk costs*."[218] For instance, DSLAMs in CBD ESAs have [redacted] spare capacity. Economically efficient use of that already installed infrastructure would argue for the utilisation of that excess capacity through ULLS/LSS based service offerings rather than under-utilisation encouraged by low prices for WLR set by regulation.

This stands in contrast with other services. For example, in the case of transmission services, Telstra faces ongoing infrastructure-based competition not just from substitutes such as BigAir but from other optic fibre infrastructure. The NBN will not strand this technology and consequently there continues to be strong incentives for transmission providers to compete vigorously and to continue investing in their infrastructure.

---

[215] A third relevant test is that the relevant market is **not** perfectly contestable. See Chapter 11 in Martin, *Advanced Industrial Economics*, 1993.
[216] King, *Report on essential facilities, access regulation and value-added wholesale services on the NBN*, August 2013, p 7.
[217] ACCC, *Public inquiry into the fixed line services declaration*, April 2014, p 34.
[218] Draft Decision, p 9.

However, it appears counter-intuitive that as the fixed services market becomes more competitive and PSTN services are moving beyond maturity and increasingly being substituted by IP based telephony as the market embarks on its migration to the NBN, the ACCC has decided to re-regulate such services in CBD areas. It would be a counter-productive result if regulation were to have the effect of retaining legacy technologies.

The CBD exemptions over the past decade (prior to the ACCC's final declaration decision in 2014) have proven correct by the ACCC and have promoted substantial investment in infrastructure-based competition. When coupled with real price reductions in Telstra's WLR and LCS charges, these show that there is no basis for removing the CBD exemptions as we approach the twilight of the PSTN lifecycle.

10.4 Conclusion

Telstra disagrees with the ACCC's Draft Decision to revoke the WLR and LCS exemptions in CBD ESAs. The ACCC has based its decision on grounds which Telstra considers to be incorrect. The set of market evidence available does not support the ACCC's Draft Decision. Specifically, the availability of substitutes such as fibre networks, the significant number of competitors and the small market for voice-only services in CBD ESAs are all strong reasons for continuing (or reinstating) the WLR and LCS exemptions. So too does the proper application of the competition framework in determining whether regulation is warranted. Consequently, Telstra urges the ACCC to reconsider its decision and provide for CBD SAO Exemptions unconditionally. Telstra's alternative submission is that the ACCC should provide for the CBD SAO Exemptions to be subject to additional conditions and limitations, to ensure that the SAOs only apply to the extent required to meet the statutory criteria.

In Telstra's view, given the inherent competitiveness of CBD areas and the long term benefits regulatory forbearance has achieved over more than a decade, the ACCC should carefully consider the case for excluding WLR and LCS in CBD areas from regulated pricing pursuant to section 152BC(3)(h). If the ACCC does not believe an unconditional exemption for WLR/LCS services in CBD areas is appropriate for whatever reason, it should also consider possible conditions and limitations under paragraph 152BC(3)(h)(ii)[219].

[219] For more detail in relation to relevant case law refer to Telstra Corporation Limited, *Fixed Line Services FAD inquiry on price and non-price terms and conditions, submission on the Application of the SAOs for WLR/LCS in CBD Areas,* October 2014, Appendix.

Appendix 1: Updated explanation of ITS and TSO expenditure derivation from the General Ledger

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

IT'S HOW WE CONNECT

[redacted]

220 *Refers to direct expenditure categories, ** refers to indirect expenditure categories

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Appendix 2: Preliminary investigation of additional potentially relevant Telstra network costs not included in FLSM Assets Classes

In responding to the 2013 BBM RKR and in later developing its FLSM operating expenditure forecasts, Telstra only assessed the costs incurred by two of its eleven business units - Telstra Operations and Telstra Wholesale. This has been done for two reasons.

First, the process of assessing Telstra's expenditure information in order to accurately determine FLSM operating expenditure is extremely complex and requires significant input from various subject matter experts both in finance and in the broader business. The FLSM requires operating expenditure to be relevant to only part of Telstra's overall business (the provision of fixed line services and the operation of the fixed line network) as well as requiring operating expenditure information to be disaggregated among the 22 FLSM Asset Classes where possible. This information is not readily available in a systematic and complete way from Telstra's financial systems.

Second, Telstra formed the view that the significant majority of expenditure relevant to the FLSM was likely to be incurred by the Telstra Operations and Telstra Wholesale BUs. This reflects the relative size of these two BUs (these two business units incurred approximately [redacted] in operating expenditure in FY2014, which represents approximately [redacted] of Telstra's total for FY2014) as well as the relevance of their activities to the FLSM.

Telstra believes that by focusing only on these two business units, it has adopted an approach which is prudent and conservative, given the complexity of the analysis and resources required to assess the other nine business units.

Accordingly, the purpose of this study is to provide an indicative analysis of the materiality of this conservative assumption – by trying to identify and estimate some of the potential costs outside of Telstra Operations and Telstra Wholesale which could be relevant to the FLSM Asset Classes, but which have not been included.

Methodology

In undertaking this study, the following methodology has been adopted:

- **Data gathering** – a report was prepared by Telstra Finance that disaggregated expenditure within Telstra's entire General Ledger by high level activity (as indicated by an expenditure line items Activity Based Management (ABM) code) for FY2014. These expenditure data were also disaggregated by the Telstra BUs, such that expenditure across each high level activity was distributed across BUs where the GL recorded expenditure as being incurred by a particular BU for a particular activity.

  Activity codes in which expenditure was recorded against Telstra Operations was identified on the basis these expenditures are likely to be relevant to the FLSM. The GL report was then used to identify instances where BUs other than Telstra Operations or Telstra Wholesale incurred expenditure against these identified activities.

  For the purposes of this preliminary analysis, we have focused on the FLSM related costs in respect of the following two business units:

  - Telstra Retail
  - Global Enterprise & Services.

- **Data summary** – the FY2014 General Ledger data for these two business units has been summarised to illustrate the potential that costs which could be relevant to the FLSM have been excluded from Telstra's forecasts as they are incurred by BUs other than Telstra Operations and Telstra Wholesale.

FY2014 General Ledger data analysis

The relevant Telstra networks related General Ledger data of costs for FY2014 for the two selected business units is set out in the following table.

[redacted]

[redacted]

Conclusion

Based on high level activity code information, just over [redacted] in costs related to Telstra Operations activities were incurred by the Telstra Retail and Global Enterprise & Services Group BUs for FY2014:

- Telstra Retail [redacted]
- Global Enterprise & Services Group [redacted]

This study is not definitive. A more thorough analysis is required to determine if all of the costs identified are relevant to the FLSM or what proportion of the identified costs are relevant. However, given the descriptions of the activities identified it is very likely that significant proportion of the identified costs would be relevant to the FLSM. The following table sets out the top 20 activities by total cost incurred across Telstra Retail and Global Enterprise & Services. For clarity, the process/activity code information has been removed from the activity description:

[redacted]

[redacted]

Based on the descriptions within the table above, it is highly likely that a significant proportion of this identified expenditure would be relevant to the FLSM.

Although this study cannot be determinative with respect to these costs, the results provide strong evidence that the approach adopted by Telstra in only assessing costs incurred by Telstra Operations and Telstra Wholesale is conservative and is likely to understate the actual costs incurred by Telstra that are attributable to the FLSM.

Appendix 3: Alternative approach to the estimation of Networks Costs

Outline of the Process

The Networks LOB within Telstra Ops is responsible for the planning, design, deployment and performance of Telstra's access, core and service enabling networks, including the fixed line network CAN and Core.

In FY2014, Networks total operating expenditure was [redacted]

Using an alternative approach to identify FLSM related networks expenditure (referred to here as Approach B), the operating expenditure incurred by Networks attributable either to the relevant FLSM Asset Classes, or otherwise attributable to the provision of the fixed line services for FY2014 is [redacted]. This represents a difference of [redacted] from Approach A (which was used to establish the opex base year (FY2014) and basis for forecasts in the October 2014 submission). In addition to this ABM-based cost, there are [redacted] of accommodation expenses which are the same between the two approaches.

The following table sets out the Networks input values for FY2014 for the FLSM FY2015-2019 version 1.2 (excluding electricity and general accommodation costs which remain constant in both Approach A and B):

[redacted]

[redacted]

In isolating relevant Networks operating expenditure for FY2014, Telstra has undertaken a detailed, bottom-up analysis of direct and indirect operating expenditure incurred in FY2014:

- Operating expenditure by activity types is extracted from the General Ledger on the basis of Activity Based Management (**ABM**) codes, disaggregated by the asset, product/service or process to which the activity relates.

- Using the ABM codes and the ACCC's FLSM Asset Class Mapping (See Annexure 4 of Opex Explanation), Telstra identified expenditure activity by *asset* and *products/services* in the provision of fixed line services.

- Expenditure related to assets and products/services, as well as costs associated with recoverable damages and network usage fees constitute **direct operating expenditure**.

- Networks operating expenditure attributed to processes (and not attributed to either assets or products/services) is then assessed to determine those costs that constitute common support costs across Networks. These cost categories can be characterised as **indirect operating expenditure**. These common costs pertain to all of the groups within the Networks LOB.

- Indirect operating expenditure was included on a proportional basis. For all groups within Networks (except Networks ED Office) that incur direct operating expenditure attributable to fixed line services, the proportion of total direct operating expenditure incurred by these units relevant to the FLSM is applied to that unit's indirect operating expenditure to determine the allocation to the FLSM. As the Networks ED office is responsible for all of the individual groups within Networks, the proportion of indirect expenditure related to the FLSM for this office is the same as the proportion of FLSM related direct expenditure of all groups. Total expenditure for the Networks ED office was [redacted]. Telstra apportions almost [redacted]) as FLSM related.

- Lastly, adjustments are made to remove propex. In the case of propex, these costs are separately estimated through the capital expenditure forecasting process and so propex costs set out within the general ledger for Networks are removed to avoid double counting.

The following table provides a breakdown of the relevant contributions of the above steps:

[redacted]

The following sections provide further detail on the identification of relevant operating expenditure for Networks.

(a) Identification of direct operating expenditure relevant to the FLSM

As set out above, data for direct operating expenditure was sourced from Telstra's general ledger (using extracts generated by the Hyperion system). Data in Telstra's general ledger is grouped via a series of general ledger Codes called ABMs. These GL codes provide information on the underlying costs in two ways: first by identifying the activity-type to which the cost relates and second, by identifying the asset, product/service or process to which the activity is applied.[221]

ABM codes enable the identification of Networks operating expenditure as either:

- *Direct operating expenditure relevant to the FLSM Asset Classes* – those expenses which relate to the fixed network and thus, were necessary to provide fixed line services. Only those ABMs linked to an asset were able to be directly mapped to the FLSM asset categories.

- *Indirect operating expenditure* - Indirect cost for the Networks LOB include training for field staff, management and other overheads. These are indirect costs that are specific to this line of business (i.e. they are not costs that are shared with other lines of business). As indirect activities are common to fixed line services and non-fixed line services, their costs are allocated based on the ratio between direct FLSM related expenses and "other" expenses. For the Networks ED office, the proportion of indirect expenditure related to the FLSM for this office is the same as the proportion of FLSM related direct expenditure of all groups. Total expenditure for the Networks ED office was [redacted]. Telstra apportions almost [redacted]) as FLSM related.

- All other operating expenditure is classified as "other". It is necessary to categorise expenditure in this way to appropriately apportion indirect expenses to the relevant asset classes. This is explained in detail in the section "Indirect Operating Expenditure."

[221] See Opex Explanation, Figure 4, p 15 for further detail.

Expenditure identified as direct operating expenditure relevant to the FLSM Asset Classes is captured, with non-relevant direct expenditure ignored. A separate process is then used to determine the relevant proportion of indirect Networks operating expenditure that should be included within the FLSM operating expenditure (see section (f) below).

The following table sets out the distribution of Networks operating expenditure by cost attributed to assets, products/services and processes/other as categorised by ABM codes within the general ledger.

[redacted]

(b) **Direct Operating Expenditure related to assets**

In order to map expenditure within the general ledger to the FLSM, the ACCC FLSM Asset Class mapping[222] was used to identify expenditure on relevant assets (as indicated within the ABM codes). The following table sets out by two-character asset category, Networks expenditure on FLSM Asset Classes and non-relevant asset classes.

[redacted]

[222] Opex Explanation, Annexure 4.

[redacted]

Note, the Asset Class "Satellite" (XT) is not explicitly listed as an FLSM Asset Class. Costs associated with the XT asset category support the provision of wholesale and retail basic access services in remote areas (USO satellite services) and provide PSTN backhaul for remote islands and are therefore relevant to the FLSM. Costs associated with the XT asset categories are distributed across CAN Radio Bearer Equipment and Core Radio Bearer Equipment.

In addition to identifying relevant expenditure by Asset Class, the ABM codes also set out the activity related to the relevant expenditure (e.g. disaster remediation, fault, fault overhead, network lifecycle management, network management, proactive maintenance and retirement). The following table sets out a breakdown of asset-related expenditure by activity-type grouping for FLSM Asset Classes:

[redacted]

(c) **Identifying relevant direct operating expenditure by product/service information**

Not all Networks activities and expenditures are written against a particular asset category within the general ledger. This is for a number of reasons, such as field service technicians not selecting an asset when reporting a completed ticket of work, but rather recording their activity against the service to which their activity was directed. For example, the repair of a copper fault can be recorded as a fault repair activity related to the copper cables; however the service technician may record this activity as a fault repair related to a basic access service. Expenditures will also be attributed to products/services where a particular item of operating expenditure is not considered to directly impact on an underlying asset, but rather relate to the service supplied over network assets.

For the purposes of determining relevant direct and indirect operating with respect to the FLSM Asset Classes, as required under the Building Block Model Record Keeping Rule (**BBM RKR**), Telstra has included Networks expenditure (excluding accommodation and electricity expenses which are as per previous model) attributed to relevant fixed line products and services.

As for ABM codes where costs are attributed to assets, where an ABM code attributes expenditures to a particular product or service, the code also indicates the activity that is driving that expenditure. The following table sets out the distribution of Networks expenditure by activity type that is attributed to FLSM relevant and other products within the general ledger.

[redacted]

The following table sets out Networks expenditure by product/service where identified within the General Ledger and identifies those products/services considered relevant for inclusion within the FLSM operating expenditure estimates. Note, the following table excludes costs for Fault Reporting activities.

[redacted]

[redacted]

[redacted]

From the above table, seven services are identified as relevant for the purposes of recognising costs relevant to the FLSM:

- Big Pond ADSL;
- ACCESS LINES;
- UNCONDITIONAL LOCAL LOOP;
- ISDN 10/20/30 Access;
- Wholesale DSL Internet Grade;
- ISDN 2 Access; and
- Spectrum Sharing Service.

These services represent the relevant retail and wholesale services provided over the fixed line network.

The following table sets out Networks expenditure attributed to these products by broad activity type.

[redacted]

[redacted]

In order to map FLSM relevant product and service costs to FLSM Asset Classes, the following process is adopted:

- The allocation rules within the Cost Allocation Framework (CAF) for the FLSM are used to identify for each relevant service the range of FLSM asset classes to which a cost may be allocated.
- Expenditure on different activities for a given service is then distributed across the range of possible Asset Classes on the basis of the distribution of Networks expenditure attributed directly to those Asset Classes.

The distribution of expenditures is undertaken separately for fault-related activities, installation-related activities and other activities. The following table sets out the proportion of Networks operating expenditure on assets (by activity type).

[redacted]

The results of applying the distribution of activity-related costs to FLSM Asset Classes set out in Table 46 for each of the relevant FLSM products are set out in Table 47. This table sets out Networks operating expenditure attributed to the relevant FLSM products, by FLSM Asset Classes and activity types:

[redacted]

The following table provides an alternative cut of the above data, showing the distribution of costs attributed to each of the relevant FLSM products by FLSM Asset Classes:

[redacted]

[redacted]

(d) **Recoverable Damages**

Costs related to recoverable damages are identified within the general ledger under the ABM process codes “RDS” and “RDL”, these process codes are not attached to either products or assets, with a “000” suffix attaching to these codes.

In FY2014, Networks incurred [redacted] in costs related to recoverable damages that could be attributed to fixed line services.

Costs associated with recoverable damages are related to third party damage to the Telstra network – this generally impacts on CAN assets and is related to activities such as building and development, excavation, and other activities that can damage copper cable, duct and conduit and fibre optic cables.

Although these costs are not linked within the general ledger to a specific product or service, subject matter experts within Telstra Operations and Finance consider that all of these costs relate to fixed line network external plant and equipment, specifically CAN Copper Cables, CAN Ducts and Pipes, CAN Other Cables and Inter-exchange Cables.

Telstra has distributed recoverable damages costs across the above FLSM asset classes. In distributing these costs, the distribution of costs for fault related activities was used (see Table 46). The following table sets out recoverable damages costs by FLSM Asset Class.

[redacted]

[redacted]

(e) **Network Usage Fees**

In FY2014, Networks incurred [redacted] in costs related to network usage fees. Of this, [redacted] relates to network usage fees for satellite to support USO telephone services and backhaul for remote islands, which is attributed to FLSM. The remainder predominantly relates to BigPond Satellite and offshore networks which are out-of-scope of FLSM.

[redacted]

As the FLSM building block model does not include satellite asset class, the satellite network usage fee has been booked against the Radio Bearer Equipment Asset Class, which is then distributed between CAN and CORE. The table below shows the network usage fees per asset class.

[redacted]

(f) Indirect operating expenditure incurred by Networks

As Telstra Operations have responsibility for the fixed network and other networks (i.e. mobile), some common expenses are incurred across all networks and therefore need to be apportioned accordingly. Indirect expenses refer to those activities such as contract management, field overheads, logistics, network management and network planning activities.

The following table sets out Networks costs that are not attributed to either a specific asset or a product or service. These costs include recoverable damages (that are distributed to Asset Classes and treated as a direct cost), network usage fees, out-of-scope costs (costs that do not constitute common overhead and process costs) and relevant indirect costs, which are costs that constitute common expenses incurred across the networks and services supported by Networks LOB.

[redacted]

[redacted]

In order to determine the proportion of relevant indirect expenditure to be allocated to the FLSM, the following process was undertaken:

Networks operating expenditure data are categorised on the basis of:

- Relevant indirect costs (A);
- FLSM attributable direct costs (B) – being the sum of FLSM attributable asset related, product related, recoverable damage costs and network usage fees; and
- Out of scope process related costs (i.e. costs attributed to process/other within the GL that are not considered relevant indirect costs) and asset and product related costs not attributable to the FLSM (C).

These costs are then disaggregated among the different operating groups within Networks. This is done to determine a reasonable proportion of relevant indirect operating expenditure to be attributed to the FLSM.

In order to determine the proportion of relevant indirect expenditure attributable to the FLSM, the FLSM attributed direct costs (B) are divided by the sum of those costs plus out of scope costs (C) for each organisational unit/group (i.e. (E) = (B)/((B)+(C))). This proportion (E) is then multiplied by the relevant indirect operating expenditure incurred by each respective organisational unit/group within Networks (A) (with the exception of Networks Executive Director (ED) Group Office) to determine the proportion of these indirect costs to allocated the FLSM (F). This proportion is then allocated to the FLSM as an indirect operating expenditure (see Table 53 below):

Table 53: [redacted]

[redacted]

As the Networks ED Group Office is responsible for all groups, the proportion of indirect expenditures related to FLSM for this office is the same as the proportion of FLSM related direct expenditures of all groups.

Table 54: [redacted]

[redacted]

From the above two tables, the total indirect cost allocated to FLSM is [redacted]:

Table 55: [redacted]

[redacted]

(g) **Summary of Networks operating expenditure**

The preceding sections set out the processes and decisions made by Telstra in determining relevant operating expenditure with respect to the FLSM asset classes, either on a directly attributable basis or an indirect basis. Note, the above processes do not reflect the adjustment due to propex.

The following tables sets out the direct and indirect operating expenditure driven by the provision of fixed line services in relation to Assets, Products, Recoverable Damages and Network Usage Fees.

Table 56: [redacted]

[redacted]

Table 57: [redacted]

[redacted]

[redacted]

Table 58: [redacted]

[redacted]

Table 59: [redacted]

[redacted]

Again, it must be noted that the above costs are not the final costs that are entered into the FLSM. An additional adjustment to be made is the removal of propex costs.

(h) **Propex adjustments**

The table below shows the propex incurred by the different groups within the Networks LOB. A full discussion of the propex adjustment is available in section 5.2 of the Opex Explanation. For Approach B, the same process as that used for identifying propex for CSD was used.

Table 60: [redacted]

[redacted]

[redacted]

Propex incurred by each group is broken up into direct and indirect costs based on the direct to indirect ratio of each group.

Table 61: [redacted]

[redacted]

The propex direct cost of each group is further distributed to different FLSM asset classes based on the direct cost incurred on individual asset classes by the organisational group (see table below). This is the same method as that used for CSD LOB.

Table 62: [redacted]

[redacted]

The net opex (after propex deduction) is given in the table below.

Table 63: [redacted]

[redacted]

Appendix 4: Conservative assumptions in attribution of accommodation costs to the FLSM

1. Introduction

A key component of operating expenditure within the Networks LOB relates to electricity, rents and building outgoings for Telstra's physical network locations (principally network exchange buildings). These activities are defined within Telstra's GL under the grouping "Accommodation". It should be noted that accommodation expenses incurred by the Networks LOB only relate to expenses on network facilities (e.g. exchange buildings, network equipment such as switches and DSLAMs). These expenses do not include general accommodation costs – such as the costs associated with corporate offices and retail stores.

Accommodation expenses are principally incurred by the Network Infrastructure Management organisation group within Networks, however several other organisation units also incur accommodation expenses. Unlike for other types of Network LOB expenditure, accommodation expenditure was assessed across organisation units rather than on a unit-by-unit basis.

Accommodation operating expenditure within Networks was [redacted] in FY2014. Telstra has included [redacted] in its FY2014 base-year operating expenditure for the FLSM (the [redacted] represents approximately [redacted] of the total accommodation operating expenditure within Networks of [redacted]).

Table 64: [redacted]

[redacted]

As is apparent from the above table, the single largest category under Accommodation is energy costs (Light & Power (PLR628850)). In order to determine the relevant proportion of electricity costs to be attributed to the FLSM Asset Classes, the Network Energy Consumption Model (**NECM**) is used.

The NECM is an engineering model used by Telstra Networks for monitoring and allocating energy consumption and costs, in order to identify areas for energy savings, to forecast future energy costs and to assess the outcomes of energy reduction initiatives. NECM was developed internally by Telstra.

The NECM draws inputs from Telstra's network inventory database, network electricity consumption database and technical specification of equipment and use iterative computations to produce the profile of electricity consumption by individual equipment categories at Telstra network sites.

Further details as to the operations of the NECM can be found in the Opex Explanation.

The key output from the NECM for the purpose of this study is the [redacted] of total power consumption of those assets classes that are relevant to the FLSM, which is set out in the table below.

Table 65: [redacted]

[redacted]

Telstra has used the results of the NECM and the distribution of electricity costs between FLSM Assets and third party services and other assets/services to determine the amount of building outgoings and rent costs to be attributed to the FLSM Asset Class Network Buildings and Support. It has done this by applying the same [redacted] proportion to these costs to determine what should be attributed to FLSM Asset Classes which is a conservative approach. In other words, electricity costs are used as a proxy for other costs in determining how much is relevant to the FLSM. Telstra recognises that this approach does not determine exactly the building outgoings and rent costs attributable to FLSM Asset classes. However, in the absence of further information being available, it is confident that this approach is reasonable and in fact conservative.

The FLSM Asset Class Network Buildings and Support covers all exchange building and related network facilities. These buildings predominantly house equipment related to the FLSM (local switching equipment, distribution frames, DSLAM equipment, transmission equipment), although other equipment is also present – such as mobile network equipment and other data equipment not captured within the FLSM Data Equipment Asset Class. Although all costs related to the Network Buildings and Support Asset Class can be considered relevant, Telstra's approach reduces the applied costs to a proportion representative of the use of these buildings for housing and operating the remaining fixed line services assets.

2. Purpose of this study

In order to assess the prudency and reasonableness of using the NECM results as a proxy for the relevant amount of other accommodation costs, it is necessary to assess the results of the NECM against other (more direct) measures of cost attribution for relevant accommodation categories.

Although these data were not available at the time Telstra developed it FLSM operating expenditure forecasts, following further investigations on data availability, Telstra has been able to access detailed network-site level information for maintenance costs, land tax costs and local government/council and water rates for FY2014.

Using these more direct measures it is possible to assess whether the [redacted] attribution of accommodation costs on the basis of the NECM results is reasonable.

Further detail as to the methodology and analysis of these additional data sets is set out below.

3. Methodology

In undertaking this study, the following methodologies were adopted in respect of the three raw data sets collected for the analysis:

(a) Maintenance activities data

1 Data gathering – data was gathered from Telstra's external maintenance provider Thiess, which sets out all logged maintenance activities that have been carried out for Telstra's network assets in FY2014. For each maintenance activity, the data set includes an address ID and the site name for where the activity was carried out and the maintenance spend incurred.

2 Data segmentation – based on the address ID (which is mapped against Telstra's address database) and the site name, it is determined which maintenance activities occurred for Telstra's exchange assets and which occurred for other assets.

(b) Land tax data

1 Data gathering – data was gathered from Jones Lang LaSalle which sets out the taxable value and land tax paid for each of Telstra's network related properties (leased and freehold) for YTD2015.[223] For each network related property, the data set also includes an address and the building use.

2 Data segmentation – based on the address and building use, Telstra determined which network properties are Telstra's exchange buildings and which are not.

(c) Council and water rates data

1 Data gathering – data was gathered from Jones Lang LaSalle which sets out the Council and water rates paid for each of Telstra's network related properties for YTD2015. For each network related property, the data set also includes a building name and other details related to the usage of the site.

2 Data segmentation – based on the building name, address and site usage details, Telstra determined which network properties are Telstra's exchange buildings and which are not.

4. Analysis

The analysis of the three data sets noted above is set out in the following tables.

Table 66: [redacted]

[redacted]

Table 67: [redacted]

[redacted]

[223] At the time of this analysis, data for Queensland properties was not available. However, we would not expect a material change to the findings of the analysis if Queensland data was to be included in the data set.

Table 68: [redacted]

[redacted]

It should be noted that the data outlined above are drawn directly from the financial management systems of Telstra's external providers Thiess and Jones Lang LaSalle. These figures do not completely reconcile to the network accommodation costs set out in the general ledger. This is principally due to timing differences and the impact of accrual accounting in the general ledger. For example costs, invoiced by Thiess near the start and end of a financial year may be recorded by Telstra as an expense in a different financial year depending on when the maintenance request was first lodged and when the work was completed.

The table below summarises the various alternative allocation proxies for accommodation costs based on the above analysis.

Table 69: [redacted]

[redacted]

5. Implications for the reasonableness of the NECM proxy [redacted] for allocation of accommodation costs

As set out above, Telstra's current approach is to apply the NECM allocation proxy of [redacted] to all of the relevant general ledger categories which comprise accommodation costs (as set out in the table below). It is noted that the "Total expenditure" column in the table below represents the portion of costs relevant to Network infrastructure management plus a small amount from other lines of businesses for each relevant general ledger category for FY2014.

Table 70: [redacted]

[redacted]

A potentially more robust approach could be to apply the relevant proxies calculated in the Analysis section above to its specific general ledger category. For example, the [redacted] Council and water rates allocation proxy (calculated from the Council and water rates data set) could be multiplied by the total expenditure for general ledger category Property – Council & Water Rates (PLR628810) of [redacted]. This approach is applied in the table below, which should be read with the following notes:

- The NECM allocation of proxy of [redacted] is applied to general ledger category Light & Power (PLR628850).
- The maintenance activity (by total cost) proxy of [redacted] is applied to general ledger categories Cleaning Gardening & Security (PLR628820), Property - Other Outgoings (PLR628860) and Property Building Maintenance (PLR628840). We believe that maintenance activity by total cost is a more accurate representation of the percentage split between maintenance activities for exchange assets and other network assets as compared to the percentage split calculated based on the count of the number of maintenance activities logged.
- The land tax (total land tax paid) proxy of [redacted] is applied to General Ledger category Property – Land Tax (PLR628830). We believe that land tax by the amount paid is the more accurate representation of the percentage split between the land tax obligations between exchange properties and other network properties as compared to the taxable value of the properties.
- The Council and water rates proxy of [redacted] is applied to General Ledger category Property – Council & Water Rates (PLR628810).

Table 71: [redacted]

[redacted]

As can be seen, the approach contemplated in Table 71 above is constrained by the unavailability of gross property rental data for Telstra network assets. Accordingly, we are unable to calculate a "rent allocation proxy" as we have done for the other general ledger categories.

However, by working backwards, in order to match the total accommodation expenditure allocated to exchange assets of [redacted], general ledger category Gross Property Rental (PLR628720) would need to equal [redacted]). This represents [redacted] (the theoretical "rent allocation proxy") of the total expenditure of [redacted].

Two conclusions can be drawn based on this analysis:

- First, unless the proportion of rental costs paid on network properties by Telstra with respect to the FLSM Asset Classes is less than [redacted] then the amount of accommodation costs attributed to the FLSM will be conservative and understate the actual amount of relevant costs.
- Second, if the attribution of rent costs more closely reflects either the NECM result of [redacted] or the results observed from the detailed analysis of the other accommodation categories, then the use of the NECM is likely to materially understate the actual amount of

accommodation expenses that are relevant to the FLSM. For example, if the proportion of rent costs attributable to the FLSM Asset Classes approximated the NECM result ([redacted]), then overall accommodation expenses attributable to the FLSM would increase by [redacted].

6. Conclusion

This analysis supports the view that the power cost proxy (as derived from the NECM) of [redacted] is a reasonable and conservative figure used to allocate accommodation costs to the FLSM as compared to the figures derived from the other three alternative data sets.

Appendix 5: Power usage study

A reduction in SIOs due the NBN migration will not lead to a uniform and proportionate reduction in power usage and associated costs. The reasons for this were explained in our October submission and are summarised below:[224]

[redacted]

Therefore, the rollout of the NBN over the forecast period (FY2015-2019) is not expected to facilitate the depowering of switching nodes until the rollout in a given area switching area (which may cover hundreds of ESAs) has been fully completed. As such, there will significant time lag between the rollout of NBN and migration of customers in a particular area, and the depowering of switching nodes in that area. In some cases, Telstra will not be able to retire the switching node serving an NBN rollout area even at the end of the migration period for that area, because that switching node may also serve other areas which are to be migrated to NBN later.

This can be shown by examining the relationship between changes in SIOs and changes in power consumption in the fixed line network in Telstra's ESAs. Telstra Operations has conducted a study of six ESAs[225] impacted by the NBN rollout where fixed SIOs have declined to examine whether there is any relationship between SIO decline and power usage. This study has shown that no proportional relationship exists between SIO decline and power usage.

Study Methodology

In order to examine if there is any relationship between power usage and SIO decline at the chosen ESAs (Armidale; Aspley, Brunswick, Nudgee, Penrith and South Morang), the following methodology was adopted:

1 **Power usage data obtained and smoothed:** Daily power usage (in kW) was collected from meter readings at each of the six exchanges between 2010 and 2015 (raw data). In order to meaningfully interpret the raw data (which is noisy and affected by seasonal variables, the following processes were applied to remove the noise and smooth out the effects of seasonality.

(a) A moving average filter was applied to gain an appreciation of the general trend of the raw data: i.e. a "window" moves across each point averaging the previous and next 15 points (as well as the current point) which smooths the data and makes it more manageable.

(b) Using a technique similar to "linear least-squares" (fitting a straight line to a data series), we approximated the slow-moving sine wave which implies seasonal variation. This curve is the sinusoid with the smallest amount of difference between it and the data across the entire time period. The wave generated is of the form $y = A\sin(Bx+C) + D$, where A,B,C,D are constants to be found. To generate the "detrended data", we removed the sine wave, and added back the value of "D" (which is just the average level of the measurements).

[224] Telstra, Forecast Model Documentation, October 2015, pg. 39
[225] Armidale, New South Wales; Aspley, Queensland; Brunswick, Victoria; Nudgee, Queensland; Penrith, New South Wales and South Morang, Victoria.

2 **SIO numbers obtained:** SIO numbers were obtained from the quarterly CAN RKR data.

The relevant power usage data and SIO data was then charted (see the Results section) to examine if any relationship could be discerned.

In addition, the following data in respect of the NBN roll out in ESAs was gathered from: the percentage of premises within an ESA at particular dates which are expected to be completely migrated to the NBN; and the dates on which NBN Co areas have been declared ready for service (**RFS**). This served to show that SIO decline was occurring with the NBN rollout. Further information about the NBN rollout on an ESA basis is provided in [redacted] statement at Appendix 15. The NBN migration data is set out in the tables in the Results section below.

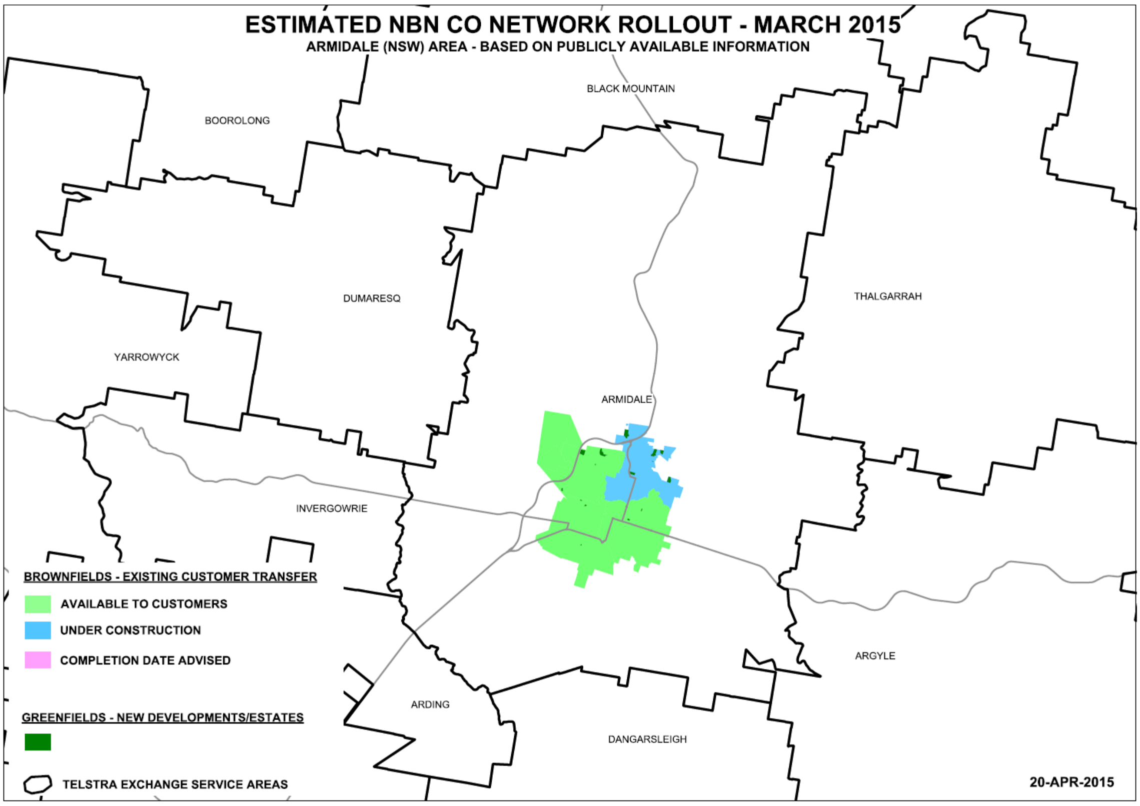
Results

The following charts and tables illustrate that there is no proportional relationship between power usage and SIO decline in each of the examined ESAs where the NBN is being rolled out.

(a) Armidale

NBN Co's actual and forecast fixed line network rollout for the Armidale ESA is set out in the diagram below.

Figure 37: Armidale NBN Co Network Rollout



As set out in Table 72, [redacted] of premises in the Armidale ESA are expected to have been completely migrated to the NBN by June 2015 (i.e.18 months post-RFS date for the Armidale ESA). On 23 November 2012, NBN Co area 2ARM-01 (part of the Armidale ESA) was declared ready for service. Since that time, SIOs have reduced by approximately [redacted]

Table 72: Armidale Power Usage v Number of SIOs

Year	Avg. daily power usage (kW)	Avg. number of SIOs	% of premises within an ESA that are expected to be completely migrated to the NBN (up to 18 months post RFS)
2010	[redacted]		
2011	[redacted]		
2012	[redacted]		
2013	[redacted]		
2014	[redacted]		
2015	[redacted]		

Figure 38 illustrates that, despite the decrease in the number of SIOs between 2010 and March 2015, actual daily power usage remained relatively flat in the Armadale exchange. That is, there is no proportional relationship between power usage and SIO decline in the Armidale exchange.

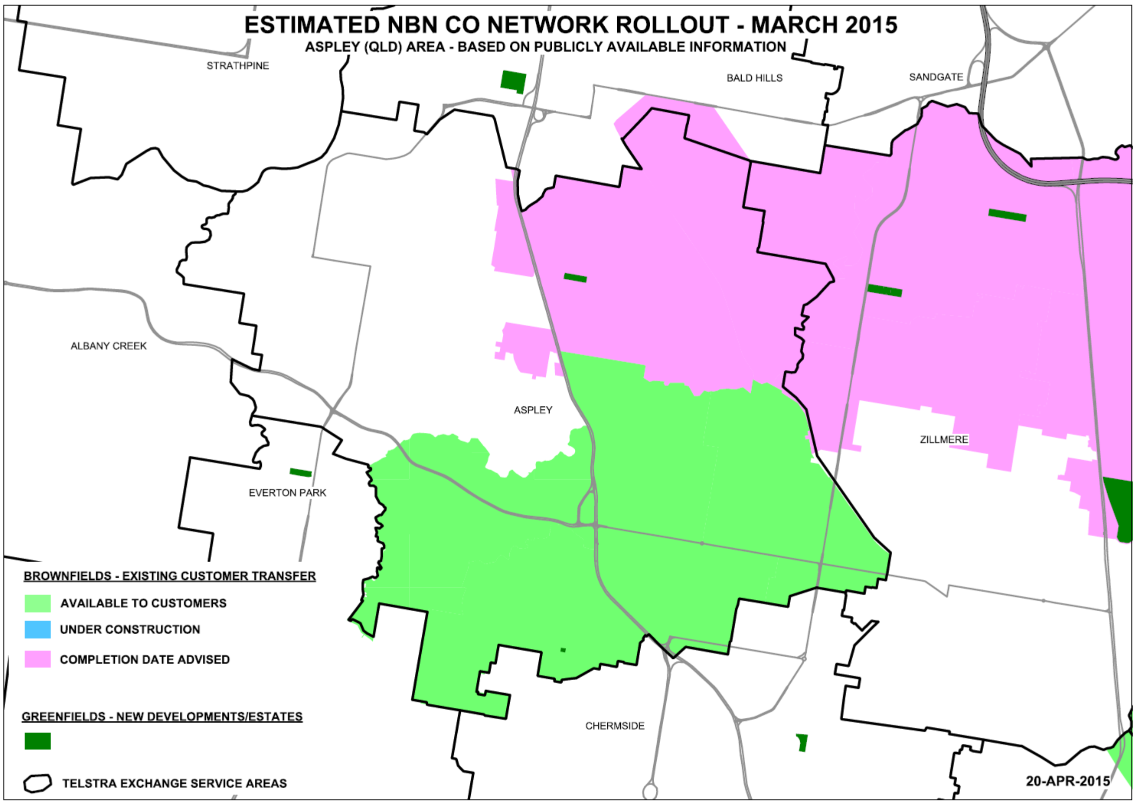
Figure 38: [redacted]

[redacted]

(b) Aspley

NBN Co's actual and forecast fixed line network rollout for the Aspley ESA is set out in the diagram below.

Figure 39: Aspley NBN Co Network Rollout



As set out in Table 73, [redacted] of premises in Aspley are expected to have been completely migrated to the NBN by June 2015 (i.e. 18 months post-RFS date for the Aspley ESA. On 28 March 2013, NBN Co area 4APL-01 (part of the Aspley ESA) was declared ready for service. Since that time, SIOs have reduced by approximately [redacted]

Table 73: Aspley Power Usage v Number of SIOs

Year	Avg. daily power usage (kW)	Avg. number of SIOs	% of premises within an ESA that are expected to be completely migrated to the NBN (up to 18 months post RFS)
2010	[redacted]		
2011			
2012			
2013			
2014			
2015			

Figure 40 shows that, despite a decrease in the number of SIOs between 2010 and March 2015 in the Aspley exchange, actual daily power usage has steadily increased between 2010 and 2015. That is, there is no proportional relationship between power usage and SIO decline in the Aspley exchange – in fact power usage has moved in the opposite direction of SIOs.

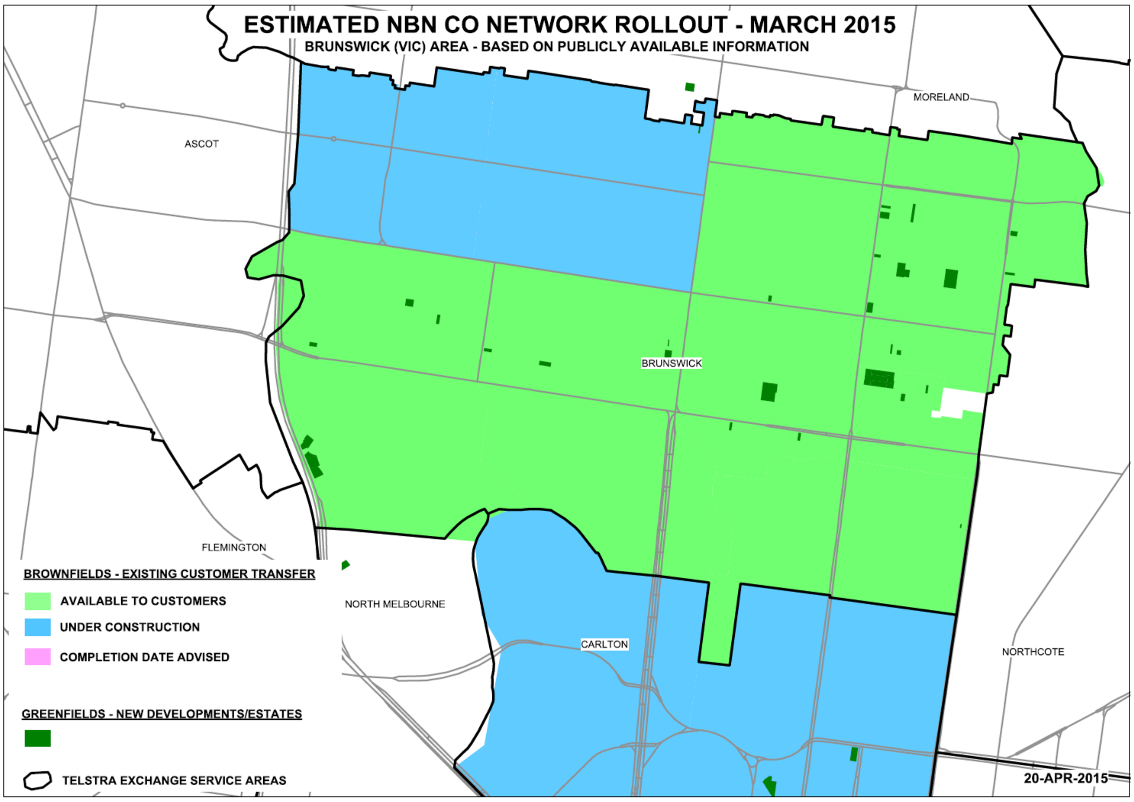
Figure 40: [redacted]

[redacted]

(c) Brunswick

NBN Co's actual and forecast fixed line network rollout for the Brunswick ESA is set out in the diagram below.

Figure 41: Brunswick NBN Co Network Rollout



As set out in Table 74, [redacted] of premises in Brunswick are expected to have been completely migrated to the NBN by June 2015 (i.e. 18 months post-RFS date for the Brunswick ESA). On 23 November 2012, NBN Co area 3BRU-01 (part of Brunswick ESA) was declared ready for service. Since that time, SIOs have reduced by approximately [redacted]

Table 74: Brunswick Power Usage v Number of SIOs

Year	Avg. daily power usage (kW)	Avg. number of SIOs	% of premises within an ESA that are expected to be completely migrated to the NBN (up to 18 months post RFS)
2010	[redacted]		
2011	[redacted]		
2012	[redacted]		
2013	[redacted]		
2014	[redacted]		
2015	[redacted]		

Figure 42 illustrates that actual daily power usage has not decreased between 2010 and March 2015, despite a fall in the number of SIOs**.** That is, there is no proportional relationship between power usage and SIO decline in the Brunswick exchange.

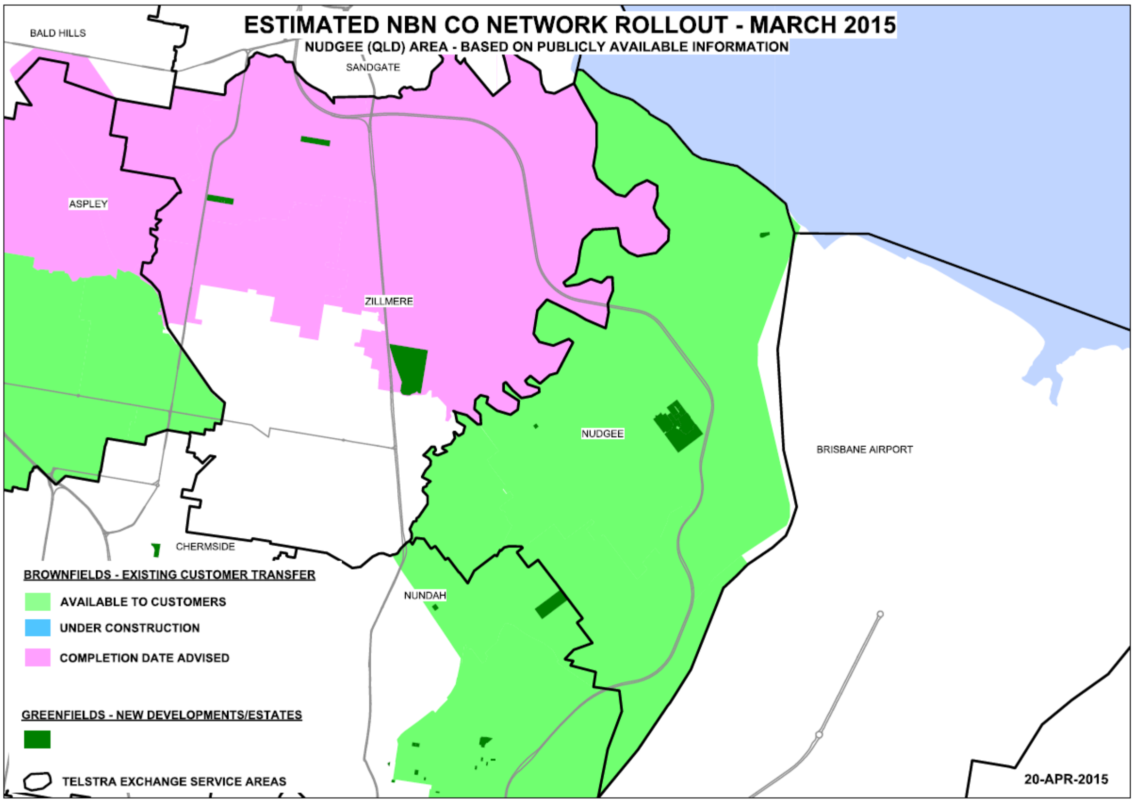
Figure 42: [redacted]

[redacted]

(d) Nudgee

NBN Co's actual and forecast fixed line network rollout for the Nudgee ESA is set out in the diagram below.

Figure 43: Nudgee NBN Co Network Rollout



As set out in Table 75, SIOs have been declining in the Nudgee SIO since 2010. As at March 2015, [redacted].

Table 75: Nudgee Power Usage v Number of SIOs

Year	Avg. daily power usage (kW)	Avg. number of SIOs	% of premises within an ESA that are expected to be completely migrated to the NBN (up to 18 months post RFS)
2010	[redacted]		
2011			
2012			
2013			
2014			
2015			

Figure 44 illustrates that, despite a decrease in the number of SIOs between 2010 and March 2015, actual daily power usage has increased. In particular, between October 2013 and March 2015 there has been a rapid decrease in the number of SIOs and at the same time there has been a marked increase in power usage. That is, there is no proportional relationship between power usage and SIO decline in the Nudgee exchange – in fact power usage has moved in the opposite direction of SIOs.

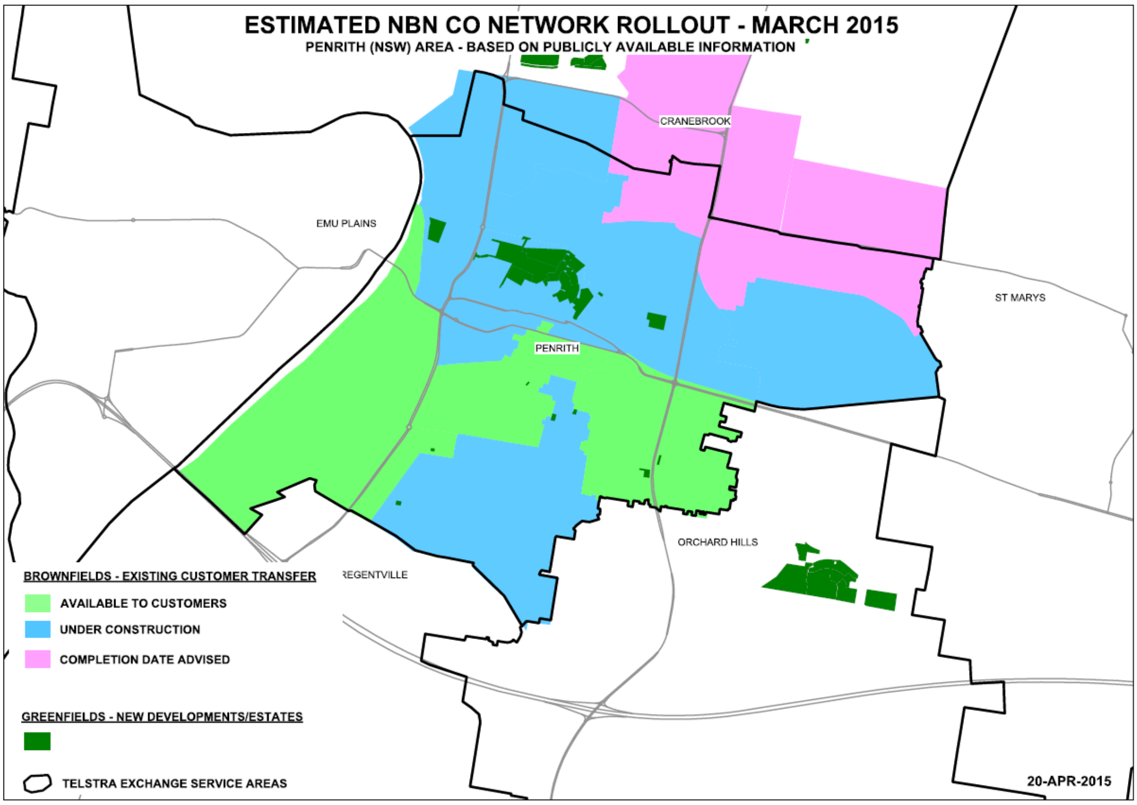
Figure 44: [redacted]

[redacted]

(e) Penrith

NBN Co’s actual and forecast fixed line network rollout for the Penrith ESA is set out in the diagram below.

Figure 45: Penrith NBN Co Network Rollout



As set out in Table 76, [redacted] of premises in Penrith are expected to have been completely migrated to the NBN by June 2015 (i.e. 18 months post-RFS date for the Penrith ESA). On 30 June 2013, NBN Co area 2PTH-01 (part of Penrith ESA) was declared ready for service. As set out in Table 76, SIOs have been declining in the Penrith ESA since 2010.

Table 76: Penrith Power Usage v Number of SIOs

Year	Avg. daily power usage (kW)	Avg. number of SIOs	% of premises within an ESA that are expected to be completely migrated to the NBN (up to 18 months post RFS)
2010	[redacted]		
2011			
2012			
2013			
2014			
2015			

Figure 46 below illustrates that, despite a decrease in the number of SIOs between 2010 and March 2015, average daily power usage has remained relatively flat in the Penrith exchange. That is, there is no proportional relationship between power usage and SIO decline in the Penrith exchange.

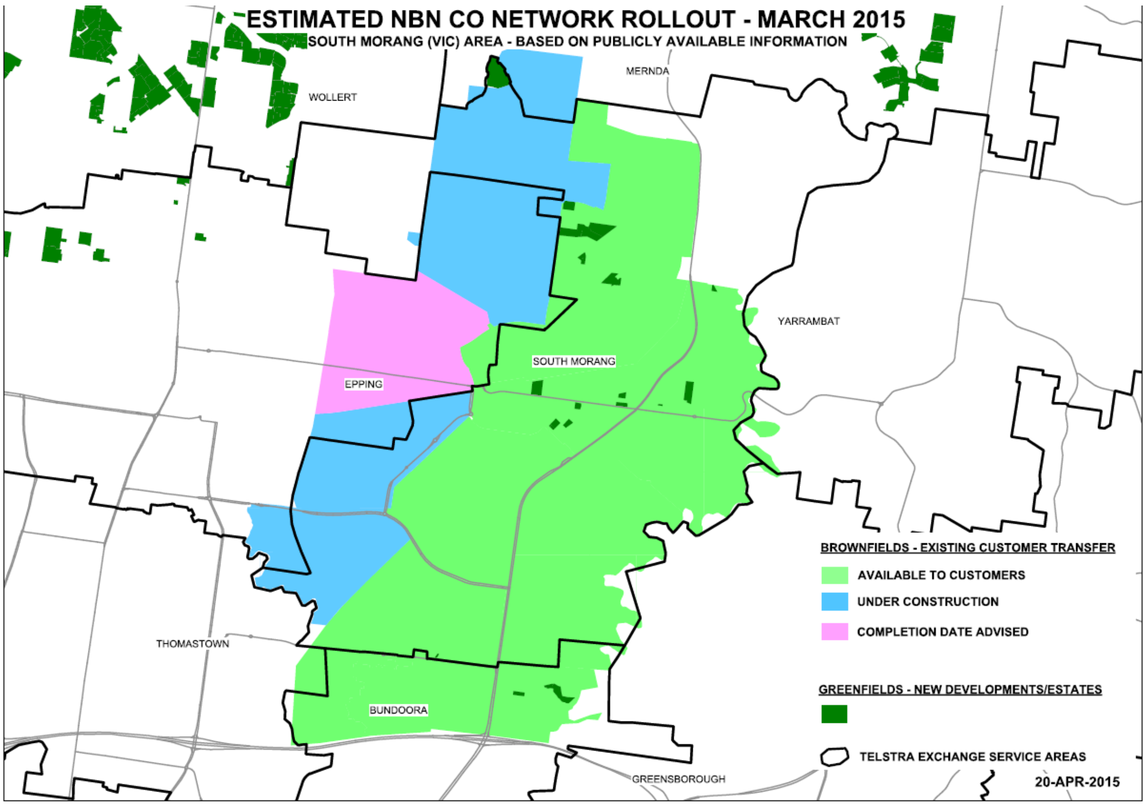
Figure 46: [redacted]

[redacted]

(f) South Morang

NBN Co's actual and forecast fixed line network rollout for the South Morang ESA is set out in diagram below.

Table 77: South Morang NBN Co Network Rollout



As set out in Table 78, [redacted] of premises in the South Morang ESA are expected to have been completely migrated to the NBN by June 2015 (i.e.18 months post-RFS date for the South Morang ESA. On 23 November 2012, NBN Co area 3SMR-03 (part of South Morang ESA) was declared ready for service. Since that time, SIOs have reduced by approximately [redacted]

Table 78: South Morang Power Usage v Number of SIOs

Year	Avg. daily power usage (kW)	Avg. number of SIOs	% of premises within an ESA that are expected to be completely migrated to the NBN (up to 18 months post RFS)
2010	[redacted]		
2011			
2012			
2013			
2014			
2015			

Figure 47 illustrates that, despite the rapid decrease in SIOs between 2013 and March 2015, a rapid decrease in actual power has only occurred in the South Morang exchange from mid-2014 onwards and even then power usage in early 2015 is relatively flat when compared with early 2013. That is, there is no proportional relationship between power usage and SIO decline in the South Morang exchange.

Figure 47: [redacted]

[redacted]

Conclusion

The results from these case studies support Telstra's submission that, as not all equipment can be depowered as demand declines, the relationship between demand and power consumption by telecommunications equipment will not be proportional over the NBN migration period. The case studies show that any power usage reduction in correlation with declining SIOs is modest at best.

In fact in a number of exchanges studied, as SIOs declined, power usage moved in the opposite direction.

Power usage forecasts and assumptions in Forecast Model are conservative

As part of the Fixed Line Services Forecast Model, Telstra has modelled a relationship between SIO decline and changes in electricity consumption. As detailed in its Forecast Model Documentation, in order to forecast the reduction in power usage associated with operation of telecommunications equipment due to declining demand, the Forecast Model makes the following assumptions:

- a power saving of [redacted] kWh for each loss of a SIO by switching off power AXE cards within local switching stages;
- for every 1 kw/h decrease in power consumption by telecommunications equipment, there is a [redacted] kw/h decrease in air-conditioning power consumption;
- a [redacted] power saving on DSLAMs from assumed greater efficiencies and potential equipment rationalisation; and
- a [redacted] power saving due to ongoing general energy reduction initiatives.

In order to test the reasonableness of these assumptions, Telstra has applied these assumptions to the case studies ESAs where demand has declined from 2010-2015.

Telstra's analysis of comparing its forecasts to actual power usage is illustrated in the charts below. This analysis shows that Telstra's forecasts are conservative when compared with the actual change in electricity consumption that has occurred within each case study ESA.

(a) Armidale

As shown below, applying the Forecast Model to the Armidale ESA (with relevant assumptions accounted for) results in a forecast decline of power usage of [redacted] from 2010 to 2015. This is a more conservative forecast than actual power usage decline in this period, which was [redacted]

Table 79: Armidale forecast power usage decline v actual power usage

Year	Avg. kW (daily usage)	Avg. SIOs	Actual Power usage (as a % of 2010 avg. kW daily usage)	FLSM Forecast Decline
2010	[redacted]			
2011	[redacted]			
2012	[redacted]			
2013	[redacted]			
2014	[redacted]			
2015	[redacted]			

Figure 48: [redacted]

[redacted]

(b) Aspley

As is evident below, applying the Forecast Model to the Aspley ESA (with relevant assumptions accounted for) results in a forecast decline of power usage of [redacted] from 2010 to 2015. This is a much more conservative forecast than the actual power usage trend which was an *increase* of [redacted]

Table 80: Aspley forecast power usage decline v actual power usage

Year	Avg. kW (daily usage)	Avg. SIOs	Actual Power usage (as a % of 2010 avg. kW daily usage)	FLSM Forecast Decline
2010	[redacted]			
2011				
2012				
2013				
2014				
2015				

Figure 49: [redacted]

[redacted]

(c) Brunswick

As is evident below, applying the Forecast Model to the Brunswick ESA (with relevant assumptions accounted for) results in a forecast decline of power usage of [redacted] from 2010 to 2015. This is a more conservative forecast than the actual power usage trend which was an *increase* of [redacted].

Table 81: Brunswick forecast power usage decline v actual power usage

Year	Avg. kW (daily usage)	Avg. SIOs	Actual Power usage (as a % of 2010 avg. kW daily usage)	FLSM Forecast Decline
2010	[redacted]			
2011				
2012				
2013				
2014				
2015				

Figure 50: [redacted]

[redacted]

(d) Nudgee

As is evident below, applying the Forecast Model to the Nudgee ESA (with relevant assumptions accounted for) results in a forecast decline of power usage of [redacted] from 2010 to 2015. This is a much more conservative forecast than the actual power usage trend which was an *increase* of [redacted]

Table 82: Nudgee forecast power usage decline v actual power usage

Year	Avg. kW (daily usage)	Avg. SIOs	Actual Power usage (as a % of 2010 avg. kW daily usage)	FLSM Forecast Decline
2010	[redacted]			
2011				
2012				
2013				
2014				
2015				

Figure 51: [redacted]

[redacted]

(e) Penrith

As is evident below, applying the Forecast Model to the Penrith ESA (with relevant assumptions accounted for) results in a forecast decline of power usage of [redacted] from 2010 to 2015. This is a more conservative forecast than the actual power usage trend which was an *increase* of [redacted]

Table 83: Penrith forecast power usage decline v actual power usage

Year	Avg. kW (daily usage)	Avg. SIOs	Actual Power usage (as a % of 2010 avg. kW daily usage)	FLSM Forecast Decline
2010	[redacted]			
2011				
2012				
2013				
2014				
2015				

Figure 52: [redacted]

[redacted]

(f) South Morang

As is evident below, applying the Forecast Model to the South Morang ESA (with relevant assumptions accounted for) results in a forecast decline of power usage of [redacted] from 2010 to 2015. This is a much more conservative forecast than the actual power usage trend which was an *increase* of [redacted].

Table 84: South Morang forecast power usage decline v actual power usage

Year	Avg. kW (daily usage)	Avg. SIOs	Actual Power usage (as a % of 2010 avg. kW daily usage)	FLSM Forecast Decline
2010	[redacted]			
2011				
2012				
2013				
2014				
2015				

Figure 53: [redacted]

[redacted]

Appendix 6: Details of WACC comparison

Recent decisions of State and Commonwealth regulatory authorities in relation to the WACC for regulated utilities (as at March 2015) are set out below.

Regulator	Decision	Date	Rf	Beta	MRP	DRP	D/V	RoE	RoD	WACC
AER	Access arrangement decision for APA GasNet	Mar-13	3.22%	0.8	6.0%	3.46%	60%	8.02%	6.68%	7.22%
QCA	Irrigation prices for SEQWater	May-13	2.89%	0.55	6.0%	3.32%	60%	6.19%	6.21%	6.20%
ESCV	Price review for greater metro water businesses	Jun-13	3.23%	0.65	6.0%	3.49%	60%	7.13%	6.72%	6.89%
ACCC	WADSL final determination	Jul-13	3.19%	0.7	6.0%	1.54%	40%	7.39%	4.73%	6.33%
ACCC	State Water Pricing Application for bulk water	Jun-14	3.98%	0.7	6.0%	2.10%	60%	8.18%	6.08%	6.92%
QCA	Draft decision on Aurizon undertaking	Sep-14	3.21%	0.8	6.5%	2.94%	55%	8.41%	6.15%	7.17%
ERA	WACC for TPI rail	Oct-14	3.75%	1.43	6.0%	2.21%	30%	12.33%	5.96%	10.42%
ERA	WACC for Brookfield Rail	Oct-14	3.75%	1	6.0%	1.51%	35%	9.75%	5.26%	8.18%
QCA	Draft decision on Qrail undertaking	Oct-14	2.81%	0.8	6.5%	3.24%	55%	8.01%	6.05%	6.93%
ERA	Draft decision for ATCO gas	Oct-14	2.95%	0.7	5.5%	2.42%	60%	6.80%	5.37%	5.94%
ERA	WACC for PTA rail	Oct-14	3.75%	0.46	6.0%	1.10%	35%	6.51%	4.85%	5.93%
ESCoSA	Indicative current WACC for SA Water	Nov-14	3.75%	0.8	6.0%	2.52%	60%	8.55%	6.27%	7.18%
AER	Draft decisions for NSW gas (JGN)	Nov-14	3.55%	0.7	6.5%	2.96%	60%	8.10%	6.51%	7.15%
AER	Draft decisions for NSW/ACT businesses	Nov-14	3.55%	0.7	6.5%	2.96%	60%	8.10%	6.51%	7.15%
OTER	Draft report on water and sewerage pricing	Jan-15	4.36%	0.65	6.0%	1.65%	60%	8.26%	6.01%	6.91%

Regulator	Decision	Date	Rf	Beta	MRP	DRP	D/V	RoE	RoD	WACC
IPART	Indicative WACC for transport businesses	Feb-15	3.80%	0.9	7.16%	2.55%	60%	10.24%	6.35%	7.91%
IPART	Indicative WACC for water businesses	Feb-15	3.80%	0.7	7.16%	2.55%	60%	8.81%	6.35%	7.33%
ACCC	FAD draft decision	Mar-15	2.50%	0.7	6.0%	1.01%	40%	6.70%	3.51%	5.42%

Note: values from IPART determinations reflect the mid-point of the range determined by IPART. IPART determines a WACC range based on current market data and long-term averages.

Appendix 7: Information on asset lives requested by the ACCC

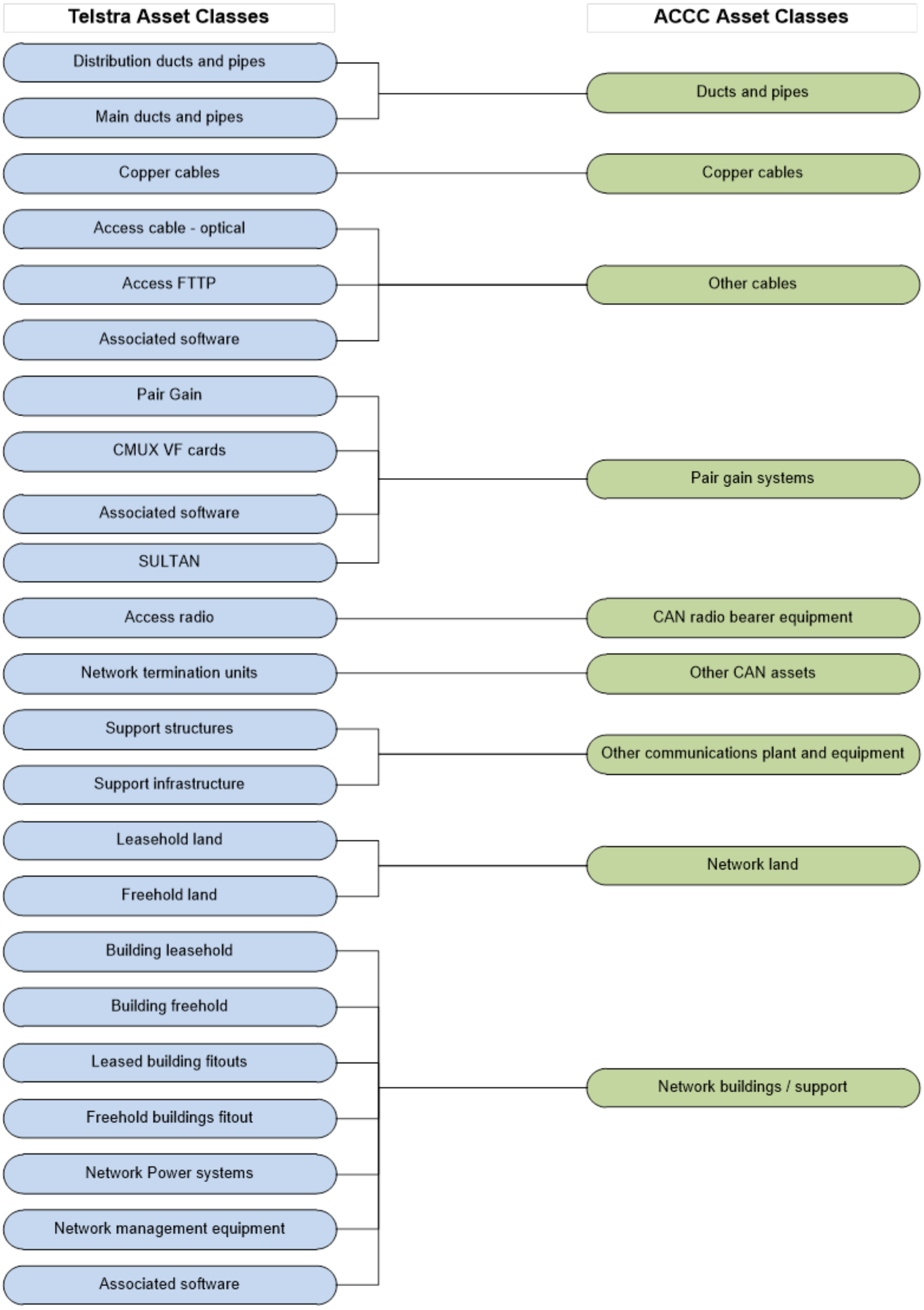
Figure 54 outlines how the asset lives in Telstra's internal systems align with the asset classes used by the ACCC.

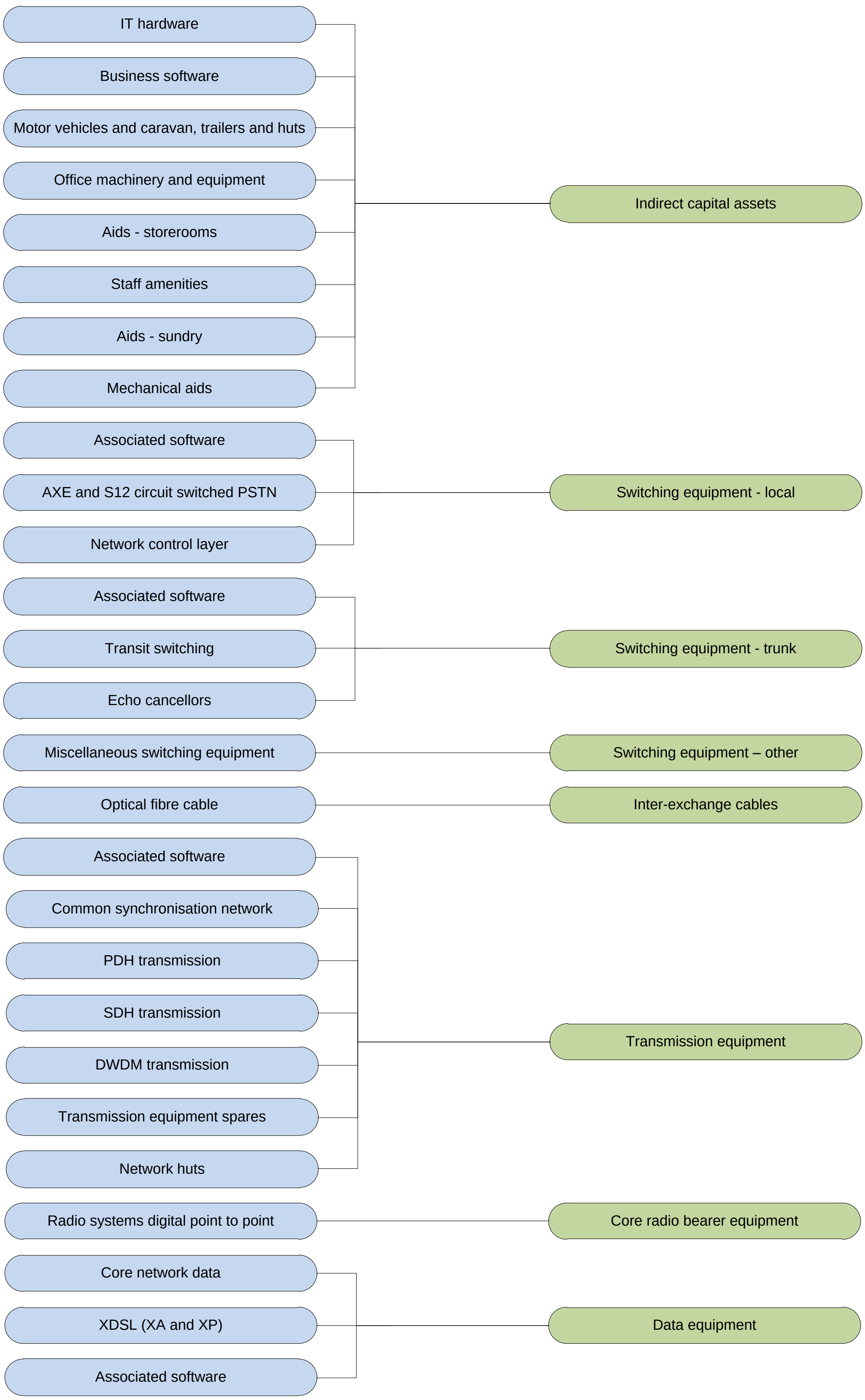
CO11 – LSS Equipment has not been included in the diagram below as this FLSM asset class was created by the ACCC for the purpose of the modelling to account for the costs attributable to the LSS, facilitating the estimation of a regulated access price through the FLSM.[226] The ACCC has not allocated any capital expenditure to the "LSS equipment" asset class because the assets used to provide the LSS have been fully depreciated and Telstra has not made further capital investments in these assets. Telstra has not indicated that it intends to make any further investments in those assets.[227]

Note that in this appendix the term "settlements" refers to the capital expenditure booked to the asset register in FY14.

[226] Telstra Corporation, *Cost Allocation Framework for the ACCC Fixed Line Services Model*, *Framework and Model Guide, Version 1*, July 2014, p 45.
[227] ACCC, *Inquiry to make final access determinations for the declared fixed line services*, July 2011, p 56.

Figure 54: Asset classes




IT hardware
Business software
Motor vehicles and caravan, trailers and huts
Office machinery and equipment
Aids - storerooms
Staff amenities
Aids - sundry
Mechanical aids
Indirect capital assets
Associated software
AXE and S12 circuit switched PSTN
Network control layer
Switching equipment - local
Associated software
Transit switching
Echo cancellors
Switching equipment - trunk
Miscellaneous switching equipment
Switching equipment – other
Optical fibre cable
Inter-exchange cables
Associated software
Common synchronisation network
PDH transmission
SDH transmission
DWDM transmission
Transmission equipment spares
Network huts
Transmission equipment
Radio systems digital point to point
Core radio bearer equipment
Core network data
XDSL (XA and XP)
Associated software
Data equipment

CA01 Ducts and Pipes

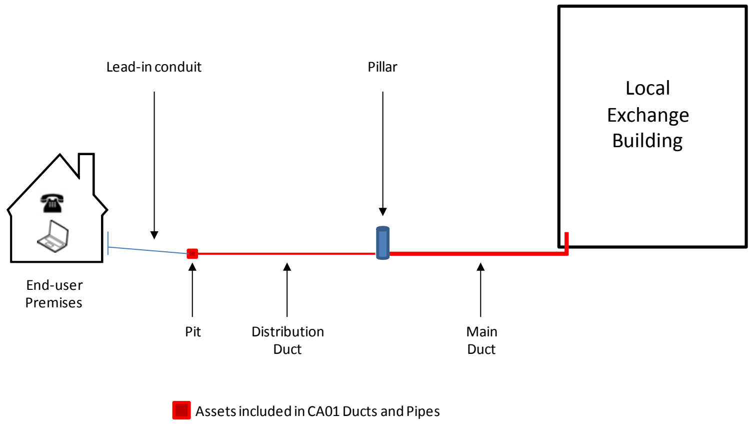
ACCC asset class description

The Ducts and Pipes (CA01) Asset Class contains Telstra's duct network assets. These assets are used predominantly to contain copper cables in the main and distribution stages of the CAN. The duct network also contains fibre optic cable, some HFC as well as third party services. The duct network is present in CBD, metropolitan and most regional areas. CA01 comprised just under [redacted] of the initial Regulatory Asset Base (**RAB**) value (i.e. the RAB value as at 1 July 2011).

Telstra assets included in ACCC asset class

The asset class comprises distribution ducts and pipes and main ducts and pipes, as shown in the diagram below.

Figure 55: Assets included in CA01



Telstra asset class description

Distribution ducts and pipes

Distribution ducts/pipes provides accommodation for distribution cable, both copper and increasingly optical fibre. They range from substantial installations (multiple ducts) and protected by grout fill to single 20mm pipe for the last part of the distribution to the customer.

Main ducts and pipes

Main ducts/pipes provides accommodation for Inter-exchange and main cable. They are usually substantial installations (multiple ducts) protected by grout fill.

Telstra WASL FY2015

[redacted]

Rationale

All Duct and pipe assets have a Type of Life as End Date, with Main Duct [redacted] giving a service life of [redacted] in FY2015, and Distribution Duct [redacted], giving a service life of [redacted] in FY2015.

Combining these into an average for all duct assets, weighted by the FY2014 Settlements (value added into the asset register in FY2014) provides a WASL of [redacted] years for FY2015.

Table 85: Ducts and Pipes WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
CA01	XC	CAN Ducts and Pipes	[redacted]										
CA01	XN	CAN Ducts and Pipes											
CA01													

CA02 Copper Cables

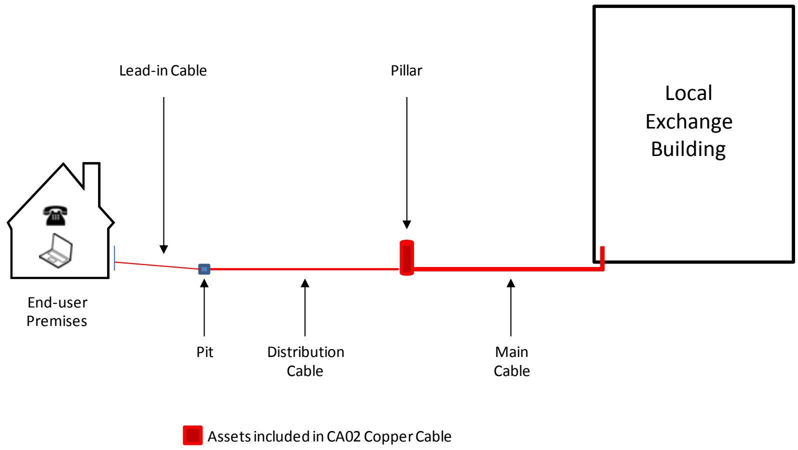
ACCC asset class description

The Copper Cables (CA02) Asset Class contains Telstra's copper cable assets, which are Telstra's primary means of connecting end-users to the PSTN through the CAN, enabling the provision of fixed line access services – including ULLS, LSS, WLR (and retail basic access) – and associated voice and broadband services. CA02 comprised just over [redacted] of the initial RAB value.

Telstra assets included in ACCC asset class

Copper cables.

Figure 56: Assets included in CA02



Telstra asset class description

Copper access cable is contained in the XD (Distribution) and XU (Main) groups of classes. These were historically treated separately, but were aligned in the 2009/2010 service life review and given a common retirement window with a [redacted].

Telstra WASL FY2015

[redacted]

Rationale

All copper cable assets have a Type of Life as End Date, being [redacted] giving a service life of [redacted] in FY2015.

Table 86: Copper Cables WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
CA02	XD	CAN Copper Cables	[redacted]										
CA02	XU	CAN Copper Cables											
CA02													

CA03 – Other cables

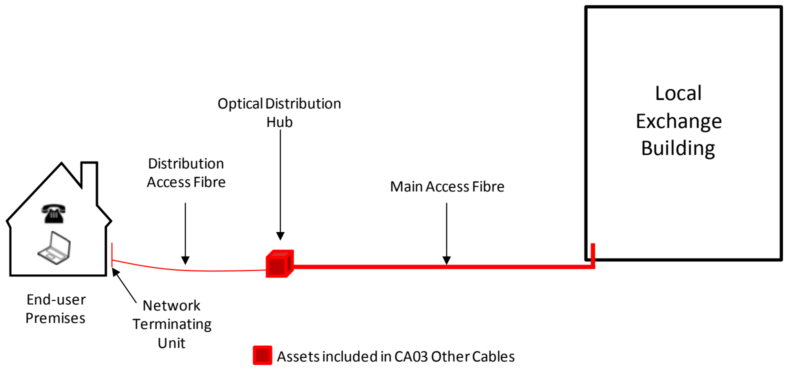
ACCC asset class description

The Other Cables (CA03) Asset Class contains CAN-based optical fibre cables (and associated infrastructure) used to provide FTTP services in Telstra's Velocity estates, South Brisbane and similar deployments. These assets are used to provide services to end-users (either retail or wholesale basic access). CA03 comprised less than [redacted] of the initial RAB value. Note: optical fibre cables within this asset class do not include optical fibre cables used to connect remote (or CAN-based) voice and DSLAM equipment - i.e. Pair Gain Systems such as CMUX units. These cables are recorded against CO04 Inter-exchange Cables.

Telstra assets included in ACCC asset class

Access cable – optical, access FTTP and associated software.

Figure 57: Assets included in CA03



Telstra asset class description

Access cable – optical

This group of asset classes cover optic fibre distribution cable in the access network. These classes do not cover the lead-ins for residential services.

Access FTTP

These classes cover the NTUs and lead-ins, as well as the exchange and transport equipment, used in providing fibre to the premises (FTTP) services, while the UZ classes cover the associated software.

Telstra WASL FY2015

[redacted]

Rationale

Other cable assets are broadly split into 2 types of assets – the fibre cable and the equipment and software required to provide services over the cable.

The cable assets have a Type of Life as DoA, and a service life of [redacted], while the other equipment is End Dated to 30/6/2017, giving a service life of [redacted] for FY2015.

Combining these into an average for all other cable assets, weighted by the FY2014 Settlements provides a WASL of [redacted] years for FY2015.

Table 87: CAN Other Cables WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
CA03	UZ	CAN Other Cables	[redacted]										
CA03	XF	CAN Other Cables	[redacted]										
CA03	XO	CAN Other Cables	[redacted]										
CA03			[redacted]										

CA04 Pair Gain Systems

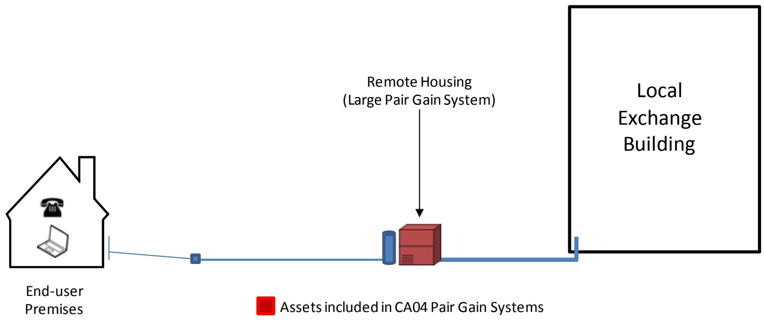
ACCC asset class description

The Pair Gain Systems (CA04) Asset Class contains remote voice equipment (pair gain systems), which provides voice functionality to end-users. These devices – generally CMUX units – can also facilitate the provision of broadband services to end-users with the installation of a collocated DSLAM device. These devices are not part of the CA04 Asset Class and are contained (along with other, exchange-based DSLAM equipment) in CO12 Data Equipment. CA04 comprised just over [redacted] of the initial RAB value. The costs associated with assets are allocated to WLR, Retail Basic Access services and ISDN services.

Telstra assets included in ACCC asset class

Pair gain, CMUX VF Cards, associated software and SULTAN.

Figure 58: Assets included in CA04



Telstra asset class description

Pair gain

This section covers older pair gain equipment not associated with CMUX equipment. This equipment is usually VF specific and in most cases is not compatible with broadband data service on the same pairs.

CMUX VF Cards

This covers the ISDN, POTS and other VF cards installed in CMUX housings. These cards are expected to be retired in line with the PSTN.

SULTAN

SULTAN equipment allows for remote testing of customer lines. SULTAN is in a maintenance phase at present and is expected to be required as long as Telstra has customers connected via copper.

Telstra WASL FY2015

[redacted].

Rationale

Pair Gains assets are broadly split into the pair gain equipment and cards and the software required to provide services. SULTAN is also included in this asset class; however no settlements were made in FY2014.

Most of the pair gain assets are [redacted], giving a service life of [redacted] for FY2015, except for one software asset which is [redacted], with a service life of [redacted] for FY2015.

Combining these into an average for all pair gain assets, weighted by the FY2014 Settlements provides a WASL of [redacted] for FY2015.

Table 88: CAN Pair Gain Systems WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
CA04	UP	CAN Pair Gain Systems	[redacted]										
CA04	XPG	CAN Pair Gain Systems	[redacted]										
CA04	XZ	CAN Pair Gain Systems	[redacted]										
CA04			[redacted]										

CA05 CAN Radio Bearer Equipment

ACCC asset class description

The CAN Radio Bearer Equipment (CA05) Asset Class includes antennas, terminals and related equipment. Note: these assets are not related to mobile wireless assets. These assets are used in the provision of Retail Basic Access and WLR services. CA05 comprised [redacted] of the initial RAB value.

Telstra assets included in ACCC asset class

Access – radio.

Telstra asset class description

These assets provide basic access services over radio for remote customers or areas where it is difficult or expensive to provide cable.

Telstra WASL FY2015

[redacted]

Rationale

All CAN radio bearer assets have a Type of Life as End Date, being [redacted] giving a service life of [redacted] in FY2015.

Table 89: CAN Radio Bearer Equipment WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
CA05	XR	CAN Radio Bearer Equipment	[redacted]										
CA05													

CAO6 Other CAN Assets

ACCC asset class description

The Other CAN Assets (CA06) Asset Class contains Network Termination Units which are used by the fixed line access services (ULLS, WLR, Retail Basic Access, ISDN and Other DSL). CA06 comprised just [redacted] of the initial RAB value.

Telstra assets included in ACCC asset class

Network Termination Units.

Telstra asset class description

Other CAN Assets is made up of Network Termination Units. This equipment is located at customer premises.

Telstra WASL FY2015

[redacted]

Rationale

All CAN Other assets have a Type of Life as DoA, and a service life of [redacted].

Table 90: CAN Other Equipment WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
CA06	XW	Other CAN	[redacted]										
CA06													

CA07 Other Communications Plant and Equipment and CO07 Other Communications Plant and Equipment

ACCC asset class description

The ACCC has separated Other Communications Plant and Equipment assets into CAN and Core asset classes.

The CAN Other Communications Plant and Equipment (CA07) Asset Class includes CAN radio towers, used in conjunction with CA05 to supply retail basic access and WLR fixed line access services.

The remainder of the Other Communications Plant and Equipment Asset Class contains racks, ironwork and tie cables used in Telstra exchange buildings to support the provision of fixed line services, and other services – including use by third parties. These assets are split between the CAN and Core asset classes using ratios used by the ACCC in the 2011 FAD process.

CA07 comprised just [redacted] of the initial RAB value (including a portion of the remainder of the Other Communications Plant and Equipment).

CO07 comprised less than [redacted] of the initial RAB value.

Telstra assets included in ACCC asset class

Support structures and support infrastructure.

Telstra asset class description

Support structures

This category was created to house all support towers, masts and poles.

Support infrastructure

These asset classes were created in 2005 and include generic iron work, racks and tie cables provided for non specific platforms/products that do not come with their own support infrastructure. (New generation technologies are usually supported by proprietary racks/cabinets which are capitalised with the equipment that they support.)

Note, not all support structures are included in this FLSM Asset Class.

ZS items are purely CAN whereas ZI items are split between CAN and Core based on the proportions the ACCC used in 2011 – [redacted] CAN and [redacted] Core.

Telstra WASL FY2015

CAN – [redacted]
Core – [redacted].

Rationale

CA07:

The assets in this class include all of the support structures and a portion of the support infrastructure.

All support structure assets have a Type of Life as DoA, and a service life of [redacted], while the support infrastructure assets have a Type of Life as DoA, and a service life of [redacted].

Combining these into an average for all CAN Other Communications assets, weighted by the FY2014 Settlements provides a WASL of [redacted] for FY2015.

CO07:

The assets in this class include a portion of the support infrastructure.

All support infrastructure assets have a Type of Life as DoA, and a service life of [redacted].

Table 91: CAN Other Communications Equipment and Core Other Communications Equipment WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
C?07	ZI	Other Communications	[redacted]										
C?07	ZSO	Other Communications	[redacted]										
CA07			[redacted]										
CO07			[redacted]										

CA08 Network Land and CO08 Network Land

ACCC asset class description

The ACCC has separated Network Land assets into CAN and Core asset classes.

The CAN Network Land (CA08) Asset Class contains the share of network land assets (which include freehold network land, structural land improvements, mains power connections, fencing, roads, paths, parking, drainage and landscaping) to accommodate the customer side of the Main Distribution Frame (MDF) – which is contained in CA09. This asset is required for the provision of the fixed line access services (i.e. WLR and ULLS). CA08 comprised under [redacted] of the initial RAB value.

The Core Network Land (CO08) Asset Class is the value of network land assets (which include freehold network land, structural land improvements, mains power connections, fencing, roads, paths, parking, drainage and landscaping) – excluding that share allocated to CA08. These assets are required for the provision of the fixed line services and other services – including use by third parties. CO08 comprised around [redacted] of the initial RAB value.

Telstra assets included in ACCC asset class

Leasehold land and freehold land.

Telstra asset class description

Leasehold land

Leasehold land is usually only acquired for network support where it is not possible to purchase a site of an appropriate size. As network land and buildings are normally required for the long-term ownership is the preferred method of acquisition.

Freehold land

The majority of the land used for network support is in long-held owned (freehold) properties. This land was acquired over time with the growth and expansion of the network. Freehold land and the non-building improvements to it are not depreciated.

These assets do not depreciate.

Telstra WASL FY1015

CAN - [redacted].
Core – [redacted].

Rationale

As stated in Telstra's BBM RKR, for non-depreciating assets (e.g. land, demolition and improvements to land), Telstra has applied an asset life of [redacted].[228] Within Telstra's accounting systems, such assets are ordinarily assigned a nominal asset life of [redacted].

Table 92: CAN Network Land and Core Network Land WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
C?08	1112	Network Land	[redacted]										
C?08	1113	Network Land											
CA08													
CO08													

[228] Telstra Corporation Limited, *Final Access Determinations (FADs) Inquiry – confidential response to information request under the BBM RKR*, November 2013, p 56.

CA09 Network Buildings/Support and CO09 Network Buildings/Support

ACCC asset class description

The ACCC has separated Network Buildings/Support into CAN and Core asset classes.

The CAN Network Buildings/Support (CA09) Asset Class contains the share of aggregate network buildings and support assets designed to reflect the values and associated costs of the Customer side of the MDF within Telstra exchange buildings. This asset is required for the provision of the fixed line access services (i.e. WLR and ULLS). CA09 comprised [redacted] of the initial RAB value.

The Core Network Buildings/Support (CO09) Asset Class is the value of aggregate network buildings and support assets – less the share allocated to CA09. This asset is required for the provision of the fixed line services and other services – including use by third parties. CO09 comprised [redacted] of the initial RAB value.

Telstra assets included in ACCC asset class

Building leasehold, building freehold, leased building fit-outs, freehold buildings fit-out, network power systems, network management equipment and associated software.

Figure 59: Assets included in CA09

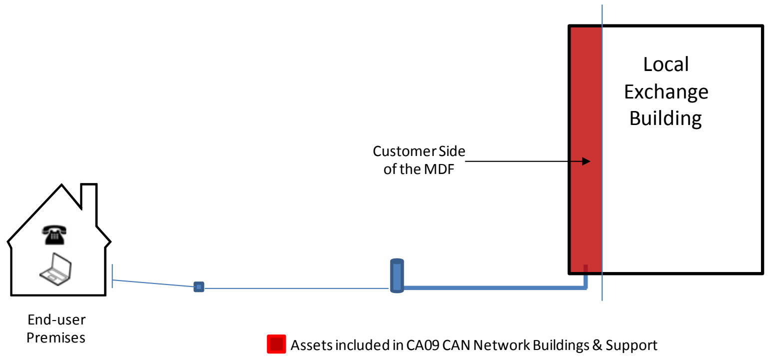
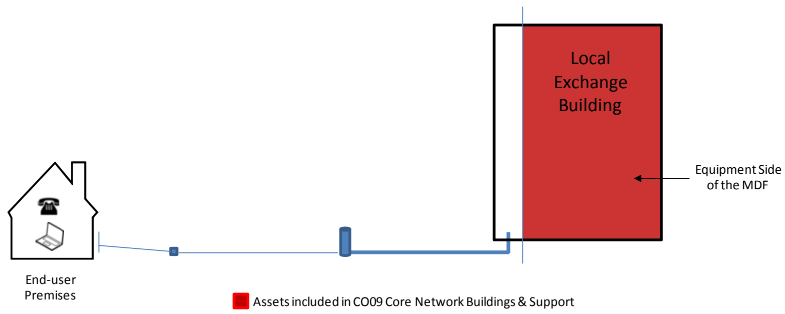


Figure 60: Assets included in CO09



Telstra asset class description

Building leasehold

As network buildings are usually required for the long term, leasehold buildings are generally only used where it is not possible to acquire a suitable site outright. They do not represent a large proportion of Telstra's network infrastructure.

Building freehold

The majority of the buildings used for network support are long-held owned (freehold) properties. These buildings were acquired over time with the growth and expansion of the network. This group includes the building shells and improvements and additions to those shells.

Leased building fitouts

These classes are used for assets relating to the fit outs of leased network buildings, such as carpets, fixed workstations and alarms.

Freehold buildings fitout

These classes are used for assets relating to the fit outs of owned network buildings, such as carpets, fixed workstations and alarms.

Network power systems

This asset group includes batteries, rectifiers, solar power, wind generators and other hardware used to supply electrical power for network assets.

Network management equipment

Assets in this group are predominantly used to support network technologies that do not have an element manager or equivalent, directly associated with the network technology.

Telstra WASL FY2015

CAN – [redacted]
Core – [redacted]

Rationale

The assets under this asset class are quite diverse, ranging from the building shells of Telstra's exchanges to the air-conditioning and power equipment, to Network Management equipment and software, and have Type of Life as either DoA or End Date with the resulting service lives for FY2015 ranging from [redacted].

Combining these into an average for all Network Buildings/Support assets, weighted by the FY2014 Settlements provides a WASL of [redacted] for FY2015.[229]

Table 93: CAN Network Buildings/Support and Core Network Buildings/Support WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
C?09	1122	Network Buildings/Support	[redacted]										
C?09	1123	Network Buildings/Support											
C?09	1125	Network Buildings/Support											
C?09	1126	Network Buildings/Support											
C?09	DP	Network Buildings/Support											
C?09	NM	Network Buildings/Support											
CA09													
CO09													

[229] Note that separate WASLs for CAN and Core assets were not required as all assets contained in this asset class are presumed to be used by both CAN and Core.

CA10 Indirect Capital Assets and CO10 Indirect Capital Assets

ACCC asset class description

The ACCC has separated Indirect Capital Assets into CAN and Core asset classes.

The CAN Indirect Capital Assets (CA10) Asset Class contains equipment related to motor vehicles and mechanical aids, but is predominantly IT – both software and hardware. CA10 is required for the provision of all regulated fixed line services and other services. CA10 comprised just under [redacted] of the initial RAB value.

The Core Indirect Capital Assets (CO10) Assets Class contains equipment related to motor vehicles and mechanical aids, but is predominantly IT – both software and hardware. CO10 is required for the provision of the fixed line services and other services. CO10 comprised just under [redacted] of the initial RAB value.

Telstra assets included in ACCC asset class

IT hardware, business software and motor vehicles and caravan, trailers and huts, office machinery and equipment, aids – storerooms, staff amenities, aids – sundry and mechanical aids.

Telstra asset class description

IT hardware

This group covers the hardware used to provide business (non-network) systems. This includes servers, routers and storage associated with the systems/software in the [redacted] classes. [redacted] is for major hardware assets and [redacted] is for mid-range hardware assets.

Business software

Business software classes are divided into large applications that justify their own class and smaller applications that are settled into generic classes based on the type of application.

Motor vehicles and caravan, trailers and huts

This group covers owned motor vehicles, caravans, huts and associated equipment primarily used for network activities.

Office machinery and equipment, aids – storerooms, staff amenities, aids – sundry and mechanical aids

The above items have little in settlements for FY2014 and make up [redacted] of spend.

Indirect asset items are split between CAN and Core based on the proportions the ACCC used in 2011 – [redacted] CAN and [redacted] Core. The same life is applied to both.

Telstra WASL FY2015

CAN – [redacted]
Core – [redacted].

Rationale

The assets under this asset class are also diverse, ranging from data storage and file servers to billing systems and other software, to mechanical vehicles and aids, and have Type of Life as either DoA or End Date with the resulting service lives for FY2015 ranging [redacted].

Combining these into an average for all Indirect assets, weighted by the FY2014 Settlements provides a WASL of [redacted] for FY2015.[230]

Table 94: CAN Indirect Assets and Core Indirect Assets WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
C?10	1152	Indirect	[redacted]										
C?10	1156	Indirect											
C?10	1157	Indirect											
C?10	1164	Indirect											
C?10	1165	Indirect											
C?10	1820	Indirect											
C?10	MT	Indirect											
CA10													
CO10													

[230] Note that separate WASLs for CAN and Core assets were not required as all assets contained in this asset class are presumed to be used by both CAN and Core.

CO01 Switching Equipment – Local

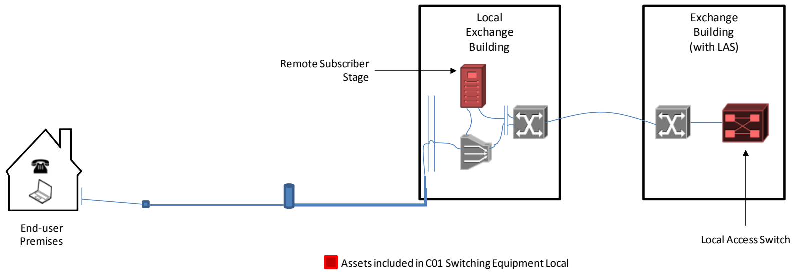
ACCC asset class description

The Core Switching Equipment – Local (CO01) Asset Class contains voice aggregation devices (Remote Switching Stages (RSS), Remote Aggregation Units (RAU)) – including voice line cards, as well as local access switch (LAS) devices. The costs associated with these assets are driven by both the number of end-user services connected and the volume of voice minutes that traverse the equipment. This equipment is used for the provision of fixed line voice services. CO01 comprised [redacted] of the initial RAB value.

Telstra assets included in ACCC asset class

AXE and S12 circuit switched PSTN, the signalling transfer point equipment under the network control layer and associated software.

Figure 61: Assets included in CO01



Telstra asset class description

AXE and S12 circuit switched PSTN

These classes cover hardware and software associated with local PSTN switches. Given that there are a number of associated technologies and products that are tied to the life of this technology, this group is critical in establishing the lives and depreciation impacts for a sizable portion of Telstra's asset base.

Network control layer

This group covers the dedicated call and session control infrastructure for the telephony networks. For historical reasons it does not include the Ericsson and Alcatel Intelligent Network platforms, which are located in the Intelligent Peripherals group.

These platforms act as control points and do not carry actual network traffic between customer endpoints. They are involved in the set-up, take-down and management of sessions.

Telstra WASL FY2015

[redacted]

Rationale

The assets under this asset class have Type of Life as either DoA with a [redacted] service life, or are [redacted] or prior, with the resulting service lives for FY2015 ranging up to [redacted].

Combining these into an average for all Local switching assets, weighted by the FY2014 Settlements provides a WASL of [redacted] for FY2015.

Table 95: Core Local Switching Equipment WASL calculations

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
CO01	SL	Switching Equipment - Local	[redacted]										
CO01	SP	Switching Equipment - Local											
CO01	UL	Switching Equipment - Local											
CO01													

CO02 Switching Equipment - Trunk

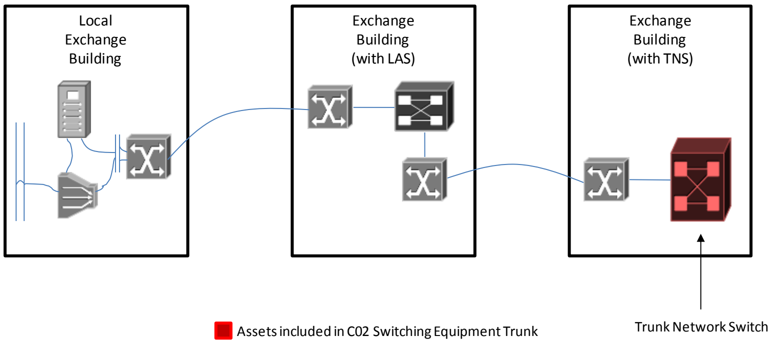
ACCC asset class description

The Core Switching Equipment – Trunk (CO02) Asset Class contains higher level switching equipment – principally used in the provision of STD, international, fixed to mobile and interconnect voice calls. The costs associated with these assets are driven primarily by the volume of voice minutes that traverse the equipment. This equipment is used for the provision of fixed line voice services. CO01 comprised less than [redacted] of the initial RAB value.

Telstra assets included in ACCC asset class

Echo cancellers, transit switching and associated software.

Figure 62: Assets included in CO02



Telstra asset class description

Echo cancellers

Echo cancellers suppress echo on circuit switched calls where there is a significant return-path time delay. This is only required for the PSTN circuit switched services.

This equipment is required for PSTN calls only.

Transit switching

This group covers asset classes associated with the S12 transit switches and specialised AXE switches used in the telephony networks. The technology is the same as that used for local switching, but without the local lines stages. These switches carry traffic between the PSTN, mobile, international and competitor networks. They provide the more extensive networking and enhanced call handling to local switches. Their service lives are currently aligned with the PSTN local switches.

Telstra WASL FY2015

[redacted]

Rationale

The assets under this asset class have Type of Life as either DoA with a [redacted] service life, or are [redacted] or prior, with the resulting service lives for FY2015 of [redacted].

Combining these into an average for all Local switching assets, weighted by the FY2014 Settlements provides a WASL of [redacted] for FY2015. Note that [redacted] of FY2014 settlements were for software for trunk switching, which has an asset life of [redacted].

Table 96: Core Trunk Switching Equipment WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
CO02	ST	Switching Equipment - Trunk	[redacted]										
CO02	UT	Switching Equipment - Trunk											
CO02													

CO03 Switching Equipment - Other

ACCC asset class description

The Core Switching Equipment –Other (CO03) Asset Class contains a minimal amount of miscellaneous other voice switching equipment, used for the provision of the fixed line voice services. CO03 comprised less than [redacted] of the initial RAB value.

Telstra assets included in ACCC asset class

This contains miscellaneous equipment used to support the provision of fixed line voice services.

Telstra asset class description

The only Telstra asset category included in FLSM Asset Class CO03 is ZX. This category includes talking clocks and call diverters. There was no spend in FY2014.

Telstra WASL FY2015

[redacted].

Rationale

The assets under this asset class are [redacted] or prior.

As there were no FY2014 Settlement amounts against the assets in this asset class, the WASL is calculated to be [redacted].

Table 97: Core Other Switching Equipment WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
CO03	ZX	Switching Equipment - Other	[redacted]										
CO03													

CO04 Inter-exchange Cables

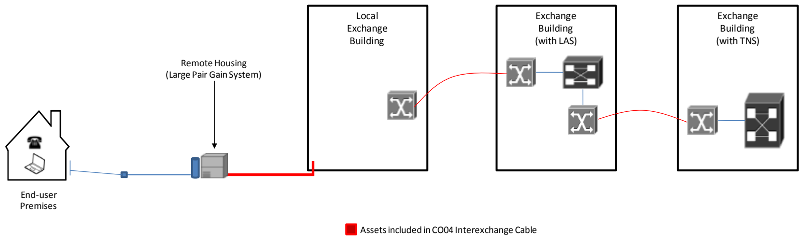
ACCC asset class description

The Core Inter-exchange Cables Asset Class (CO04) contains the fibre optic cables that connect Telstra's exchange buildings and other telecommunications infrastructure. These assets include fibre cables used to connect remote voice switching and ADSL broadband hardware DSLAMs deployed in the CAN to the local exchange. These assets are used for the provision of the fixed line voice and broadband services, as well as for other services. CO04 comprised [redacted] of the initial RAB value.

Telstra assets included in ACCC asset class

Optical fibre cable.

Figure 63: Assets included in CO04



Telstra asset class description

This group contains assets associated with the physical cable used for optical transmission in the core network. It does not include the electronics used in conjunction with that cable.

Optic fibre cable is a relatively stable transmission medium that shows no sign of natural degradation. The current service life appears to be conservative, with a number of assets approaching the end of their nominal life.

Telstra WASL FY2015

[redacted]

Rationale

All Inter exchange cable assets have a Type of Life as DoA, and a service life of [redacted]

Table 98: Core Inter-exchange Cables WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
CO04	BO	Inter-exchange Cables	[redacted]										
CO04													

CO05 Transmission Equipment

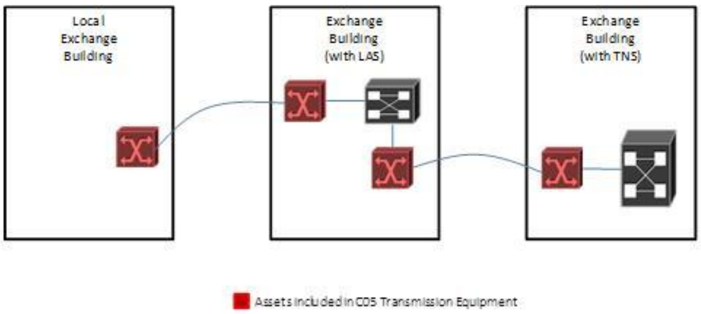
ACCC asset class description

The Core Transmission Equipment (CO05) Asset Class contains predominantly SDH and DWDM as well as PDH transmission equipment (as well as other transmission equipment used to support both PDH and SDH systems). These assets are used in the provision of fixed line voice and broadband services, as well as other services. CO05 comprised [redacted] of the initial RAB value.

Telstra assets included in ACCC asset class

Common synchronisation network, PDH transmission, SDH transmission, DWDM transmission, transmission equipment spares, network huts and associated software.

Figure 64: Assets included in CO05



Telstra asset class description

Common synchronisation network

This group covers technologies associated with the production and distribution of common time and frequency references throughout Telstra's networks. These are required for accurate billing (a regulatory requirement), as well as the efficient management of Telstra's networks.

PDH transmission

This group contains assets used to provide PDH transmission over copper and optical cables. This technology predates the SDH and DWDM equipment that now predominates. The majority of this equipment was acquired prior to 2007.

SDH transmission

This group contains equipment used to provide bearers for a variety of Telstra products and services. It is an older technology, though still being deployed. SDH infrastructure was originally deployed to support circuit switched networks and provides core network transport.

There are a number of generations of SDH equipment in Telstra's network from different vendors.

- Siemens (Now Nokia Siemens Network) SL Series 1 Line Equipment installed between 1994 and 1997.
- Siemens SL Series 2 (SLD) and WL Line Equipment installed between 1999 and 2007.
- GPT/Marconi (now Ericsson) SMA equipment (There were some purchases of this equipment via Siemens prior to 2004.
- Ericsson OMS installed from 2005-Present.

These classes are currently end dated, except for the following classes which have a conventional service life of [redacted]:

- SD8CAPIN and US8CAPIN (financial classes only).
- US1SOFTW, which is the software class for SDH and DWDM.

DWDM transmission

This group contains equipment from a number of vendors used to provide bearers for a variety of Telstra products and services. It is a newer, more flexible technology than SDH, and is the predominant choice in green field installations. Growth in existing sites may utilise SDH or DWDM.

The service life settings for these classes are currently [redacted], with the following exceptions:

- SW1OAD32 Optical Add/Drop Mux has a service life of [redacted].
- SW6EMNGR Element Manager has a service life of [redacted].

TS

TS contains transmission equipment spares and had [redacted] in FY2014.

Network huts

This group contains small portable buildings used to house a number of different technologies, including but not limited to local PSTN switches, mobile base stations, radio and optical transmission equipment.

Telstra WASL FY2015

[redacted]

Rationale

CSN assets have a Type of Life as DoA, and a service life of between [redacted].

PDH assets are [redacted] with a resulting service life for FY2015 of [redacted] except for line cards and racks, which have a Type of Life as DoA, and a service life of [redacted]

SDH assets are mostly [redacted] or prior, except for one item which has a Type of Life as DoA, and a service life of [redacted], The resulting service life for SDH assets is [redacted] years for FY2015.

DWDM and transmission software assets have a Type of Life as DoA, and a service life of [redacted]

Network hut assets have a Type of Life as DoA, and a service life of [redacted]

Combining these into an average for all transmission assets, weighted by the FY2014 Settlements provides a WASL of [redacted] for FY2015.

Table 99: Core Transmission Equipment WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
CO05	CS	Transmission Equipment	[redacted]										
CO05	PD	Transmission Equipment											
CO05	SD	Transmission Equipment											
CO05	SW	Transmission Equipment											
CO05	US	Transmission Equipment											
CO05	ZT	Transmission Equipment											
CO05													

CO06 Core Radio Bearer Equipment

ACCC asset class description

The Core Radio Bearer Equipment (CO06) Asset Class contains core radio bearer equipment used to deliver transmission services (i.e. SDH and PDH-based services) in areas without fibre optic cable (CO04). These assets are generally used in regional and remote areas and support the provision of transmission services (and, in turn, those services that rely on Transmission Equipment). CO06 comprised [redacted] of the initial RAB value.

Telstra assets included in ACCC asset class

Radio systems digital point to point.

Telstra asset class description

This group contains radio transmission assets used to provide bearers for Telstra's networks and products.

Telstra WASL FY2015

[redacted]

Rationale

The assets under this asset class include antennas, point to point transmission systems and software, and terminals, and have Type of Life as either DoA or End Date with the resulting service lives for FY2015 ranging [redacted]

Combining these into an average for all Core Radio Bearer assets, weighted by the FY2014 Settlements provides a WASL of [redacted] for FY2015.

Table 100: Core Radio Bearer Equipment WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL	FLSM Asset Class WASL	FLSM Asset Class WASL	FLSM Asset Class WASL	FLSM Asset Class WASL
CO06	BD	Core Radio Bearer Equipment	[redacted]										
CO06			[redacted]										

CO11 LSS Equipment

ACCC asset class description

The Core LSS Equipment (CO11) Asset Class is a service-specific asset class that contains all costs considered relevant to LSS (and no costs relevant to other services). It did not contribute to the initial RAB value (i.e. there are no assets attributed to the class, with all cost being operating expenditure).

Telstra assets included in ACCC asset class

N/A.

Telstra asset class description

N/A.

Telstra WASL FY2015

N/A.

Rationale

There are no service lives for this asset as there is no equipment assigned to this asset class.

CO12 Data Equipment

ACCC asset class description

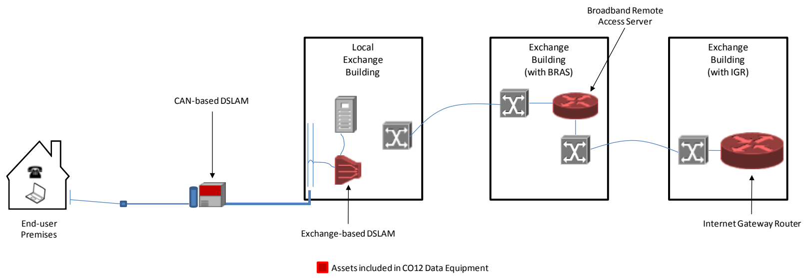
The Core Data Equipment (CO12) Asset Class contains equipment necessary to provide fixed line broadband services (specifically DSL broadband services), including the equipment and software required to route and aggregate DSL traffic. This equipment is used for the provision of the fixed line broadband services – specifically retail and wholesale ADSL and Other DSL services. CO12 comprised [redacted] of the initial RAB value. This Asset Class was added to the FLSM during the 2013 WDSL FAD process.

Telstra assets included in ACCC asset class

This asset class includes assets from Telstra's core data network, XDSL (some XA and XP items) and associated software. Note that not all of the assets which Telstra classifies as Data Equipment are included in this Asset Class – specifically excluded are assets which are used only for the Dedicated and Digital Data Networks.

The Data Equipment Asset Class contains equipment necessary to provide fixed line broadband services (specifically DSL broadband services), including the equipment and software required to route and aggregate DSL traffic appropriately. Examples of this equipment include IP routers and switches, DSLAMs (ISAMs, ASAMs etc.) and data network software. Importantly, the Data Equipment Asset Class does not contain equipment used by non-ADSL data services, such as ISDN.

Figure 65: Assets included in CO12



Telstra asset class description

DX

This group contains equipment included in Telstra's core data network. This equipment includes BRASes, core routers, servers and gateways. Note that not all of Telstra's assets under this asset category are included in the CO12 Data Equipment Asset Class.

XDSL (XA, XP)

This group includes electronics and related assets associated with the provision of DSL services. Included are the DSLAMs and CMUXes (and the newer ASAMs and ISAMs) which are used to provide DSL access. Note that not all assets categorised as XP are included in the CO12 Data Equipment Asset Class. XP assets which are associated with pair gains systems are included in CA04 Pair Gains Systems.

Telstra WASL FY2015

[redacted]

Rationale

The assets under this asset class include core data switches, routers, gateways, and software, ISAMs, ASAMs and CMUXes, and xDSL cards and racks, and have Type of Life as either DoA or End Date with the resulting service lives for FY2015 ranging [redacted].

Combining these into an average for all Data equipment assets, weighted by the FY2014 Settlements provides a WASL of [redacted] for FY2015.

Table 101: Core Data Equipment WASL calculation

FLSM Asset Class	Telstra Category	Description	FY2014 Settlements	WASL weighting FY2015	WASL weighting FY2016	WASL weighting FY2017	WASL weighting FY2018	WASL weighting FY2019	FLSM Asset Class WASL FY2015	FLSM Asset Class WASL FY2016	FLSM Asset Class WASL FY2017	FLSM Asset Class WASL FY2018	FLSM Asset Class WASL FY2019
CO12	DX	Data Equipment	[redacted]										
CO12	UV	Data Equipment											
CO12	UX	Data Equipment											
CO12	XA	Data Equipment											
CO12	XPD	Data Equipment											
CO12													

Appendix 8: Allocation of transmission costs study

Overview

In the Cost Allocation Framework (**CAF**) within the FLSM, Telstra allocates costs for the Transmission Equipment Asset Class by first allocating costs to different transmission technologies (PDH, SDH and WDM), then allocating costs to different service platforms that make use of transmission equipment and finally to the different fixed line services that make use of a sub set of these platforms.

A crucial judgement in this process is how to convert the usage of transmission equipment by different service platforms to a common base to then enable the allocation of costs among those platforms (and ultimately to services).

Telstra considers that the approach it has applied – in which a “capacity conversion” factor is applied – is highly conservative. This is in the sense that the use of the capacity conversion factor results in far less cost being borne by regulated fixed line services as compared to other, non-regulated network services, when compared to alternative and reasonable approaches.

In this appendix, we set out the manner in which the FLSM allocates transmission costs to the PSTN and ADSL by using a methodology based on capacity. We then compare the outcomes of this to a process which would allocate transmission costs using a methodology based on a “cost conversion” factor, which was the approach adopted by Analysys Mason in 2009.

Allocation of transmission costs to the PSTN and ADSL with a capacity based methodology

First, Telstra extracted data from the Transmission Recording and Control System (TRAC)[231] (set out in the table below) which shows the different types of SDH links (by speed) used by different platforms, namely: the shared data platform, the leased data platform, mobiles platform and the PSTN platform.

Table 102: Number of links (SDH) used by different platforms (September 2014)

	Bandwidth (in megabit / gigabit per second)								
	2M	8M	34M	45M	140M	155M	622M	2.5 G	10 G
Shared Data	[redacted]								
Dedicated data									
Mobiles									
PSTN									

In order to apportion costs associated with the SDH transmission equipment across the different service platforms, it is first necessary to convert these different link types to a common denominator. Consistent with common practice, Telstra converts each link to a 2Mbps equivalent.

In making this conversion, [redacted]

The following table shows the 2Mbps-equivalent capacity-based conversion factors used:

231 [redacted]

Table 103: Capacity of different link speeds (SDH)

	2M	8M	34M	45M	140M	155M	622M	2.5 G	10 G
Weighting based on capacity	[redacted]								

After undertaking the above conversion, all different links are aggregated (by capacity) to determine the usage for each platform represented in 2 megabit equivalents. An example is set out in the table below.

Table 104: SDH usage for platforms, 2Mbps-equivalents (capacity conversion) (September 2014)

Service platform	Capacity based usage	% shared by platform
Shared data	[redacted]	
Dedicated data		
Mobiles		
PSTN		

It should be noted that in allocating transmission costs, only data on service-platform links are used.

In order to "unpack" the proportion of ADSL services within the Dedicated data and Shared data service platforms, further allocation information is used. The ADSL service accounts for a proportion of these platforms, along with other services, as set out in the following table.

Table 105: ADSL as proportion of capacity for the shared data and dedicated data platforms

Data Equipment assets (DX) allocators	Capacity based usage
Shared Data	[redacted]
Dedicated Data	[redacted]

*The ADSL allocator in the Shared Data platform is from Telstra's NECTAR model.
** The ADSL allocator in the Dedicated Data platform is calculated by dividing the PSTN Broadband network usage [redacted] in September 2014) by the Dedicated Data platform usage ([redacted] [redacted] equivalent). The PSTN Broadband network usage is the backhaul transmission for CMUX DSLAMs and is from detail TRAC information.

Based on the above analysis, the following table sets out the share of SDH costs allocated to PSTN, ADSL and other services (non-fixed line services) calculated through the use of capacity conversion factors.

Table 106: ADSL, PSTN and Others as proportion of SDH for FLSM (capacity based conversion)

	As a percentage of SDH transmission
	[redacted]
Shared Data	
Dedicated Data	
Mobiles	
PSTN	
Total	

Comparing a capacity based approach to allocation with a “cost conversion” factor

Analysys Mason stated that its fixed LRIC cost model: [232]

> *considers the number of units of a single transmission speed needed to be deployed to meet the number of E1 VCs required. 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* [redacted] *with respect to a quadrupling of speed, i.e. an STM-4 is approximately* [redacted] *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.*

Unlike the approach Telstra has adopted, Analysys Mason recognise that the costs of higher capacity transmission links will not scale in proportion to growth in capacity. This is intuitive as if a higher capacity link costs as much as an equivalent capacity collection of smaller links, it would render uneconomic the use of higher capacity, more technically efficient links where that capacity as required. It is obvious that this cannot be the case in practice.

Rather than use a capacity conversion factor, Analysys Mason suggest the use of a cost conversion factor in which the cost of a link will increase [redacted] for a quadrupling of capacity. In other words, an [redacted]. Under Telstra's approach, the multiple is [redacted] times.

In order to compare the approach adopted by Analysys Mason of using a cost conversion factor to the approach adopted by Telstra within the CAF, we ran an analysis allocating transmission costs using the Analysys Mason methodology.

The following table shows the 2Mbps-equivalent cost-based conversion factors used:

Table 107: Conversion of SDH link speeds to cost weightings

	2M	8M	34M	45M	140M	155M	622M	2.5 G	10 G
Weighting based on cost	[redacted]								

The table below sets out the number of 2Mbps-equivalent links in use by individual service platforms based a cost-conversion factor.

Table 108: Proportion of cost shared by the platforms other than infrastructure

Service platform	Cost	%
Shared data	[redacted]	
Dedicated data		
Mobiles		
PSTN		

In order to “unpack” the proportion of ADSL services within the Dedicated data and Shared data service platforms, further allocation information is used. The ADSL service accounts for a proportion of these platforms, along with other services, as set out in the following table. Note, the ADSL (DX) allocator for Dedicated Data is different to that set out above, as we have applied the cost conversion factor in the calculation of the relevant percentage. No change is recorded in the allocation of Shared Data to ADSL services.

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

Table 109: ADSL as proportion of cost for the shared data and dedicated data platforms

Data Equipment (DX asset) allocators	Cost based
Shared Data	[redacted]
Dedicated Data	[redacted]

** The ADSL allocator in the Shared Data platform is from Telstra's NECTAR model.*
*** The ADSL allocator in the Dedicated Data platform is calculated by dividing the PSTN Broadband network usage ([redacted] links in September 2014) by the Dedicated Data platform usage ([redacted] equivalent). The PSTN Broadband network usage is the backhaul transmission for CMUX DSLAMs and is from detail TRAC information.*

Based on the above analysis, the following table sets out the share of SDH costs allocated to PSTN, ADSL and other services (non-fixed line services) calculated through the use of cost conversion factors.

Table 110: ADSL, PSTN and Others as proportion of SD asset for FLSM

Cost based	As a percentage of the SD asset			
SD assets	Percent contribution	ADSL share	PSTN share	Others
Shared Data	[redacted]			
Dedicated Data				
Mobiles				
PSTN				
Total				

Implications of this comparison

As can be seen, the cost based methodology is less conservative than Telstra's existing methodology because although it allocates less cost ([redacted]) to ADSL compared with the capacity based methodology ([redacted] it allocates much more cost to the PSTN ([redacted] compared to the use of a capacity based methodology ([redacted] Overall, under the cost based approach, [redacted] of costs is allocated to PSTN and ADSL compared to the allocation of [redacted] under a capacity based approach. This is shown in the table below.

Table 111: Comparison of cost allocation to PSTN and ADSL

Methodology	As a percentage of the SD asset		
	ADSL share	PSTN share	**Total**
Telstra's existing capacity based methodology	[redacted]		
Analysys Mason cost based methodology			

The conservative impact of Telstra's approach is fully apparent if one applies the alternative, Analysis Mason platform allocations to the FLSM. If the Analysys Mason cost allocation factors were applied, the costs attributed to the regulated wholesale services would increase by [redacted] million dollars over the period FY2016-2019.

Appendix 9: Allocation of costs associated with Asset Class CO09

Introduction

The FLSM CO09 Network Buildings & Support FLSM asset class represents in the exchange buildings that are used by all fixed line services as well as many other services. Telecommunication equipment within exchange buildings is situated on equipment racks – regularly-sized spaces that facilitate the connection of the equipment to power and cooling facilities within the exchange building as well as interconnection other network equipment, including copper cables used to connect to the premises of end users served on the fixed line network.

The Cost Allocation Framework (CAF) within the FLSM adopts the following approach for the allocation of costs In order to allocate CO09 Network Buildings & Support costs to fixed line services and “other” uses, data on rack-space by exchange is used. The number of racks used for fixed-line services and other uses in each exchange is a reasonable proxy for use of exchange space by these two service categories. A report from Telstra’s MITS database sets out information on the aggregate number of Telstra equipment racks in each exchange building (used to support either the fixed line services and associated network equipment or other uses), as well as information on the number of racks in each exchange installed by third parties.

The CO09 assets, in addition to being used to support Telstra supplied retail and wholesale services, are also accessed and used by third-parties; including by access seekers using equipment space in conjunction with the unbundled wholesale access services (ULLS and LSS) through the TEBA service as well as by NBN Co. The use of these facilities in the supply of a broad range of Telstra services, as well as their use by third parties, impacts on the estimation of cost allocators. A mixed-allocation approach is adopted, whereby costs with respect to these asset classes attributable to third-party access are calculated, with the remaining costs allocated to individual fixed line services on the basis of a general allocator.

Telstra adopted a general allocator as at the time the allocation framework was developed there was insufficient data available to practically determine a fully allocated cost allocation for the relevant Asset Class CO09. Each regulated fixed line wholesale service receives an allocation of CO09 costs based on the proportion of costs allocated using the specific allocators in respect of the primary Core FLSM Asset Classes. The methodology for this allocation was described in Telstra’s Cost Allocation Framework.

The Draft Decision queried whether the general allocator for CO09 costs to the declared fixed line services adequately separates out the costs associated with fixed line services from the costs associated with other uses.[233]

In this annexure, and based on a detailed extract of almost one million sub-racks within Telstra exchanges, Telstra estimates a specific allocator for CO09 costs to the declared fixed line services (Section 2). It then compares this allocator against the general allocator for CO09 which it has used for FLSM purposes. A comparison of the general allocator for C009 used in the FLSM to the specific allocator estimated in Section 2 below shows that the general allocator is highly conservative estimate for the purposes of allocating CO09 costs to the declared fixed line services.

Calculation of a specific allocator for COO9

For the purpose of this analysis, detailed data on the type and location of network equipment assets (sub-racks of equipment) was sourced and extracted from the MITS database which are installed and located at Telstra’s exchange buildings.

Based on information within the MITS database on the network category, sub category and micro-category a count of network sub-racks within Telstra exchanges was generated. The category,

[233] Page150, Draft Decision.

subcategory and micro-category information was then used to identify these assets to particular Telstra asset categories, and then mapped to their relevant FLSM assets.

This detailed sub-rack data is set out in Table 112 below.

Table 112: [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Notes to table: (1) Network Category, Network Sub Category and Network Micro Category columns are used to identify each unique network equipment sub rack located at Telstra's exchange buildings. (2) No. sub racks column represents the sum of the sub-racks of equipment throughout Telstra's exchange building network. (3) The FLSM Mapping shoes the mapping of network equipment assets to the FLSM asset classes CA03, CA05, CO01, CO05, CO06, CO09 and CO12. It should be noted that in undertaking the mapping a degree of judgement was exercised in determining relevant FLSM Asset Classes for the various equipment based on equipment descriptions. For simplicity, relevant PSTN switching assets were entirely allocated to the CO01 (Local Switching) asset class. Although this allocation is not strictly correct (some of these assets will map to CO02 Trunk Switching), the impact on the analysis is not material. (4) #N/A in the FLSM Mapping column represents items which are out of scope from the FLSM Asset Classes.

Table 113 below sets out the tabulation of network sub-racks mapped to the relevant FLSM Asset Classes, and also includes the number for non-FLSM assets.

Table 113: Allocation of network equipment assets to FLSM Asset Classes & other

FLSM asset class	# sub racks of equipment
CAN Other Cables (CA03)	[redacted]
CAN Radio Bearer Equipment (CA05)	
Core Radio Bearer Equipment (CO06)	
Data Equipment (CO12)	
Network Buildings/Support (CO09)	
Switching Equipment – Local (CO01)	
Transmission Equipment (CO05)	
out of scope	
Total	

The above table highlights that the most common types of equipment within Telstra exchange building are PSTN switching equipment and power, air-conditioning and other support infrastructure and equipment within the FLSAM Asset Class CO09 Network Buildings and Support.

For the purposes of estimating an allocator for the CO09 Asset Class, the proportion of total network equipment mapped to the CO09 Asset Class is distributed proportionally among the other identified equipment types. In the context of cost allocation, this assumes that other network equipment sub racks within the exchange will have an equivalent cost relationship to the support infrastructure. This distribution is set out in the table below:

Table 114: Proportion of CO09 sub-racks used to support other relevant FLSM assets

FLSM asset class	Percentage of CO09 sub-racks used to support FLSM asset
CAN Other Cables (CA03)	[redacted]
CAN Radio Bearer Equipment (CA05)	
Switching Equipment – Local (CO01)	
Transmission Equipment (CO05)	
Core Radio Bearer Equipment (CO06)	
Data Equipment (CO12)	
#N/A (out of scope)	
Total	

The above table shows that the various FLSM Asset Classes (other than CO09) comprise almost [redacted] of Telstra sub racks in exchange buildings, other than those used to support common infrastructure services.

In order to calculate an allocator for CO09 on the basis of the relative space u (as measured by number of sub racks used) used by different services, Telstra relies on the other FLSM Asset Class specific allocators. These allocators are then weighted by the proportion of sub-racks occupied by each FLSM Asset Class and summed to determine the share of CO09 costs attributable to the relevant services.

The cost allocations to the wholesale regulated services for FY2015 from version 2 of the FLSM are set out below:

Table 115: Asset Class specific allocators for relevant FLSM assets, FY2015

Code	FLSM Asset Class	ULLS	ULLB13	ULLB4	WLR	PSTN	LCS	LSS	WADSL	Total
CA03	Other cables	[redacted]								
CA05	CAN Radio Bearer Equipment									
CO01	Switching Equipment - Local									
CO05	Transmission Equipment									
CO06	Core Radio Bearer Equipment									
CO09	Network Buildings/Support									
CO12	Data Equipment									

The sum of allocations for the set of regulated fixed line services is then multiplied by the share of non-CO09 Telstra sub-racks occupied by the respective asset class. These weighted allocations are then summed, as set out in the table below.

Table 116: Specific allocator for C009

FLSM asset class	Percentage of Telstra sub-racks used to support FLSM Asset Classes	Sum of cost allocations to the wholesale fixed line services	Calculation result
	[A]	**[B]**	**[A] x [B]**
CAN Other Cables (CA03)	[redacted]		
CAN Radio Bearer Equipment (CA05)			
Switching Equipment – Local (CO01)			
Transmission Equipment (CO05)			
Core Radio Bearer Equipment (CO06)			
Data Equipment (CO12)			
Total specific allocator for CO09			

The table above shows that on the basis of the relative proportion of exchange building space (as measured by sub racks) occupied by different FLSM Asset Classes, the calculated allocation of costs for CO09 to the set of regulated fixed line services is [redacted].

In comparison, the allocation of costs to the same set of services for CO09, but using the general allocator is [redacted]

A comparison of the general allocator for C009 ([redacted] to the specific allocator estimated in Section 2 above ([redacted] shows that the general allocator is a reasonable, and in fact conservative estimate for the purposes of allocating CO09 costs to the declared fixed line services.

Appendix 10: Expert report of Jeff Balchin

Provided as a separate document.

Appendix 11: Expert report of Keith Lockey (asset disposals)

Provided as a separate document.

Appendix 12: Expert report of Keith Lockey (operating cost reconciliation)

Provided as a separate document.

Appendix 13: Expert report of Mike Smart

Provided as a separate document.

Appendix 14: Expert report of Nigel Attenborough

Provided as a separate document.

Appendix 15: Statement of [redacted]

Provided as a separate document.

Appendix 16: Statement of [redacted]

Provided as a separate document.

Appendix 17: Statement of [redacted]

Provided as a separate document.

Appendix 18: Broker reports referred to in WACC chapter

Provided separately.

Appendix 19: Ernst & Young service live review process document

Provided as a separate document.

Appendix 20: Fixed Services Forecast Model v 1.2

Provided as a separate document.