



Incentives in NBN Co's proposed SAU variation



Frontier Economics | 21 March 2022



Frontier Economics Pty Ltd is a member of the Frontier Economics network, and is headquartered in Australia with a subsidiary company, Frontier Economics Pte Ltd in Singapore. Our fellow network member, Frontier Economics Ltd, is headquartered in the United Kingdom. The companies are independently owned, and legal commitments entered into by any one company do not impose any obligations on other companies in the network. All views expressed in this document are the views of Frontier Economics Pty Ltd.

Disclaimer

None of Frontier Economics Pty Ltd (including the directors and employees) make any representation or warranty as to the accuracy or completeness of this report. Nor shall they have any liability (whether arising from negligence or otherwise) for any representations (express or implied) or information contained in, or for any omissions from, the report or any written or oral communications transmitted in the course of the project.



Contents

1	Introduction and purpose	4
1.1	Variation to the Special Access Undertaking	4
1.2	Purpose of this report	4
1.3	NBN Co's proposals	5
1.4	The ACCC's initial observations and comments	6
2	Efficiency and the long-term interests of end users	7
2.1	Allocative efficiency	7
2.2	Productive efficiency	8
2.3	Dynamic efficiency	9
3	Implications of NBN Co's regulatory proposals for economic efficiency	11
3.1	Will NBN Co have incentives to set efficient prices?	11
3.2	Will NBN Co have incentives to incur only efficient costs?	17
3.3	Will NBN Co have incentives to invest efficiently?	17
4	Conclusions	22
A	The reasonableness criteria	24



1 Introduction and purpose

1.1 Variation to the Special Access Undertaking

1. NBN Co will submit a variation to its special access undertaking (**SAU**) to the Australian Consumer and Competition Commission (**ACCC**) in 2022. This variation will propose a regulatory framework for use in periodic regulatory resets (replacement modules) that will apply from 2023 until the expiry of the SAU in 2040.
2. The ACCC is required to assess particular terms of the variation against the “reasonableness criteria” specified in Part XIC of the *Competition and Consumer Act 2010* (Cth) (**CCA**).¹ The reasonableness criteria (see **Annex A**) includes promoting the long-term interests of end-users (**LTIE**), including whether the arrangements encourage the efficient use of, and investment in, infrastructure.
3. The ACCC has been facilitating discussions between NBN Co and access seekers via a series of working groups. The ACCC released a summary of the working group outcomes in December 2021, which included ACCC comments on the ‘key outcomes’ in Attachment A of its paper.² From these comments, we understand that the ACCC has concerns with elements of NBN Co’s proposals that have been discussed, including that a revenue cap with an ‘unders and overs’ mechanism that would allow recoupment of under- or over-recoveries of allowed revenues in each regulatory period is unlikely to provide appropriate incentives for efficient pricing or investment. The ACCC appears to favour a weighted-average price control (**WAPC**) reflecting its view that it would provide a stronger profit motive for efficient price restructuring³ and so have better incentive properties than a revenue control.

1.2 Purpose of this report

4. NBN Co has asked Frontier Economics to consider whether, under the key revenue and price control aspects of its proposed SAU arrangements, NBN Co will face incentives to price efficiently, develop new products and incur expenditure efficiently, which are central to considerations around the reasonableness of NBN Co’s proposals.

¹ Subsection 152CBD(2) of the CCA requires that the ACCC must not accept an SAU unless the ACCC is satisfied that:

- the terms and conditions of the SAU in relation to compliance with the Category B SAOs in section 152AXB are consistent with those obligations and are reasonable;
- particular types of conduct specified in the SAU promote the long-term interests of end-users and particular related terms and conditions are reasonable; and
- the SAU is consistent with any Ministerial pricing determinations.

In turn, subsection 152AH of the CCA sets out matters to which regard must be had when determining whether particular terms and conditions are reasonable.

² ACCC, *NBN Co Special Access Undertaking: Summary of industry working group outcomes*, December 2021.

³ In particular, a WAPC provides a benefit for a regulated firm that is able to restructure prices in ways that result in demand growth above that forecast; for example, by reducing prices on demand-elastic services and increasing them on demand-inelastic services.



5. The paper proceeds as follows:
- the remainder of section 1 highlights NBN Co's specific proposals and the ACCC's initial observations and comments on NBN Co's proposals
 - section 2 outlines the relevant economic background relating to the legislative criteria
 - section 3 analyses the likely effects of NBN Co's proposals on its incentives⁴
 - section 4 concludes.

1.3 NBN Co's proposals

6. The relevant elements of NBN Co's SAU variation proposal for this paper are the following:
- A revenue cap over NBN Co's core regulated service revenues for each regulatory period that will be derived from the application of a building block model (**BBM**), including:
 - A recovery of standard building block costs incurred in connection with core regulated services including allowances for operating expenditure, a return of capital (depreciation) and a return on capital derived from the regulatory asset base (**RAB**), and tax expenses.
 - An allowance for the annual drawdown of accumulated losses (known as the Initial Cost Recovery Account, or **ICRA**) incurred in connection with core regulated services that is consistent with longer-term forecasts of consumers' willingness to pay, and sufficient to deliver and sustain an investment grade credit rating and provide a dividend to shareholders.
 - Price caps on core regulated services, noting that there will be minimal allowance for real price growth in services with no separate connectivity virtual circuits (**CVC**) pricing components.⁵
 - An 'unders and overs' mechanism, whereby 50 per cent of the difference between actual revenues and the forecast revenue cap in a regulatory period would be carried forward in an NPV-neutral manner.
 - A new regulatory approach to cost oversight that provides for:
 - *ex ante* oversight by the ACCC of opex on the efficiency and prudence of costs to be incurred⁶, with NBN Co bearing the risks of opex cost over-runs
 - *ex ante* and *ex post* oversight by the ACCC of capex, with NBN Co bearing the risk of capex over-runs not being approved by the ACCC.
7. NBN Co has also proposed a mechanism for future transition from a revenue cap and individual price controls to a WAPC. We understand this reflects NBN Co's view that a WAPC is not suitable until demand is more stable and predictable than at the current time.

⁴ Note that our focus in this paper is on NBN Co's incentives to price and invest efficiently, not on the implications of its proposals for efficient investment by access seekers.

⁵ NBN Co's proposal is that for the first regulatory cycle (two years), the price changes can be up to CPI + 3%, while for subsequent regulatory cycles the allowance increase is the greater of CPI or 3%.

⁶ Noting there are some limits with respect to expenditure incurred to meet Government policy objectives.



1.4 The ACCC's initial observations and comments

8. The ACCC has been facilitating discussions between NBN Co and access seekers via a series of working groups. The ACCC released a summary of the working group outcomes in December 2021.⁷ The ACCC's summary comments included five key outcomes which it considers NBN Co's variation should achieve.
9. Although none of the ACCC's summary comments bear directly on the question we are asked, the ACCC does offer a range of comments later in Attachment A of its paper that are directly relevant to NBN Co's proposals. These comments included that:
 - In assessing any SAU that is proposed, the ACCC would likely closely consider the extent to which costs are being disproportionately imposed on future users and whether this will lead to under-utilisation of the NBN as end-users switch off⁸ or select lower quality service offerings (pp. 1-2).
 - The revenue constraint with an 'unders and overs' mechanism is of concern because it does not create the right incentives to maximise the use of the NBN (p. 2). The ACCC suggests that under a pure revenue cap, if demand is lower than expected, future prices can be increased (via an 'unders' mechanism) in order to meet the revenue target. This means that over time NBN Co will earn the allowed revenue in each regulatory period regardless of the utilisation of the network, or, in other words, by transferring all demand risk onto customers, it reduces NBN Co's incentive to mitigate that demand risk through price or other measures. Indeed, the ACCC further states that "a revenue cap can dull incentives to outperform revenue expectations via increased output and also to encourage a reduction in output to lower any variable costs and thereby maximise profits".⁹
 - The ACCC's view is that a WAPC over a revenue cap provides stronger incentives on NBN Co to meet or outperform its demand forecasts and thereby promote the use of the NBN, both in terms of the number of connections and utilised bandwidth (to the extent that there is a CVC component). It also views a WAPC as providing more flexibility to adjust prices to achieve efficient pricing outcomes than is likely to be available under individual product price caps (p. 13).
10. Although the focus of our paper is the efficiency incentives from NBN Co's regulatory proposals, we offer some analysis of the ACCC comments in the following sections.

⁷ ACCC, *NBN Co Special Access Undertaking: Summary of industry working group outcomes*, December 2021.

⁸ We take this to mean disconnect from NBN Co's networks.

⁹ ACCC, *NBN Co Special Access Undertaking: Summary of industry working group outcomes*, December 2021, Attachment A, p. 13.



2 Efficiency and the long-term interests of end users

11. In assessing NBN Co's SAU variation, the ACCC will consider whether particular terms and conditions in the proposed variation are reasonable, having regard to whether the terms and conditions promote the LTIE and other reasonableness matters (see Annex A).
12. A key consideration for the reasonableness criteria is economic efficiency. One of the reasonableness criteria is promoting the LTIE, in respect of which one of the sub-criteria is encouraging the economically efficient use of, and the economically efficient investment in, infrastructure. Further, another of the reasonableness criteria is whether the proposed access terms would promote the economically efficient operation of a carriage service, a telecommunications network or a facility.
13. It is well established by the ACCC and the Australian Competition Tribunal that references to economic efficiency should be considered in relation to the achievement of allocative, productive and dynamic efficiencies.¹⁰ In the following sections we explain how efficiencies are relevant to the incentives created by NBN Co's SAU variation.

2.1 Allocative efficiency

14. Allocative efficiency refers to how well resources are allocated between competing uses. Most or all economists would agree that:
 - a allocative efficiency will be maximised¹¹ and the "first best" achieved when price is equal to the marginal cost of supply, because this would facilitate all sales that would make buyer and seller better off (and so maximise the sum of consumer and producer surplus), but that
 - b allocative efficiency for an infrastructure provider with large fixed and sunk costs is a constrained maximisation problem.¹² "Second best" efficiency is maximised through setting prices as close to marginal costs as possible while still meeting the constraint that prices allow for the seller to recover sunk and future costs, so long as these are efficient costs. Such prices would promote the most efficient use of the network possible while being consistent with the recovery of costs necessary for the promotion of efficient investment.
15. There is more room for disagreement about how best to set allocatively-efficient prices in practice. Many combinations of prices for a multi-output firm like NBN Co can meet the cost recovery condition. Acquiring the information to charge the most efficient prices which cause the least economic distortion may be costly or impossible to obtain, and require extensive price

¹⁰ See for example ACCC, *Final decision: NBN Co Special Access Undertaking*, December 2013, p. 49, and *Re Telstra Corporation Limited (ACN 051 775 556) [2006]*, ACompT 4 (2 June 2006), at 94.

¹¹ Presuming no externalities or second best considerations are relevant.

¹² While this view was controversial in the first part of the 20th century, Coase's 1946 paper and subsequent work identified the likely inferiority of marginal cost pricing supported by government subsidies to recover fixed and common costs. See R. Coase, "The Marginal Cost Controversy", *Economica*, 13(51), 1946, pp. 169–82.



discrimination.¹³ There will also potentially be trade-offs between the promotion of allocative efficiency and other objectives – such as the achievement of greater equity of access through uniform national wholesale pricing.¹⁴

16. It is beyond the scope of this paper to cover or summarise the literature of efficient pricing for infrastructure services with large fixed and sunk costs. However, the economic literature¹⁵ is clear that for a firm like NBN Co, the setting of efficient prices cannot simply be derived from a high level model of efficient costs such as a building block model. Rather:
- Efficient pricing will require some consideration of the marginal costs of access and usage, which define the 'first best' in the sense that all units would be supplied, where willingness to pay exceeds the opportunity cost of supply.
 - Efficient pricing will not necessarily involve the setting of *either* access or usage prices at marginal costs, as the number of network users is not invariant to access prices (i.e., demand for access is price-elastic).¹⁶ There is manifest evidence in Australia that not all users will connect to NBN Co's networks regardless of the level of the access price.¹⁷
 - Efficient pricing does require the efficient allocation of fixed and sunk costs between services and between time periods (including through use of Ramsey pricing principles that account for differing price elasticities between services and over time¹⁸).
 - Efficient pricing is likely to require a pricing schedule that responds to differences in demands via non-linear pricing that allows for different combinations of usage and access prices.¹⁹ This might reflect, for example, that different customers respond to different product attributes differently, with gamers valuing speed and quality factors very highly while those on fixed incomes focus more on access charges.

2.2 Productive efficiency

17. The concept of productive efficiency refers to whether the regulated firm produces at least feasible cost. In practical regulatory situations, knowledge of lowest feasible cost is limited by information asymmetry between regulated firms and regulators – regulated firms will always

¹³ Baumol and Bradford were among the first to identify the utility of applying the principles of Ramsey-Boiteaux pricing as a solution to pricing. See Baumol & Bradford, "Optimal departures from marginal cost pricing", *American Economic Review*, 60(3), 1970, pp. 265–83.

¹⁴ That is, while the structure of costs might support prices that differ by location, this might be considered to lead to inequitable access outcomes.

¹⁵ See for example, K. Train, *Optimal Regulation: The Economic Theory of Natural Monopoly*, MIT, 1991, and J. J. Laffont and J. Tirole (2000), *Competition in Telecommunications*, MIT, 2000.

¹⁶ The 'Coase solution' to the problem of marginal cost pricing involves a two-part tariff - setting usage charges at marginal costs and recovering all other fixed and sunk costs in fixed charges. However, for a single two-part tariff, this strategy is only feasible where the elasticity of access is zero. If that is not true, then markups on the marginal cost of usage and access will be necessary to allow efficient cost recovery. See Train, *op cit*, pp. 196-200.

¹⁷ Even prior to the deployment of 5G fixed wireless offerings, the ACMA was reporting that 16% of Australian adults were mobile-only for internet at home (with mobile broadband or a mobile phone). See <https://www.acma.gov.au/publications/2020-12/report/mobile-only-australia-living-without-fixed-line-home>.

¹⁸ As per Laffont and Tirole, *op. cit*, pp. 60-67.

¹⁹ For example, using self-selecting tariffs with different combinations of fixed and variable charges. Such tariffs may have both access and usage components that deviate from marginal cost if this can maximise the number of network users and total usage. See Laffont and Tirole, *op. cit*, pp. 68-69.



know more about their costs. Therefore, regulatory arrangements that promote productive efficiency should provide the regulated firm with sufficient *incentive* to incur efficient costs. These incentives can take the form of penalties, rewards or (most likely) both.

18. In real world settings with imperfect information about efficient costs, providing incentives for efficient costs can be produced by delinking allowed revenues from actual costs. For example, by setting *ex ante* cost allowances in line with forecast 'benchmark' costs rather than actual costs, a regulator provides a profit motive for the regulated firm to reduce costs below the benchmark. If the regulated firm can expect to keep a sufficient proportion of these cost savings, it will be incentivised to make the savings, thereby increasing productive efficiency. Of course, if the firm does not produce efficiently, it bears the consequences of that inefficiency. Such incentives can also be reinforced using *ex post* cost review mechanisms.²⁰

2.3 Dynamic efficiency

19. Dynamic efficiency generally refers to how well a firm or market develops new and better production techniques and products.²¹ In the context of regulation, the ACCC has previously highlighted that the achievement of dynamic efficiency brings in explicitly the concept of how the regulated firm should be treated over time.

Dynamic efficiency involves having appropriate incentives for firms to invest, innovate, improve the range and quality of services, increase productivity and lower costs through time.²²

20. Dynamic efficiency requires that firms investing in long-lived infrastructure (to develop new and better production techniques and products) to have a reasonable expectation that they will be able to recover those efficiently-incurred investment costs over time, even once they become sunk:

The approach to access pricing should be cost based and generate, over time, expected revenue for a regulated service or services that is at least sufficient to meet the efficient costs of providing access to those services....This means that the access provider should be able to recover its legitimate costs (operating expenditure, capital expenditure and tax) and earn a reasonable rate of return on its investment. This will ensure that the access provider's legitimate commercial interests are met. It also aims to ensure that economically efficient investment in

²⁰ One caveat should be noted here with respect to NBN Co, as a government-owned corporation. Government-owned corporations may have a range of objectives other than maximising value to shareholders (which is the primary objective of managers of a private corporation). NBN Co is directed by its shareholders to operate commercially, but these incentives may not be as strong as for a private corporation.

²¹ *Application by Chime Communications Pty Ltd (No 2)* [2009] ACompT 2 at 1.

²² ACCC, Review of the 1997 telecommunications access pricing principles for fixed line services Draft report September 2010, fn 8.



regulated infrastructure over the long term is encouraged, thereby promoting dynamic efficiency and the ongoing provision of services to consumers.²³

21. This access pricing approach (or principle) is consistent with the “expected NPV = 0” criterion, reflecting that while there might be various paths for recovery of sunk costs, any path must at least and in expectation compensate the firm for the cost of its investments plus the opportunity costs of the capital invested. Without that expectation, firms will not invest (or will under-invest), and the market will not be dynamically efficient.

²³ ACCC, Review of the 1997 telecommunications access pricing principles for fixed line services Draft report September 2010, p. 13.



3 Implications of NBN Co's regulatory proposals for economic efficiency

22. To assess the incentives likely to be created by NBN Co's proposed regulatory arrangements, we think it is helpful to consider the following three questions related to the elements of allocative, productive and dynamic efficiency discussed in the previous section.
- Will NBN Co have incentives to set efficient prices?
 - Will NBN Co have incentives to incur only efficient costs?
 - Will NBN Co have incentives to invest in the right things at the right time?

3.1 Will NBN Co have incentives to set efficient prices?

23. NBN Co's incentives to set efficient prices depends on two main factors:
- the incentives provided by the market, including competition
 - the incentives provided by its proposed regulatory framework.

3.1.1 Market incentives

24. In its 2013 decision on the SAU, the ACCC recognised that NBN Co would face a high degree of 'revenue sufficiency' risk for most, if not all, of Module 1 (i.e., the period to June 2023).²⁴ In particular, the ACCC stated:

The ACCC considers that NBN Co will face a high degree of revenue sufficiency risk for most, if not all, of Module 1. This is due to NBN Co's initial prices and the expected low initial take-up of NBN services.²⁵

25. The ACCC restated this view in 2015, commenting that this reflected both market pressures driving low initial prices and inability to increase prices:

The ACCC considers that these factors, in combination, provide NBN Co with incentives to price services in a way that encourages the take up of services and increase revenue (to address demand and revenue sufficiency risk), and to invest

²⁴ ACCC, *NBN Co Special Access Undertaking Final Decision*, 13 December 2013, p.96.

²⁵ ACCC, *NBN Co Special Access Undertaking Final Decision*, 13 December 2013, p.96.



in the network efficiently because it will not be able to increase prices above the price controls to recover higher costs.²⁶

26. While NBN Co has completed its initial network build and has been declared 'built and fully operational'²⁷, revenue sufficiency risks remain. As the ACCC is aware, NBN Co already faces competitive pressures, and these pressures appear unlikely to diminish over time due to rapid technological change. In recent years:
- There has been more fixed line competition, with the ACCC noting that since 2016 TPG has continued to operate a vertically-integrated network offering superfast broadband services at rates competitive with NBN-based retail plans whilst delivering comparable speeds.²⁸ Moreover, regulatory limits that may have prevented TPG from expanding its fixed line network footprint and competing more vigorously in wholesale and retail markets appear likely to be lifted in the near future if the ACCC accepts TPG's functional separation undertaking.²⁹
 - The threat of 5G fixed wireless services has moved from the theoretical to the actual³⁰, and three of NBN Co's largest fixed line customers are capable of supplying services and appear to have strong incentives to do so given the much higher contribution margins earned on retail mobile compared to retail fixed services.³¹
 - Threats once seen as longer-term (such as LEO satellites) are now nascent, with Starlink commencing service in Australia and appearing to offer much faster actual median speeds than services delivered using NBN Co's own satellites and, indeed, median fixed broadband speeds.³²
 - With respect to new developments, NBN Co faces competition from Uniti Group, which is functionally separated and does not have any lines of business restrictions. The lines of business restrictions applying to NBN Co mean that Uniti can offer value added services to developers such as content (including free to air TV services) and non-communications services (such as in-building services) that NBN Co is prohibited from supplying. Moreover, NBN Co is under some obligations as the default statutory infrastructure provider of last

²⁶ ACCC submission to the BCR on non-commercial services funding options – final paper, November 2015, p.3, available at: <https://www.accc.gov.au/about-us/consultations-submissions/accc-submissions>.

²⁷ See <https://www.paulfletcher.com.au/media-releases/nbn-declared-built-and-fully-operational>.

²⁸ ACCC, *Superfast Broadband Access Service and Local Bitstream Access Service declaration inquiry – Final Decision*, p. 24

²⁹ As per <https://www.accc.gov.au/regulated-infrastructure/communications/carrier-separation-rules/tpg-joint-functional-separation-undertaking/varied-undertaking-consultation>.

³⁰ Noting that both TPG and Optus advertise their services as alternatives to the NBN, offering unlimited data and high speeds (TPG: <https://www.tpg.com.au/5g-home-broadband>) and Optus (<https://www.optus.com.au/broadband-NBN-Co>).

³¹ For example, Telstra's Full Year 2021 results highlight EBITDA contribution margins of almost 40% for mobile services and around 6% for fixed line - consumer & small business. See Telstra 2021 full year results at D.4, available at: <https://www.telstra.com.au/aboutus/investors/financial-information/financial-results>. TPG also cites "higher margin" fixed wireless services in its reporting, see TPG Telecom Annual Report 2021, p. 7 while its investor presentation cites fixed wireless margins between \$15-\$30 per user, per month and on-net fixed line margins between \$25-\$45 higher.

³² See <https://www.speedtest.net/insights/blog/starlink-hughesnet-viasat-performance-q3-2021/>.



resort, which means it must serve even the smallest and most difficult to serve developments, while its competitors such as Uniti bid only on more lucrative developments.³³

27. The point is not to suggest or debate whether 5G or other potential substitutes will *necessarily* prevent NBN Co from recovering its costs. However, we believe there is sufficient evidence to suggest that NBN Co would need to remain cognisant of the substitution risks posed by inefficient pricing.
28. It may well be true that, consistent with the ACCC's past views³⁴, there will be a significant number of customers for whom 5G, satellite or alternative fixed lines services are not a close substitute³⁵, and so inefficient prices may have little impact on their consumption decisions. However, the focus of NBN Co's attention must be on the effect of wholesale prices at the *margin*. If there are a sufficient number of customers that use relatively little data or value access well below the average user, inefficient pricing (say via an inefficient price structure) may induce sufficient substitution to make cost recovery impossible. Two examples may help to illustrate this point:
 - a TPG has recently indicated that its targets for the 2022 financial year include an increase in on-net fixed wireless customers of 160,000, and on-net fixed line customers of 150,000.³⁶ If successful, we would expect that the vast majority of these customers would be existing NBN Co users.³⁷ Together this shift would represent 310,000 or around 4 per cent of NBN Co's existing 8.5 million premises connected. NBN Co has very high fixed costs and, as a consequence, would not experience material cost reductions from this loss of customers. In other words, losing 4% subscribers would mean NBN Co would still need to recover close to 100% of the cost from 4% less subscribers. Adopting inefficient prices (including by increases prices to attempt to recover lost revenues) will merely compound problems and lead to further competition and customer loss.
 - b It would be ruinous for NBN Co to set prices by simply dividing its regulatory revenue requirement by forecast access volumes to set prices. This would assuredly price out some consumers with lower willingness-to-pay and cause others to substitute to inferior quality services with lower fixed charges, and so lowering revenue.³⁸ Rather, NBN Co must pursue more sophisticated pricing strategies that account for variations in demand and willingness to pay by (i) different sets of users and (ii) the same users over time. This allows NBN Co to

³³ The telecommunications in new developments policy was revised in 2020 and is available at: <https://www.infrastructure.gov.au/department/media/publications/telecommunications-new-developments>.

³⁴ In 2021, the ACCC considered substitution issues through its inquiry into the declaration of fixed line broadband networks (<https://www.accc.gov.au/regulated-infrastructure/communications/fixed-line-services/lbas-sbas-declarations-inquiry-2020/final-decision>) and found that "Most end-users appear to maintain a preference for fixed line broadband to perform data intensive activities given the increasing need for non-limiting data allowances and reliable download and upload speeds."

³⁵ This may often be true due to availability limitations rather than a consumer choice.

³⁶ TPG Telecom Limited 2021 Full-Year Results, February 2022, slide 8. Available at: <https://www.tpgtelecom.com.au/investor-relations/financial-results>.

³⁷ Noting that TPG has highlighted that in 2021, it signed up 80,000 new customers to fixed wireless home and that "two out of every three customers switching across to our fixed wireless services are in fact former NBN customers." *Commsday*, 17 March 2022.

³⁸ This also puts aside the issue that users would not face a price signal to reflect the costs of their network use.



promote efficient use of the network and allocative efficiency³⁹ while also maximising its chances of achieving its regulatory revenue requirement (facilitating efficient investment).

29. A final market factor which favours efficient pricing is the relationship between NBN Co as a wholesale-only entity and retailers of its services. NBN Co wishes to meet its commercial objectives⁴⁰ by increasing demand and the take up of higher value services. But it can only do so by offering price/service packages that appeal to retailers – and are more appealing than the retailers' outside options. As indicated above, many larger customers have alternative networks that are more attractive to retail users if NBN Co sets inefficient prices.

3.1.2 The proposed regulatory framework

30. In addition to market incentives, we also consider that NBN Co's proposed regulatory arrangements will motivate NBN Co to set efficient prices.
31. In saying this, we first recognise that the standard proposition is that a revenue cap with an 'unders and overs' mechanism insulates a regulated firm from demand risk.⁴¹ This is because any revenue under- or over-recovery that is caused by deviations from forecast demands in a future period can be rolled forward to the next regulatory period, and by then allowing for higher or lower prices to be set.⁴² In fact, under a revenue cap, a regulated firm also faces incentives to price excessively, as this makes no difference to revenues but reducing demand can lower its variable costs and increases its profits. For this reason, revenue caps are usually accompanied by other constraints on prices to promote the efficient use of infrastructure.⁴³
32. While it is true that a standard revenue cap can remove demand risk and incentives for the regulated firm to increase demand, this in no way reflects NBN Co's present circumstances or proposed regulations. There are two critical assumptions in the standard analysis of revenue caps:
- a The first assumption is that any cost under-recoveries can be recovered in future regulatory periods, with certainty. If, on the other hand, there is some doubt about future recovery, then NBN Co will in fact bear a share—or all—of the demand risk, and be incentivised to avoid demand-driven under-recovery.
 - b The second assumption is that NBN Co would have flexibility to increase product prices if the revenue cap cannot be met, either within a current regulatory period or in a future regulatory period (to recover an 'under').
33. With respect to the first assumption, suppose that there is uncertainty about cost recovery of NBN Co's regulated revenue requirement (including both ABBRR and ICRA portion) – say in 50%

³⁹ That is, noting that allocative efficiency should be seen as a constrained maximisation as discussion in Section 2.

⁴⁰ See also footnote 20.

⁴¹ As suggested by the ACCC in its working group comments. ACCC, *NBN Co Special Access Undertaking: Summary of industry working group outcomes*, December 2021, p.13.

⁴² Profits may also vary with under- or over-shooting of revenue forecasts. If some costs are variable, demand that produces less revenue will cost less to produce, and so there will be some benefit to the regulated firm to a lower demand scenario.

⁴³ For example, while electricity distribution network providers are regulated using revenue caps, the National Electricity Rules (Clause 6.18.5) also incorporate a set of distribution pricing principles and impose a number of obligations on DNSPs as to how they set tariffs. These requirements include, but are not limited to, the need for tariffs to be based on long-run marginal cost (LRMC).



of cases NBN Co can recoup an under-recovery, while in 50% of cases market forces prevent future cost recovery and that it is unclear now which of these two outcomes is likely to occur. Then it is clear that NBN Co would be incentivised to set prices and grow demand as much as possible now to avoid a situation where it could not recoup initial under-recoveries in the future. In our view, the market evidence to which we have earlier referred suggests that the proportion of cases in which NBN Co would experience under-recovery is likely to be non-trivial.⁴⁴

34. The second assumption of allowed intra- or inter-period price increases is significantly limited by NBN Co's proposed price caps on individual services. In contrast to the ACCC's conception of a pure revenue cap whereby NBN Co could increase future prices to meet lower than expected initial demand, NBN Co will be bound by individual price caps that, at best, only provide for small annual real increases in prices.⁴⁵
35. The implication of these factors is stark – NBN Co could only recover any under-recoveries through growth in future demand. Recovery through (non-trivial) real growth in prices would not be allowed. It is therefore clear that
 - a NBN Co ultimately bears all demand risk⁴⁶ – even where it would be arguably more efficient for customers to bear this risk – and
 - b NBN Co will have strong incentives to produce products that consumers want at prices that reflect consumers' willingness to pay – as this will maximise NBN Co's revenues and profits and also its chances of recovering all of its efficient costs.
36. A final feature of NBN Co's proposals requires further mention. This is the proposal to only have the opportunity to recover 50% of any under-recoveries of the revenue cap. This approach squarely exposes NBN Co to demand risk and incentivises NBN Co to set prices to increase demand, as it would only have the opportunity to avoid a half-share of the loss associated with a demand shortfall within a regulatory period.⁴⁷
37. It is also notable that this 50% is a maximum. The ability to carry forward declines unless that full amount can be recovered in the next regulatory period. For example, if there was \$100 of under-recovery in the first regulatory period, \$50 would be carried into the second regulatory period. If there was an under-recovery of \$50 in that period, a maximum of \$25 could be carried into the third Regulatory Cycle. Hence, these "unders" cannot accumulate in the same way as could losses under the module 1 ICRA arrangements.
38. Moreover, NBN Co could also benefit from an unanticipated increase in demand. 50% of the benefit of an over-recovery would be carried forward into future periods. This particularly highlights the benefits that could arise from new and improved products.

⁴⁴ Indeed, the very fact that NBN Co is still presently unable to recover its ABBRR without any contribution to ICRA recovery highlights the magnitude of the uncertainty.

⁴⁵ For Monthly Recurring TC-4 AVC-only services, the proposed price increase maximum is CPI + 3% for the first regulatory period, with an ongoing default price control of the greater of CPI or 3% thereafter. These price controls are proposed to apply on a 'use it or lose it' basis.

⁴⁶ Exposing a regulated firm to demand risk may or may not be more efficient - this will depend on how controllable the risk is. To the extent that demand fluctuates due to factors that are outside of the firm's control (e.g. due to weather), then windfall gains or losses result which have no obvious efficiency benefit, and may increase the regulated firm's cost of capital. If demand fluctuates due to factors within the firm's control (e.g. service quality, mispricing of services), then it would be more efficient for the firm to bear demand risk.

⁴⁷ Note that this approach also means that the demand forecasts are of greater consequence than under a 'normal' revenue cap with no demand risk.



39. It follows from this analysis that NBN Co's revenue cap proposal is far from the textbook case of a revenue cap that eliminates demand risk for the service provider. In fact, there can be no material difference between the pricing incentives created under NBN Co's proposed revenue cap and individual price controls on the one hand, or a WAPC on the other (noting that the ACCC has stated that it prefers a WAPC over a revenue cap because the ACCC considers it provides a stronger incentive to NBN Co to meet or outperform its demand forecasts).⁴⁸ In either case, there will be strong incentives to capitalise on an opportunity to increase demand through setting more efficient prices or introducing new and innovative products.

3.1.3 A sufficient degree of pricing flexibility

40. NBN Co's proposals which include both a revenue cap as well as individual price caps provide for some pricing flexibility. Price caps bind maximum prices, and so offer flexibility to respond to competition. Further, there is some flexibility to propose real price increases of up to 3% in the first regulatory period to facilitate price changes relating to AVC-only offers.
41. The ACCC has pointed to its preference for a WAPC on the basis that a WAPC would provide for more price flexibility than price caps. This suggests that even if the ACCC accepts that a revenue cap with individual price controls provides the same or similar incentives to price efficiently, a WAPC would provide greater ability to act on those incentives.
42. We agree that, in principle, a WAPC can provide more flexibility to restructure prices in ways that promote economic efficiency than a revenue cap and individual price caps. This could include, for example, increasing prices on inelastic-demand services (or service components) and lowering prices on demand-elastic services. In considering the significance of that benefit, the main questions are:
- a Whether there is a reasonable probability that significant efficiency-enhancing price changes could be made under a WAPC that could not under the revenue cap and individual price controls?
 - b Do the side constraints and other limits on price changes (tariff notifications, allowed discounting etc.) materially restrict price changes under a WAPC?
43. In the short term, it does not appear that there are likely to be large efficiency gains from further price restructuring. NBN Co has only ever reduced its prices for core services since the commencement of the SAU in 2013. Further, and as noted, NBN Co already has strong commercial incentives to apply Ramsey-type principles in its pricing, and the proposed individual controls will provide more pricing flexibility than the current uniform CPI-1.5% controls.
44. The design of a WAPC and the flexibility that it would provide in practice is debatable. Initial ACCC comments highlighted the wide range of possible constraints that it considered might be desirable to apply to certain services (side constraints), the periodicity and timing of price changes, and limits on the use of discounting. The ACCC's comments in the summary of working group outcomes⁴⁹ flag a more open approach to constraints but still propose a number of them. In our view, it would be difficult to conclude that a WAPC could offer, in practice, considerably more efficiency-enhancing pricing flexibility than NBN Co's proposed approach.

⁴⁸ ACCC, *NBN Co Special Access Undertaking: Summary of industry working group outcomes*, December 2021, Attachment A, p.13.

⁴⁹ ACCC, *NBN Co Special Access Undertaking: Summary of industry working group outcomes*, December 2021, Attachment A, p.14.



3.2 Will NBN Co have incentives to incur only efficient costs?

45. NBN Co will be incentivised to incur only efficient costs as:
- A firm acting commercially that is regulated under a revenue cap has the incentive to be cost efficient as allowed regulatory revenues are delinked from actual costs, and cost savings can be captured as higher profits for a limited period.⁵⁰
 - NBN Co proposes ACCC scrutiny of costs consistent with other standard regulatory models – ex ante for operating and capital costs, and ex post for capital costs – that would allow for only the recovery of efficiently-incurred costs.
46. While there may be some matters of detail as to exactly how processes for ACCC review of expenditure will work, we understand that NBN Co's regulatory proposals in relation to incentives for cost efficiency are less likely to be contentious.

3.3 Will NBN Co have incentives to invest efficiently?

47. Efficient investment would be promoted by giving NBN Co the opportunity to recover the costs of efficient future investments, inclusive of a normal commercial return.⁵¹

3.3.1 Providing credible signals about new investments

48. The ACCC has suggested in its comments that once NBN Co has reached a point where it can recover its annual building block revenue requirement and is 'financeable', this should be sufficient for it to invest efficiently.⁵² The ACCC indicates that at that point, NBN Co should be able to raise finance against the cost of new investments and be able to recover those costs (including a commercial return).
49. The ACCC's statement is technically correct. However, it contains the implicit assumption that NBN Co will receive a credible commitment that it will be given the opportunity to recover the costs of efficient new investments. The credibility of the commitment to the recovery of the costs of new investments will, in turn, depend on the treatment of the recovery of past investments and whether the regulator can be trusted to act in a 'time consistent' fashion.⁵³
50. The fact that NBN Co might be in a position where it can commercially raise finance and recover forecast costs from users will not be sufficient to induce efficient investment if NBN Co does not believe that, once new investments are sunk, the ACCC will allow for all (efficiently-incurred) sunk costs to be recovered. In that context, we note that the recovery of prudently-incurred sunk costs

⁵⁰ The incentive lessens further into the regulatory period because the gains cannot be kept for as long. It is for this reason that incentive sharing schemes that are now widely used in the energy sector have been developed.

⁵¹ *Re Telstra Corporation Limited (ACN 051 775 556) [2006]*, ACompT 4 (2 June 2006) at 103 and *Re Telstra Corporation Ltd (No 3) [2007]* ACompT 3 (17 May 2007) at 159.

⁵² ACCC, *NBN Co Special Access Undertaking: Summary of industry working group outcomes*, December 2021, Attachment A, p.6.

⁵³ Time consistency refers to the problem that decisions made *ex post* can be optimally different (e.g. to disallow cost recovery) from those *ex ante* (e.g. to allow cost recovery), but that in a repeated context such time inconsistent behaviour will cause behavioural changes that will prevent the time inconsistency problem arising (e.g. by not believing the *ex ante* commitment to allow cost recovery). See Levine, Stern and Trillas, "Utility price regulation and time inconsistency: comparisons with monetary policy", *Oxford Economic Papers*, Vol 57, No. 3 (July 2005), pp. 447-478.



was a past promise of the regulatory regime encompassed in the current SAU. Therefore, denying all or part of that recovery signals that the ACCC may also seek to write off future investments that were made on a prudent and efficient basis, consistent with established regulatory arrangements, as being inefficient or imprudent.⁵⁴ This has implications for the likelihood that efficient investments will be made in the first place.

51. As the Australian Competition Tribunal has recently commented, efficient investment, dynamic efficiency and regulatory risk are intrinsically linked:

352 Even a private facility owner would still, if it were precluded from charging to obtain a return on sunk assets, have an incentive to continue to provide access...And it would not lose the incentive to invest in new assets and improvements to the facility, so long as the new assets were appropriately brought into the asset base on which charges provided a return....

354 But precluding a return on all the assets that are part of the facility (sunk or not) would send a signal to future investors in other natural monopoly assets that they risked having their investment, once made, treated as sunk, with future returns confiscated. That unfortunate investor would still have an incentive to operate its asset as long as the returns exceeded the scrap value, but the investment climate for such assets would be fatally damaged. In effect, price regulation would have created a new sovereign risk.⁵⁵

52. These links were also addressed in past decisions and statements of the ACCC⁵⁶ and in NBN Co's submissions to the ACCC in support of the 2012 SAU.⁵⁷
53. In its regulatory proposals, NBN Co has recognised that it is not likely to be commercially able to recover all of the ICRA by 2040. Instead, it proposes to recover the ICRA over a longer timeframe

⁵⁴ This also puts to one side that NBN Co's legitimate business interests allow it to receive a commercial return on its prudent (past) investment in the infrastructure used to supply the regulated services. *Application by Telstra Corporation Limited ABN 33 051 775 556 [2010] ACompT 1* (10 May 2010) at 210.

⁵⁵ *Application by Port of Newcastle Operations Pty Ltd [2019] ACompT 1*, at 352-354.

⁵⁶ In its 2010 *Review of the 1997 telecommunications access pricing principles for fixed line services*, the ACCC highlighted that the choice of the RAB value had important consequences: "...a valuation method that values sunk assets at less than their actual costs could prevent an access provider from recovering the full costs of any future investments in sunk assets. This risk, which is often termed the risk of regulatory opportunism, could deter the access provider (and other market participants) from undertaking future investments in sunk assets, because they would lack confidence that the regulatory arrangements will permit them to recover the costs of those investments." (p. 26).

⁵⁷ See in particular the Expert Report of Ordovery and Shampine, September 2012, Section III.A, available at: <https://www.accc.gov.au/system/files/Expert%20Report%20of%20Janusz%20A.%20Ordovery%20and%20Allan%20QL%20Shampine.pdf>.



which is expected to be commercially achievable⁵⁸ as well as consistent with achieving and sustaining an investment grade credit rating and providing some return to its shareholders.

54. We suggest that NBN Co's regulatory proposals should allow it to make new efficient investments so long as the ACCC can make credible commitments to allow for the recovery of those efficient investments (and no more). The credibility of commitments cannot, however, be divorced from the proposed treatment of the recovery of the costs of existing sunk investments.

3.3.2 The efficient recovery of existing investments

55. As noted in paragraph 53, NBN Co has identified that while it is not likely to be commercially able to recover all the ICRA by 2040, it is reasonable for it to recover a portion of the ICRA within that period.
56. The ACCC has noted that a suitable regulatory framework:

...would protect end-users of NBN services from price shocks and from prices that track higher than needed in later years. This would involve recovery of future capital investments over the economic life of assets and minimal deferral of cost recovery to avoid significant price increases in the future. This in turn will require an appropriate depreciation profile to be adopted in the BBM and new provisions around how any ICRA is recovered in prices.⁵⁹

Efficient paths of cost recovery

57. This statement emphasises that a crucial element of efficient cost recovery is the timing of that recovery. Standard approaches to monopoly regulation used in other sectors are often indifferent to the timing of that recovery. That is because in stable conditions, using simple depreciation techniques such as straight-line depreciation provides for a reasonable and stable path of capital cost recovery. However, the economic literature emphasises that this approach will rarely be the most efficient:
- a A number of paths of cost recovery can provide for efficient investment, so long as the expected NPV = 0 condition is met and there is no risk of asset stranding.⁶⁰
 - b Depreciation could be front-loaded to reduce the risk of asset stranding, but this would result in higher prices now and would expose NBN Co to a higher chance of asset stranding risk.⁶¹

⁵⁸ In the sense that NBN Co considers that forecasts of consumers' willingness to pay are sufficient to recover the forecast revenues.

⁵⁹ ACCC, *NBN Co Special Access Undertaking – Summary of industry working group outcomes*, p. 6.

⁶⁰ This result is often attributed to Schmalensee (1989), 'An expository note on depreciation and profitability under rate-of-return regulation', *Journal of Regulatory Economics*, Vol 1, pp. 293–298.

⁶¹ The effect of future competition on regulatory depreciation is analysed in Crew and Kleindorfer (1992), 'Economic Depreciation and the Regulated Firm under Competition and Technological Change', *Journal of Regulatory Economics*, Vol 4, pp.51-61.



- c The most efficient approach is likely to be to recover costs in ways that best match (expected) user willingness to pay with cost recovery over time, as this would maximise allocative efficiency – a dynamic Ramsey pricing approach.⁶²
58. Efficient approaches to cost recovery may therefore require a very different path of cost recovery from the standard indexed straight-line depreciation that is favoured in most building block models (and currently applies to the LTRCM).
 59. These factors are reflected in NBN Co's proposals. NBN Co has sought to match the timing of recovery of sunk and future costs with its expectations of increasing consumer willingness-to-pay – as reflected in NBN Co's Integrated Operating Plan. NBN Co's current forecasts suggest that it will be able to recover its ABBRR when calculated using straight-line depreciation in FY2029 and recover initially modest amounts of ICRA from FY2030.
 60. NBN Co has therefore considered two options for achieving efficient cost recovery:
 - a to backload depreciation both in the BBM and for the ICRA (using 'sum of digits' depreciation). This approach reflects that NBN Co is not likely to be commercially able to initially recover its ABBRR using straight line depreciation in FY2024-2025.
 - b to use only straight-line depreciation in the BBM and backloaded recovery of the ICRA over time. Noting that this is otherwise likely to lead to a revenue shortfall to a revenue shortfall, NBN Co's proposed revenue cap allows for (part of) any initial under-recovery in years FY2024-2025 to be rolled into the next regulatory period on an NPV-neutral basis.
 61. In our view, the former proposal would better achieve the objective of providing NBN Co with an opportunity to recover its prudent past costs (including a contribution to the recovery of ICRA) while avoiding significant price increases in future. NBN Co has chosen to adopt the latter approach reflecting the ACCC's preference to maintain the use of straight-line depreciation for the existing RAB, and reflecting NBN Co's view that adopting a WAPC would impose an even more significant risk to under-recovery of past and future efficient costs.

Backloading cost recovery produces better price paths

62. It is also necessary to address one further point about the efficiency of backloading of depreciation and of ICRA recovery. The ACCC suggests that it would be wary to approve arrangements where backloading of cost recovery would disproportionately impose costs on future users or encourage under-utilisation of NBN Co's networks.⁶³
63. In our opinion, the risk that backloading would contribute to either problem is very low:
 - a NBN Co forecasts that backloading of depreciation would produce a smoother price path (in real, per customer terms) than the use of regulatory straight-line depreciation, which would result in large initial increases in prices followed by longer-term reductions. Arguably, not backloading depreciation or ICRA recovery would disproportionately impose costs on *current* users.
 - b Under-utilisation is very unlikely because NBN Co would be highly incentivised to offer cheaper access in the event of more infrastructure competition and lower demand. In such situations, it is rational to ignore sunk network costs – including ICRA and RAB – and to charge as low as marginal costs. As we have recognised, if building new networks becomes

⁶² Laffont and Tirole, *Competition in Telecommunications*, MIT, 2000, p. 67.

⁶³ ACCC, *NBN Co Special Access Undertaking – Summary of industry working group outcomes*, Attachment A, p. 1.



profitable, NBN Co will simply bear the risk of future under-recovery (asset stranding) and backloading itself will have little effect. NBN Co will be strongly incentivised to price to avoid such a situation.

64. Moreover, in thinking about cost impacts on different groups of consumers from backloading of depreciation and/or ICRA, we should also consider the *value* that NBN Co's network will deliver as well as its cost. Ongoing improvements in network quality and applications are expected to result in ongoing increases in end-user willingness to pay. Focusing only on, say, the required increase in average revenue per user to recover overall costs obscures that dynamic. Indeed, if there is an increase in willingness to pay for higher speed tiers and quality products over time, then ARPU will increase even with no price increases. In that case, although later users might be said to pay more, this could hardly be said to be 'disproportionally' imposing costs on these later users as the value received from the network is commensurately higher.
65. To conclude, we return to the question of whether the proposals will promote efficient investment by sending appropriate signals about the recovery of past investments. In our view, the NBN Co proposals offer a compromise that seeks to balance recovery of costs including a return for its shareholders with a consideration of commercial feasibility including the impact on consumer prices (by avoiding material real price increases). We further find that there are few obvious risks to efficiency of network use from this approach, as NBN Co will continue to be constrained by market pressures and growth in willingness to pay. Approval of NBN Co's proposals should provide the right incentives to promote efficient investment.



4 Conclusions

66. Our analysis has been directed at examining whether under NBN Co's proposed SAU arrangements, NBN Co will face incentives to price efficiently, develop new products and incur expenditure efficiently, which are central to considerations around the reasonableness of NBN Co's proposals. This analysis has also reflected on the ACCC's preliminary comments reflecting on the outcomes of the working groups regarding the incentives created by revenue caps in comparison to a WAPC.
67. Our analysis of NBN Co's proposed regulatory arrangements, together with market incentives, indicates that:
- a NBN Co faces little protection from demand risk and will therefore face strong incentives to price to promote the efficient use of the network and to develop new products that assist with the growth of demand.
 - b The delinking of allowed revenues from NBN Co's actual costs, together with ACCC scrutiny of cost forecasts *ex ante* and capex costs *ex post*, should provide strong incentives to be cost efficient.
 - c Regarding investment incentives, we find that NBN Co's proposals have been structured to facilitate the recovery of the proportion of past investments that is forecast to be commercially feasible and allows for an efficient matching of costs to consumer willingness-to-pay. This approach will provide appropriate signals that the ACCC will allow NBN Co to recover, as best it can, the costs of efficient new investments over time.
68. We have also noted within this report that the ACCC has also expressed some reservations with revenue controls in comparison with price caps and, in particular, a WAPC. We make three observations on that comparison:
- a We see little practical difference to the pricing incentives faced under the proposed revenue cap or a WAPC to maximise the use of the NBN.⁶⁴ In either case, NBN Co would face a significant financial penalty if it was to ignore materially better pricing and product options.
 - b A WAPC has two significant disadvantages when considering the incentives for efficient recovery of past and new investments.
 - i First, NBN Co's demand is not sufficiently stable and reliable to forecast connections (including speed tier mix) and usage with great accuracy at this time, which means that a WAPC is just as likely to produce 'windfall' gains and losses as genuine rewards and penalties for efficient/inefficient pricing. Revenue uncertainty is unlikely to promote efficient investment, particularly if risks to revenue are material and not symmetric.⁶⁵

⁶⁴ We also note that the ACCC, in the past, commented that a WAPC does not always provide incentives to adopt more efficient pricing in practice. See ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service: Draft Decision*, December 2007, pp. 82-83.

⁶⁵ While it can generally be accepted that price cap regulation presents greater risks for investors than a pure revenue cap, there is mixed empirical evidence on the materiality of this. This is likely due to a number of other differences in regulatory regimes and industry features, so isolating the impact of different forms of price control is challenging.



- ii Secondly, a WAPC would not allow for a partial deferral of the recovery of efficient BBM costs from a period when demand is not yet sufficient to allow for (possible and partial) recovery of those costs, whereas a revenue cap with 'unders and overs' would.
- c The ACCC's further comments on revenue caps and WAPC correctly draw attention to the issue of demand forecasting and highlight that the forecasts themselves can address downside risk.⁶⁶ That may be relevant in the longer term. However, in the more immediate term, this will only be true if NBN Co is in a position to commercially recover its ABBRR (when calculated using straight line depreciation). This is not predicted in the first regulatory period. Therefore, using lower demand forecasts may justify higher prices but provide for little additional revenue to be earned given the market constraints.

⁶⁶ ACCC, *NBN Co Special Access Undertaking – Summary of industry working group outcomes*, Attachment A, p. 14.



A The reasonableness criteria

Subsection 152AH(1) of the CCA provides that in determining whether terms and conditions are 'reasonable', regard must be had to the following matters:

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

Subsection 152AH(2) provides that subsection (1) does not limit the matters to which the ACCC may have regard to in considering reasonableness.

Subsection 152AB(2) provides that in determining whether a particular thing promotes the long-term interests of end-users of carriage services or services supplied by means of carriage services, regard must be had to the extent to which the thing is likely to result in the achievement of the following objectives:

- a. the objective of promoting competition in markets for listed services;
- b. the objective of achieving any-to-any connectivity in relation to carriage services that involve communication between end-users;
- c. the objective of encouraging the economically efficient use of, and the economically efficient investment in:
 - i. the infrastructure by which listed services are supplied; and
 - ii. any other infrastructure by which listed services are, or are likely to become, capable of being supplied.

Subsection 152AB(6) provides that in determining the extent to which a particular thing is likely to result in the achievement of the objective of encouraging the economically efficient use of, and the economically efficient investment in particular types of infrastructure, regard must be had to the following (among other things):

- a. the legitimate commercial interests of the supplier or suppliers of the services, including the ability of the supplier or suppliers to exploit economies of scale and scope;
- b. the incentives for investment in:
 - i. the infrastructure by which the services are supplied; and
 - ii. any other infrastructure by which the services are, or are likely to become, capable of being supplied.

Subsection 152AB(7) provides that in determining incentives for investment for the purposes of the clause referred to above, regard must be had to the risks involved in making the investment.

Frontier Economics

Brisbane | Melbourne | Singapore | Sydney

Frontier Economics Pty Ltd
395 Collins Street Melbourne Victoria 3000

Tel: +61 3 9620 4488

<https://www.frontier-economics.com.au>

ACN: 087 553 124 ABN: 13 087 553 124