



nbn submission to ACCC Consultation Paper – Proposed Variation to the NBN Co Special Access Undertaking

July 2022





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Contents

- Executive Summary 5**
 - 1.1 Overview and background 5
 - 1.2 Summary of this submission 6
- Response to issues for consultation..... 11**
 - 2.1 Pricing and product constructs 11
 - 2.1.1 Overview 11
 - 2.1.2 Efficient pricing should take into account both cost and demand side factors 11
 - 2.1.3 Projections of **nbn**’s future wholesale charges should capture real end-user value increases over time..... 13
 - 2.1.4 **nbn** comments on ACCC assumptions underlying price projections..... 14
 - 2.1.4.1 The ACCC’s starting prices for its projections do not appropriately incorporate the most recent **nbn** information..... 14
 - 2.1.4.2 **nbn**’s revenue controls will prevent **nbn** from charging the prices projected by the ACCC 15
 - 2.1.4.3 **nbn** considers the impact of demand shocks on RSPs overall costs to be very limited 17
 - 2.1.4.4 **nbn** operates in a highly competitive environment that prevents it from raising prices in the manner envisaged by the ACCC 17
 - 2.1.5 Concerns about affordability for specific end-user groups are more appropriately dealt with outside the SAU 20
 - 2.1.6 Product differentiation will dynamically evolve as end-user requirements increase 21
 - 2.2 Demand for higher speeds will continue to grow 22
 - 2.2.1 Overview and context..... 22
 - 2.2.2 Detailed analysis of likely future end-user speeds 24
 - 2.3 Discounting arrangements 31
 - 2.4 Recovery of accumulated losses 33
 - 2.5 Cost allocation 33
 - 2.5.1 General comments 33
 - 2.5.1.1 **nbn**’s cost allocation principles align with those of other utilities and regulators 34
 - 2.5.1.2 There is no need for additional formal ring-fencing 35
 - 2.6 Expenditure criteria..... 37
 - 2.6.1 Introductory comments 37
 - 2.6.2 Definitions of prudent and efficient 38
 - 2.6.3 Expenditure Objectives and Factors 38



2.7 Weighted average cost of capital (WACC) 44

 2.7.1 The reasonableness of **nbn**’s proposed WACC methodology 44

2.8 Maximum term of Standard Forms of Access Agreement (SFAAs)..... 48

 2.8.1 Timely negotiation 48

 2.8.2 Timely resolution of issues 50

2.9 Service-related matters 52

 2.9.1 Cost pass-through for service standard improvements 52

 2.9.1.1 The cost pass-through mechanism allows **nbn** to respond dynamically and flexibly to demand for service standard improvements 52

 2.9.1.2 Clarifying the application of the proposed cost pass-through mechanism for service standard improvements 52

 2.9.2 Network boundary points 55

 2.9.2.1 Network boundaries generally 55

 2.9.2.2 The FTTC network boundary 55

 2.9.3 Service level reporting 56

 2.9.3.1 Evidencing service quality and network performance 56

 2.9.3.2 Form, method, timing and detail in reports 58

2.10 ACCC functions and powers 58

 2.10.1 ACCC functions and powers under the SAU need to preserve the regulatory certainty provided by the SAU 58

 2.10.2 Clarity of conferred powers 60

 2.10.3 The proposed deeming provisions are consistent with the legislative framework 60

 2.10.4 Requirement for ACCC to consider expenditure objectives and factors when making decision on RMA 61

 2.10.5 Consistency with Part XIC framework of ACCC being bound by rules in making an RMD 62

 2.10.6 Commitment to supply relevant information 63

 2.10.7 Information “reasonably available to **nbn**” 63

 2.10.7.1 Incentives for **nbn** to seek out all relevant information 63

 2.10.7.2 Considering “new” information after the time of an initial decision 64

 2.10.8 Timeframes for exercising ACCC powers 65



Executive Summary

1.1 Overview and background

nbn welcomes the opportunity to respond to the ACCC’s consultation paper¹ (**Consultation Paper**) on **nbn**’s Special Access Undertaking Variation lodged with the ACCC on 29 March, 2022 (**SAU Variation**). We agree with the ACCC that our proposed SAU Variation is significant for all Australian households and businesses that use broadband, and that it is essential for consumers, **nbn**, RSPs and the wider community that **nbn**’s long-term regulatory framework incentivises ongoing investment in, and promotes the use of, **nbn**’s network.

In light of revised policy settings for **nbn** and both the ACCC’s Consultation Paper and ongoing RSP feedback, it is clear that there are opportunities for **nbn** to better serve the long-term interests of consumers, the industry and good regulatory policy, and so improve the prospects that a variation to **nbn**’s SAU will be accepted by the ACCC.

To that end, **nbn** will shortly conclude the steps needed to enable it to withdraw the current SAU Variation and commence further engagement with the ACCC and industry on an updated proposal, which we will consult on publicly before re-lodging an updated SAU variation later this year.

nbn is developing new proposals in relation to issues raised by the ACCC, and will continue to work constructively with industry stakeholders. **nbn** is planning to make substantive changes to aspects of our SAU Variation, particularly in relation to the list of issues below.

1) Pricing construct and price controls

- The scope of speed tiers that should be “AVC-only”, the charge for CVC overage (where applicable), and the relativities of prices between different speed tiers;
- Phasing of the complete removal of CVC overage charges over time;
- Extending the coverage of price control mechanisms with respect to the CVC overage component (while CVC remains relevant) to provide better cost certainty and appropriate price shock protections for key speed tiers; and
- The appropriate form of price controls to ensure that prices are cost-reflective and follow an appropriate glidepath if current prices are substantially below cost-reflective levels.

2) Long-term revenue controls

- A reduction in the portion of the Initial Cost Recovery Account (ICRA) that can be redeemed by **nbn** over time, and the linkage of ICRA recovery to that required to achieve and maintain an investment-grade credit rating;
- Removal of **nbn**’s previously proposed Regulatory Financeability Test; and
- Enhancing the ACCC’s role in relation to **nbn**’s Cost Allocation Manual.

3) Non-price terms and conditions

- The inclusion of a baseline set of service standards in the SAU to serve as a measure of quality, including an ACCC review mechanism aligned with the regulatory cycle.

4) ACCC powers and longer-term SAU settings

- The opportunity for the ACCC to require changes to the substantive terms of the SAU in replacement module applications lodged from 2032 onwards (subject to guiding principles to ensure **nbn** is able to reach and maintain a standalone investment grade credit rating with a stable outlook), enabling the ACCC to effect changes consistent with standard utility regulatory principles.

¹ ACCC, *Proposed variation to the NBN Co Special Access Undertaking: Consultation Paper*. Issued 23 May, 2022.



1.2 Summary of this submission

The ACCC's Consultation Paper seeks input on a number of key issues in relation to the SAU Variation. **nbn** has articulated its views on many of these issues in our Supporting Submission lodged with the SAU Variation, and this current submission should be read in conjunction with that initial submission. This submission provides additional material on a targeted set of issues raised by the ACCC, to clarify and support positions in the SAU Variation which we expect to include in our updated variation, and which should also inform the ongoing discussion with industry in the period leading up to lodgement of a new SAU variation.

A summary of the additional information provided in this submission follows.

Pricing

The structure, level, future trajectory and certainty of **nbn**'s prices are central issues for RSPs in considering the merits of **nbn**'s SAU Variation. This is particularly the case given the SAU has a term to 2040. The ACCC and RSPs also have a strong interest in ensuring that **nbn**'s prices are set efficiently and reflect **nbn**'s efficiently incurred costs.

nbn recognises the need to provide access seekers with cost certainty over time, while balancing this against the need for pricing flexibility in this highly dynamic market and **nbn**'s ability to adjust its prices in line with changes in its costs.

Given the range of services supplied over **nbn**'s shared network, differing levels of competition and costs faced by **nbn**, and diversity of end-user needs and willingness to pay, setting the prices for **nbn**'s services requires detailed analysis to ensure prices address the various complexities faced by **nbn**.

nbn acknowledges that there may be benefit in creating a more explicit link between **nbn**'s *overall* pricing and **nbn**'s costs. Setting efficient individual prices (rather than the overall pricing/revenue level) requires consideration of issues beyond just the costs derived from a Building Block Model (BBM), as is well accepted among economic literature and regulatory practices both domestically and overseas.

Demand-side factors need to be taken into account to establish the appropriate extent of product differentiation and the associated prices, particularly in the case of firms like **nbn** which have multiple products supplied over shared networks. Allocative, dynamic and productive efficiency can only be achieved by detailed consideration of **nbn**'s cost and demand factors.



Expected pricing trajectory

Over the relatively long timeframe of the SAU, it is appropriate to consider the increasing value derived by users of the network in real, rather than nominal terms. The pricing approach proposed in the SAU Variation will deliver real value increases to end-users over the term of the SAU.

nbn has concerns about the assumptions that underpin the ACCC's nominal price projections in its Consultation Paper. In particular, there are five factors that would result in prices (particularly prices for wholesale services of 50 Mbps and below) being substantially lower than the ACCC's projections:

- it appears the ACCC has not used the correct starting prices for its projections (for FY24), which results in the entire price path being systematically inaccurate. These inaccuracies in starting prices are compounded in the ACCC's price modelling over the duration of the SAU, leading to unrealistic outcomes for **nbn**'s wholesale prices, particularly in outer years;
- **nbn**'s revenue controls would prevent **nbn** from charging the prices projected by the ACCC from FY28 onwards;
- overage is a small proportion of RSPs' overall costs and demand shocks are likely to have a very limited impact on overall RSP costs;
- long term projections of prices in nominal terms do not account for changes in affordability, relativity to other goods and overall household budget, and therefore is an incomplete analysis when assessing prices longer term; and

nbn is subject to significant and increasing competitive constraints, which will further prevent it from pricing up to the amounts projected in the Consultation Paper.

Bandwidth and speed requirements will continue to grow

In **nbn**'s view, the demand for higher access speeds will grow at much faster rates than expressed in the ACCC's Consultation Paper. This is supported by observable global trends as well as by direct observations of end-user experience on **nbn**'s network.

nbn considers it highly unlikely that in 2028, the median needs of end-users will only be 29 Mbps – this would suggest that Australia is an international outlier in speed requirements – which has not been **nbn**'s experience over the past decade.

The characteristics of the protocols used to deliver internet services, the algorithms used by applications such as streaming video services, and the increasing level of concurrency of usage of services on **nbn**'s network suggest that even today, 50 Mbps may be required to deliver a reasonable level of service in most cases. This is borne out by the real-world experience observed by **nbn** on its network.



Cost allocation

The cost allocation principles proposed by **nbn** align with existing approaches and principles from other industries and regulators, such as IPART for water, and the ACCC for Australia Post and Telstra’s fixed line services. In particular, **nbn** applies the same methodological approach to fully allocated cost (FAC) for fixed and common costs as the multi-product BBMs of Australia Post and Telstra’s fixed line services.

The SAU Variation proposes a cost allocation framework to promote greater confidence that **nbn** does not cross-subsidise particular business-grade services from its Core Regulated Services. Suggestions that further ‘ring-fencing’ requirements are needed to ‘separate **nbn**’s regulated and competitive businesses’ are misplaced, given all **nbn**’s services are regulated and provided on a wholesale-only basis.

Expenditure Criteria

The SAU Variation contains a number of commitments and incentives for **nbn** to incur only prudent and efficient costs. These arrangements supplement the existing incentives faced by **nbn** to incur expenditure only where it is prudent and efficient.

The definitions of prudent and efficient expenditure in the SAU Variation are consistent with regulatory precedent and are not circular in nature.

The Expenditure Objectives and Factors in the SAU Variation are designed to provide transparency and predictability about how **nbn**’s allowed expenditures will be assessed, while not limiting what factors the ACCC may take into account when assessing the efficiency and prudence of **nbn**’s expenditure. The Expenditure Objectives and Factors are consistent with established regulatory practice, in particular the National Electricity Rules.

Weighted Average Cost of Capital (WACC)

The WACC methodology proposed by **nbn** tends to produce highly stable WACC allowances (and therefore prices) over time—even in the face of significant and rapid changes in financial market inputs such as the risk-free rate.

By contrast, the Module 1 WACC methodology and the WACC methodology employed by the ACCC typically produce highly variable WACC allowances over time that would have risen substantially in line with the increase in risk-free rates since the submission of **nbn**’s SAU Variation.

Thus, the methodology proposed by **nbn** delivers longer-term regulatory certainty, which promotes the long-term interests of end-users.

As at 5 July 2022, the risk premium implied by **nbn**’s WACC methodology was just over 4.0%, which is materially lower than the 5.5% risk premium calculated by the ACCC in its Consultation Paper when it assessed **nbn**’s WACC methodology.



Non-price terms

The proposed deeming provision in clause 4.10(j) of the SAU Variation seeks to avoid any regulatory ‘gap’ arising where neither a Replacement Module Application nor a Replacement Module Determination is in place during a Regulatory Cycle. The provision does not impact the ACCC’s ability to make a statutory decision to accept or reject SAU variations and is consistent with the legislative framework in Part XIC of the CCA.

The evidence from the Initial Regulatory Period clearly supports a maximum SFAA term in excess of two years for the Subsequent Regulatory Period. **nbn**'s proposal seeks to align the term of the SAU regulatory cycle and the maximum term of the SFAA to optimise both commercial negotiations and regulatory processes. The alignment will allow RSPs and **nbn** to negotiate commercial terms to be crystallised into an SFAA for all RSPs with a complete view of the regulatory settings established in each newly accepted Replacement Module.

The SAU Variation contains prescriptive details regarding the network boundary points for each of the MTM technologies. As the ACCC recognises, these network boundary points are generally similar to those for the original access technologies included in the existing SAU. The FTTC network boundary point is physically and technically identical or similar to FTTN. It differs in that the FTTC service has a service boundary that extends beyond this point (to a port on a **nbn**-supplied device located at the premises). In each case, the network boundary point is reasonable, as it reflects the furthest extent of **nbn**'s network and so the furthest extent to which **nbn** can take responsibility for the network.

ACCC functions and powers

The SAU Variation confers numerous powers on the ACCC to establish a robust economic regulatory framework, striking a balance between ACCC regulatory oversight and **nbn** having commercial flexibility to support the delivery of Government policy objectives, respond to competition and continue to invest in its network for the benefit of Australians.

nbn recognises the importance of the ACCC’s functions and powers under the SAU Variation. It is critical that those functions and powers be described in a way that provides certainty on the scope of those functions and powers, so that **nbn** can have appropriate certainty in making its own decisions. That need for certainty is balanced against the need to ensure that the ACCC has sufficient time and flexibility to undertake its defined functions and powers.

The proposed requirement that the ACCC have regard to the Expenditure Objectives and Expenditure Factors when deciding whether to accept or reject a Replacement Module Application is consistent with the legislative framework in Part XIC of the CCA.

The regulatory framework established by the SAU, which requires the ACCC to make Replacement Module Determinations in accordance with rules set in the SAU (if it has rejected a **nbn** Replacement Module Application), is consistent with the legislative framework in Part XIC and the framework accepted by the ACCC in relation to the original SAU in 2013.



Conclusion

nbn looks forward to further engagement with the ACCC and industry on the responses to the first phase of the ACCC’s consultation on our SAU Variation. The ACCC’s Consultation Paper builds on the working group outcomes paper and provides more detailed articulation of the ACCC’s concerns, and we will continue to work with the ACCC to ensure we have a complete understanding of the issues and that our proposed approach sufficiently addresses these issues. We believe these issues can be worked through in a timely manner to deliver the regulatory certainty required to ensure efficient investment in **nbn**’s network, promote the use of the network by end-users, provide greater cost certainty to RSPs and as a result, continue to sustainably generate over the coming decades the economic and societal benefits to the wider community that this significant national infrastructure has already delivered.



Response to issues for consultation

2.1 Pricing and product constructs

2.1.1 Overview

In this section, we have set out our response to the key pricing and product construct issues raised by the ACCC in section 5.1 of its Consultation Paper. We have focused on the following five issues where **nbn** takes a different view to the ACCC:

- in section 2.1.2, we set out the reasons why efficient pricing does not require a direct link between individual product prices and costs;
- in section 2.1.3, we submit that the ACCC's projections of **nbn**'s future wholesale charges do not capture real value increases over time;
- in section 2.1.4, we correct some assumptions that underpin the ACCC's projections of **nbn**'s prices;
- in section 2.1.5, we address concerns about affordability for specific end-user groups; and
- in section 2.1.6, we explain how **nbn**'s pricing construct ensures that product differentiation will evolve over time in line with usage trends.

We have not repeated material set out in our supporting submission to the SAU Variation, which should be read in conjunction with the information in this section.

2.1.2 Efficient pricing should take into account both cost and demand side factors

nbn acknowledges that there may be benefit in creating a more explicit link between **nbn**'s *overall* pricing and **nbn**'s costs. Setting efficient individual prices (rather than the overall pricing/revenue level) requires consideration of issues beyond just the costs derived from a Building Block Model (BBM). This is well accepted among economic literature and regulatory practices both domestically and overseas.

Demand-side factors need to be taken into account to jointly establish the appropriate extent of product differentiation and the associated prices, particularly in the case of firms like **nbn** which have multiple products supplied over shared networks. Allocative, dynamic and productive efficiency can only be achieved by detailed consideration of **nbn**'s cost and demand factors.

The ACCC's Consultation Paper expresses a concern that **nbn**'s pricing in the SAU Variation does not create a direct link between prices and underlying costs.²

nbn acknowledges that there may be benefit in creating a more explicit link between **nbn**'s *overall* pricing and **nbn**'s costs. To this end, we are currently considering options to ensure that overall prices are more closely linked to the costs calculated from our Building Block Model (BBM).

² ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 23.



As further explained in the Frontier Economics report³ attached to nbn’s supporting submission as well as the report on Pricing Efficiency attached to this submission, allocatively efficient pricing requires an examination of a multitude of factors in addition to cost, including differences in demand and elasticities across individual products. For example, it may be more efficient in some cases to deviate from pricing at marginal cost for some individual products if this maximises the number of users on the network and total usage (by reference to the specific elasticities and demand profiles of specific products).

Delinking individual prices from costs is also beneficial from a productive efficiency perspective. In the context of imperfect information, the productive efficiency of a regulated firm is maximised when that firm has sufficient incentives to operate efficiently.⁴

The approaches to setting efficient prices (outside of the BBM) to recover the BBM costs come in the form of a first to third best approaches, as outlined briefly below and discussed on more detail in the Efficient Pricing Frontier Economics report:⁵

- **First best: Ramsey Pricing:** Mark up marginal costs in proportion to demand elasticity (willingness to pay) to recover fixed and sunk costs. In the case of telecommunications, we note that often this does not lead to full cost recovery.
- **Second best: Two- or multi-part tariffs:** Charge short-run or LRMC for additional usage, and recover all fixed and sunk costs in a residual access charge for full cost recovery. However, this only holds if the fixed residual charge has no economic meaning i.e., does not affect access.
- **Third best: ‘Optimal’ tariffs:** A combination of various usage and fixed costs presenting the best opportunity to recover all efficient costs across time i.e., pricing flexibility based on pricing principles.⁶

The key takeaways of the approaches to efficient pricing and the overall recovery of BBM costs are that:

1. More effective solutions to pricing structures are needed that flexibly balance cost recovery, market maturity and tariff responsiveness across time.
2. LRMC is a reference point for variable charges only, as with most forward-looking models sensitive to many input assumptions.
3. The economic meaning of fixed tariffs, typically recovered via sunk cost depreciation charges, should not be ignored across various user groups.

³ Frontier Economics, Incentives in NBN Co’s proposed SAU variation, 21 March 2022, [16].

⁴ Frontier Economics, Incentives in NBN Co’s proposed SAU variation, 21 March 2022, [18].

⁵ Frontier Economics, Efficiency and competition assessment of NBN Co’s proposed pricing construct. Prepared for NBN Co, 29 June 2022.

⁶ Optimal tariffs can also be described as an intertemporal Ramsey pricing problem, see for example Laffont and Tirole, *Competition in Telecommunications*, MIT Press, 2000, section 2.2; Berg and Tschirhart, *Natural Monopoly Regulation: Principles and Practice*, Cambridge University Press, 1988, section 4 on non-linear tariffs and efficiency.



2.1.3 Projections of nbn’s future wholesale charges should capture real end-user value increases over time

Over the relatively long timeframe of the SAU, it is more appropriate to consider the increasing value derived by users of the network in real, rather than nominal price terms. The pricing approach proposed in the SAU Variation will deliver real value increases to end-users over the term of the SAU.

On page 24 of its Consultation Paper, the ACCC includes a chart (Figure 3) that shows the “expected” SAU wholesale charges for products 100 Mbps and below in nominal dollar terms over the period to 2040. The ACCC subsequently provided the details of the calculations used to produce this chart.⁷

nbn has concerns about the ACCC’s modelling of **nbn**’s wholesale charges for speed tiers of 50 Mbps and below, both in terms of the methodological approach and the specific prices generated by such an approach.

nbn considers that the price metrics chosen by the ACCC do not properly reflect the increased value of **nbn** services over time and are not relevant to evaluating the efficiency and reasonableness of **nbn**’s SAU pricing construct or the extent to which it promotes the LTIE.

The ACCC’s price projections focus on the **nominal** prices of **nbn** wholesale products until 2040, while incorporating projected overage charges based on estimated CVC usage growth over time. **nbn** does not consider that this is the correct metric for assessing the efficiency of **nbn**’s pricing, for two reasons.

First, nominal amounts (unadjusted for inflation) are not a useful metric for measuring price growth over time. Nominal prices do not reflect relative value or affordability over time, particularly over the long period until the end of the SAU term. Real or inflation-adjusted prices are a more accurate metric for measuring changing value over time. Importantly, where the SAU price controls limit annual price increases to CPI (which **nbn** considers to be a sound approach), **nbn** will not be able to increase prices in real terms during the SAU term, notwithstanding increases in nominal amounts.

Second, the ACCC’s incorporation of overage (based on estimated CVC usage growth) in its projections of **nbn**’s wholesale charges does not permit a like-for-like comparison between prices at the beginning of the projection (i.e., FY24) and later prices (e.g., in FY30 or FY40).

For example, the ACCC projects a price of \$77.53 for 50 Mbps services in FY30 (compared to \$58.84 in FY24).⁸ This includes the additional overage that RSPs are expected to pay based on the ACCC’s estimates of increased CVC usage by FY30. Comparing these two prices on a linear price path ignores the fact that increased CVC usage:

- reflects end-users obtaining greater value and utility from **nbn** services over time; and
- creates greater demands on **nbn**’s network, requiring greater investment.

Accordingly, it is only telling part of the story to compare overage-inclusive charges on a linear basis over time, without factoring in the increased value that such increased CVC usage creates for end-users.

It is allocatively efficient to allow **nbn** to recover its costs over time by increasing wholesale charges to reflect the increased utility that RSPs and end-users gain from **nbn** services, within its revenue constraint. **nbn** has already committed to automatically increasing CVC inclusions over time (to capture 50% of absolute usage growth on a

⁷ ACCC, *Explanatory note – ACCC model of NBN SAU projected access costs*, 15 June, 2022, and associated Excel model.

⁸ ACCC model of NBN SAU projected access costs, 15 June 2022, <https://www.accc.gov.au/system/files/ACCC%20model%20of%20NBN%20SAU%20projected%20access%20costs.xlsx>.



given speed tier⁹). This protects RSPs and end-users from unforeseen price growth due to demand shocks, while also allowing them to obtain greater value from **nbn** services for the same nominal price. **nbn** also bears the entire risk of CVC usage growth and demand shocks for speed tiers of 100 Mbps and above, due to the AVC-only pricing construct proposed in the SAU Variation.

The proposed pricing construct will therefore result in a situation where real prices of speed tiers below 100 Mbps *at most* remain stable over time (or, more likely, fall), while RSPs and end-users will obtain progressively greater value, in the form of increased CVC inclusions at no additional charge. More importantly, over all TC4 services, **nbn** forecasts real price decline over the SAU period from \$51.4 in FY24 to \$46 in FY40 (real FY23 values at 2.5% CPI), whilst delivering significant uplifts in quality and speed. It is this greater value in real terms – and not the nominal price level – that is relevant to assessing the efficiency (and ultimately the reasonableness) of **nbn**'s pricing construct.

2.1.4 nbn comments on ACCC assumptions underlying price projections

In addition to the concerns set out in section 2.1.3, **nbn** also has concerns about the assumptions that underpin the ACCC's nominal price projections in its Consultation Paper. In particular, there are three factors that would result in prices (particularly prices for wholesale services of 50 Mbps and below) being substantially lower than the ACCC's projections:

- **nbn** considers that the ACCC has not used the correct starting prices for its projections (for FY24), which results in the entire price path being systematically inaccurate. These inaccuracies in starting prices are compounded in the ACCC's price modelling over the duration of the SAU, leading to unrealistic outcomes for **nbn**'s wholesale prices, particularly in outer years;
- **nbn**'s revenue controls would prevent **nbn** from charging the prices projected by the ACCC from FY28 onwards;
- overage is a small proportion of RSPs' overall costs and demand shocks are likely to have a very limited impact on overall RSP costs;
- long term projections of prices in nominal terms do not account for changes in affordability, relativity to other goods and overall household budget, and therefore is an incomplete analysis when assessing prices longer term; and
- **nbn** is subject to significant and increasing competitive constraints, which will further prevent it from pricing up to the amounts projected in the Consultation Paper.

2.1.4.1 The ACCC's starting prices for its projections do not appropriately incorporate the most recent nbn information

The starting prices outlined in the ACCC's Consultation Paper are significantly higher than **nbn**'s estimates. For example, **nbn**'s estimates indicate that the wholesale price of the 50 Mbps product (including CVC overage) will be \$50.60 in FY24, significantly lower than the \$58.84 projected by the ACCC. This 16% difference in starting points leads to large divergences over the timeframe being considered.

⁹ See section 12.3.1. of nbn's SAU variation supporting submission published on 23 May 2022. Note that the adjustments are not based on % usage growth, but rather on absolute mean busy hour throughput, measured in Mbps, therefore plans with lower inclusions values are not disadvantaged.



nbn considers that this divergence is the result of the ACCC forecasting significantly higher CVC utilisation (and therefore overage) in the opening year of projections than will actually be the case.

The ACCC appears to base its projected CVC utilisation for the opening year of its projections (FY24) on nbn’s SAU discussion paper published in June 2021.¹⁰ In particular, Table 2 of nbn’s discussion paper set out nbn’s expected effective wholesale prices under the May 2022 bundle roadmap. The calculations in Table 2 of the discussion paper refer to estimated prices at the end of the roadmap period prior to transition to SAU pricing (i.e., May 2023).¹¹ The ACCC appears to have used these figures to derive CVC utilisation as at *May 2021* (i.e., two years earlier than what these figures are intended to refer to). The ACCC has then further indexed the utilisation by 2 years at 13% compound annual growth. This significantly inflates the projected CVC utilisation for speed tiers of 50 Mbps and below in FY24. In the case of 50 Mbps services, the ACCC utilisation assumption is overinflated by around 0.6 Mbps (equating to a \$4.90 price difference).

In addition, since the June 2021 discussion paper, nbn has updated its usage forecast methodology and published new forecasts as part of the December SAU Working Group. These took into account migration of heavy users onto AVC-only speed tiers, which is expected to further reduce average CVC utilisation on speed tiers of 50 Mbps and below.

Furthermore, the price points nbn provided in its SAU Variation proposal are intended to be the prices for FY24 without further changes, whereas the ACCC has assumed additional price indexation before the prices are effective in market.

Figure 1 provides a breakdown of the impact of the ACCC’s assumptions on the starting prices of 50 Mbps services. Once these assumptions are adjusted to reflect the most recent information provided by nbn, the price of 50 Mbps services in FY24 is projected to be only \$50.60. This much lower starting price affects the entire price growth path to 2040.

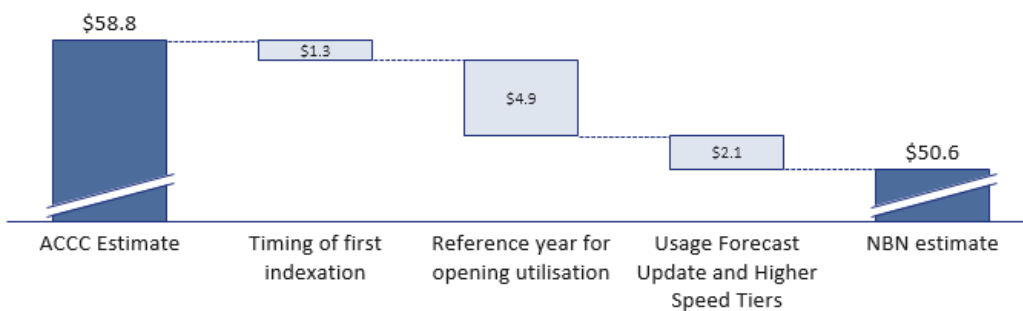


Figure 1: Comparison of 50 Mbps starting prices in FY24

2.1.4.2 nbn’s revenue controls will prevent nbn from charging the prices projected by the ACCC

The ACCC’s price projections also assume an unrealistic price growth gradient that does not take account of nbn’s revenue controls under the SAU Variation. For example, the ACCC projects that the price of 50 Mbps services will reach \$88.25 by FY30. Such prices would not be achievable under nbn’s proposed revenue constraints unless

¹⁰ nbn, RMID1064, nbn Special Access Undertaking Variation 2021 – Discussion Paper, June 2021, <https://www.nbnco.com.au/content/dam/nbn/documents/media-centre/media-statements/2021/nbnco-special-access-undertaking-variation-2021-discussion-paper.pdf>.

¹¹ nbn, RMID1064, nbn Special Access Undertaking Variation 2021 – Discussion Paper, June 2021, p. 12, <https://www.nbnco.com.au/content/dam/nbn/documents/media-centre/media-statements/2021/nbnco-special-access-undertaking-variation-2021-discussion-paper.pdf>.



there is a very significant (and highly unlikely) reduction in volumes. Figure 2 shows implied revenue projections based on the prices projected in the ACCC’s Consultation Paper, constant speed tier mix and **nbn**’s long term volume projections provided to the ACCC. Implied revenue projections based on the ACCC’s projected prices would exceed **nbn**’s proposed revenue cap from FY28 and are expected to exceed the revenue cap by as much as \$3bn by FY40. Accordingly, the prices that the ACCC assumes **nbn** will charge for 50 Mbps services from FY28 onwards are not possible under **nbn**’s proposed revenue cap.¹²

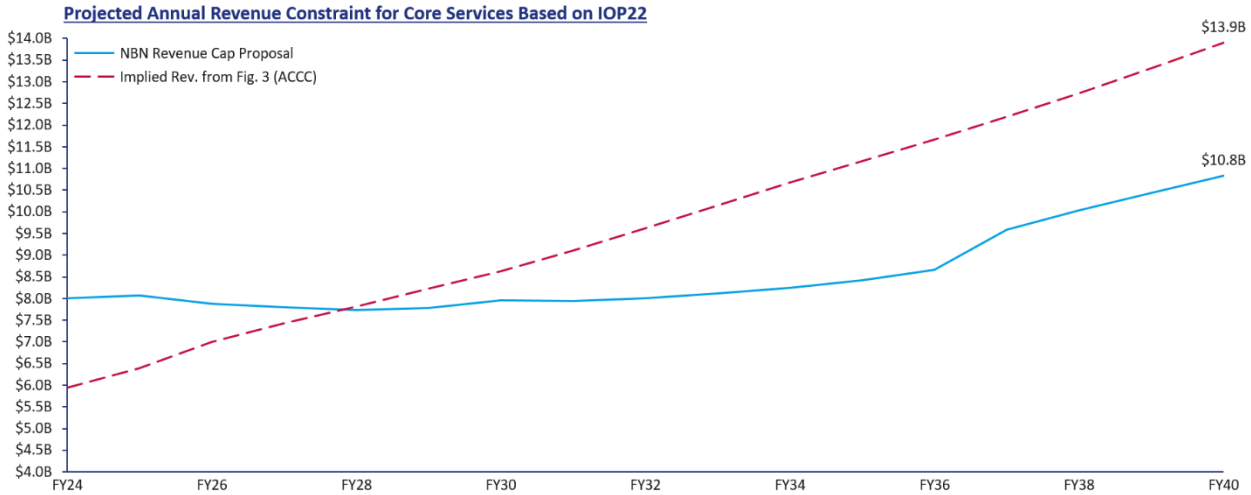


Figure 2: Implied ACCC revenue projection vs NBN proposed revenue cap [Nominal \$]

The prices projected by the ACCC are also inconsistent with the revenue projection provided by **nbn** as part of its building block model submission. As shown in Figure 3 at constant speed tier mix, the ACCC’s projected ARPU in real terms significantly exceeds **nbn**’s, with **nbn** expecting a real price decline instead of an increase over the SAU period, from around \$51 to \$46 per service per month.

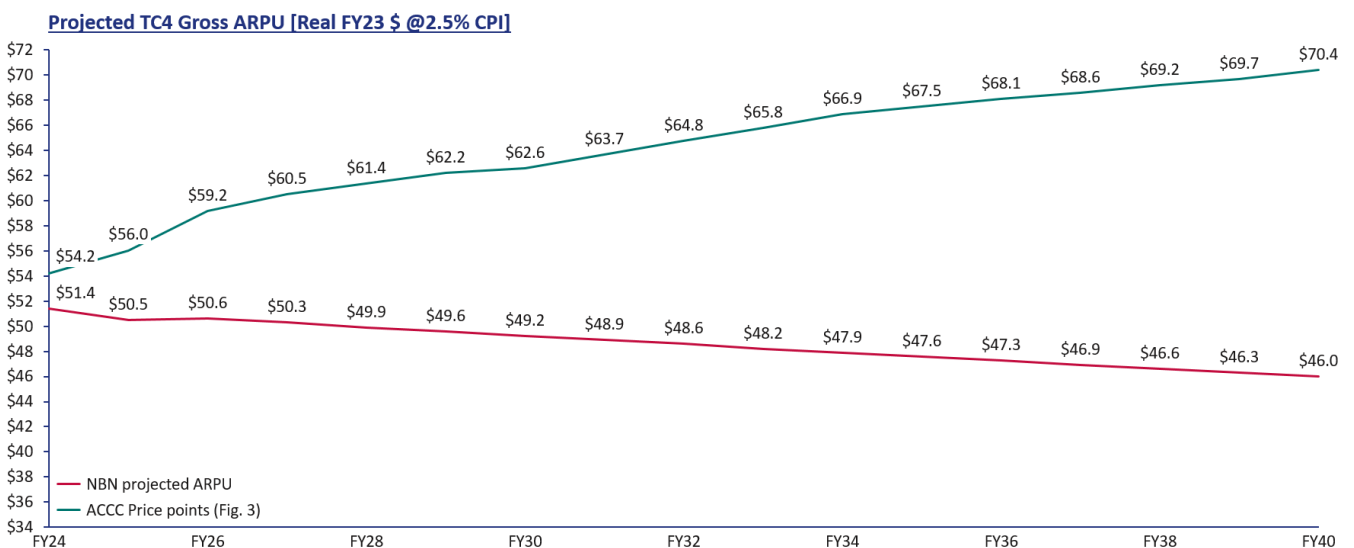


Figure 3: Real price paths based on nbn’s long term projection in the BBM [Real FY23\$ @ 2.5% CPI]

¹² This analysis, including Figure 2, does not take into account any application of the 50/50 “unders and overs” mechanism proposed by **nbn** in the SAU Variation.



2.1.4.3 nbn considers the impact of demand shocks on RSPs overall costs to be very limited

While overage is an important part of **nbn**'s current pricing framework, it is important to recognise that a significant portion of **nbn**'s network bandwidth provisioning is not charged on a variable basis, and is primarily sold as part of the fixed charge component of the bundled speed tier. Importantly, overage revenue represents a very small proportion of **nbn**'s overall TC-4 revenue. For example, in FY21, **nbn**'s TC-4 overage revenue was approximately \$0.13bn, around 3% of its total TC-4 revenue of \$4.3bn. The COVID pandemic saw peak usage increase by up to 25% during the peak hour, however the potential increase in overage was not monetised by **nbn** and instead was rebated back to the industry in the form of "CVC Boost", which was valued at \$0.15bn, or 3.4%, bringing *potential* overage revenue during the pandemic to a total of 6.4% of TC-4 revenue. While **nbn** recognises the cost certainty issues associated with overage, it needs to be considered within the context of the relatively small contribution of variable cost to RSPs' overall cost, which remains predominantly fixed.

Under **nbn**'s current pricing proposal, the total overage revenue is forecast to be about \$200M in FY24 (~4% of TC4 revenue), which is in line with current fixed and variable revenue composition. However, it is important to note that vast majority of this overage revenue is attributed to the 25 Mbps speed tier, which by design will have a materially lower fixed charge than at present, associated with the variable charge component, enabling greater flexibility by RSPs to construct retail offers targeted to budget customers in the form of capped data plans.

2.1.4.4 nbn operates in a highly competitive environment that prevents it from raising prices in the manner envisaged by the ACCC

A final reason why **nbn** considers the ACCC price projections to be unlikely to eventuate is the significant and increasing competition that constrains **nbn**'s pricing behaviour in the broadband market. These competitive constraints are likely to result in **nbn**'s actual wholesale prices being substantially lower than both the maximum prices achievable under the proposed revenue controls (and the prices projected in the Consultation Paper).

Apart from competition constraining **nbn**'s ability to raise prices, competitive pressures make it highly unlikely that **nbn**'s pricing will follow a linear upward trend (as projected by the ACCC in its Consultation Paper). Assuming that **nbn**'s products will attract higher and higher prices over time is inconsistent with evidence from the telecommunications market over the last 20 years, where prices for connectivity products have experienced declines in prices in real and quality-adjusted terms. Such an assumption would require that **nbn** faces no competitive constraint at all and can price unconstrained by any actual or potential competition.

nbn faces substantial competition from other network operators (both mobile network operators and fixed-line network operators). These network operators are often also RSPs who supply **nbn** services. They are increasingly focusing on migrating or substituting services on their own networks to replace **nbn** services. For example, TPG Telecom has announced its strategy of substantially increasing the size of its 'on-net' customer base, targeting 20% of its customer base being served by its own fixed wireless network over time.¹³ A TPG Telecom survey of its customer base found that two-thirds would consider moving from their existing broadband service onto a fixed wireless service.¹⁴ TPG Telecom states its approach to fixed line fibre services to be "to use our on-net services first to selectively invest where it makes sense and then to expand using NBN as the second option".¹⁵

¹³ TPG Telecom Investor Day Presentation, 23 June 2022, <https://www.tpgtelecom.com.au/sites/default/files/2022-06/20220623%20TPG%20Telecom%202022%20Investor%20day%20presentation%20FINAL-2.pdf>, slide 20.

¹⁴ TPG Telecom Investor Day Presentation Transcript, 23 June 2022, <https://www.tpgtelecom.com.au/sites/default/files/2022-06/TPG%20Investor%20Day%202022%20third-party%20transcript.pdf>, p.9.

¹⁵ TPG Telecom Investor Day Presentation Transcript, 23 June 2022, p.11.



Competitive pressure from fixed wireless providers is not unique to Australia, Spark in NZ demonstrated similar propensities, having already migrated 700k or 26% of its broadband connections onto its fixed wireless network, it's now targeting 30-40% of its broadband connections in the medium to long term.¹⁶

Additionally, the proliferation of 5G mobile networks is likely to result in mobile broadband being an increasingly vigorous competitor to **nbn** services. As the ACCC has noted, all of the mobile network operators have advanced the rollout of their 5G networks and services and are “well placed to not only offer improved mobile broadband, but also provide fixed wireless alternatives to homes and small businesses, in competition with traditional fixed-line broadband and NBN technologies”.¹⁷ That mobile broadband and fixed wireless services are substitutes for fixed-line broadband is demonstrated by the fact that Australia’s median mobile broadband speeds are already higher than fixed broadband speeds (75.02 Mbps relative to 51.91 Mbps as of May 2022).¹⁸ Mobile broadband prices in Australia are also among the lowest in the world, with an average price per GB of US\$0.70 (compared to US\$1.09 in Singapore, US\$1.42 in the United Kingdom, US\$3.33 in the United States and US\$6.99 in New Zealand).¹⁹ This indicates a clear threat from mobile broadband and fixed wireless providers to compete with **nbn** services, which is likely to manifest particularly strongly in respect of **nbn**’s entry-level products.

Indeed, competition from 5G mobile broadband and fixed wireless services is already accelerating in the market. Mobile network operators are increasingly advertising 5G home broadband products as alternatives to **nbn** services and pricing them below comparable **nbn**-powered retail services. For example, TPG/Vodafone is specifically advertising 5G home broadband plans as “Our alternative to **nbn**™”.²⁰ The prices for these services also indicate that they are positioned as alternatives, with TPG/Vodafone charging \$60-\$65/month for a 50Mbps 5G home broadband plan²¹ compared to \$65-\$80 for a 50Mbps **nbn** broadband plan.²²

MNOs also highlight key aspects of their 5G home broadband services that are comparable or better than similarly priced **nbn** plans. For example, Optus promotes a 50 Mbps minimum guarantee on 5G with a 83 Mbps typical busy period download speed on its 5G Internet Everyday plan (priced at \$69/month)²³ compared to a 50 Mbps typical busy period download speed for **nbn** Internet Everyday plan (priced at \$79/month).²⁴ Telstra promotes average download speeds on its 5G home broadband of 378 Mbps (for \$85/month)²⁵ compared to typical evening download speeds of 25 Mbps on its \$80 ‘Telstra Upfront Internet Plan Basic) and of 50 Mbps on its \$85/month ‘Telstra Upfront Internet Plan Essential’.²⁶

¹⁶ Spark investor strategy update <https://investors.sparknz.co.nz/FormBuilder/Resource/module/gXbeer80tkeL4nEaF-kwFA/Spark%202023%203-Year%20Strategy%20FINAL.pdf>

¹⁷ ACCC, Communications market report 2020-21, December 2021, pp. xi.

¹⁸ Ookla Speedtest Index, <https://www.speedtest.net/global-index>.

¹⁹ Cable.co.uk, Worldwide Mobile Data Pricing 2021, <https://www.cable.co.uk/mobiles/worldwide-data-pricing/>.

²⁰ Vodafone, 5G Home Internet Plans, <https://www.vodafone.com.au/home-internet/5g> (accessed 19 July 2022).

²¹ Vodafone, 5G Home Internet Plans, <https://www.vodafone.com.au/home-internet/5g> (accessed 19 July 2022).

²² Vodafone, Unlimited **nbn** plans from Vodafone, <https://www.vodafone.com.au/nbn> (accessed 19 July 2022).

²³ Optus, 5G Home Broadband Plan, <https://www.optus.com.au/broadband-nbn/5g-home-broadband/5g-home-broadband-plan> (accessed 19 July 2022).

²⁴ Optus, **nbn** Plans from Optus, <https://www.optus.com.au/broadband-nbn/home-broadband/plans/shop> (accessed 19 July 2022).

²⁵ Telstra, 5G Home Internet plans from Telstra, <https://www.telstra.com.au/internet/5g-home-internet> (accessed 19 July 2022). The first month on this plan is \$0.

²⁶ Telstra, **nbn** Plans from Telstra, <https://www.telstra.com.au/internet/nbn> (accessed 19 July 2022). The monthly charge for the ‘Telstra Upfront Internet Plan Essential’ increases to \$95/month after the first six months.



The presence of 5G home broadband services in the market, advertised as **nbn** alternatives and priced lower than equivalent **nbn** services, creates very strong competitive constraints on **nbn**'s pricing. As 5G coverage rapidly increases, 5G broadband services will become increasingly vigorous competitors, making it highly unlikely that **nbn** will have the ability to raise its prices in accordance with the ACCC's projections.

The competitive constraint of 5G broadband services is further demonstrated by the increasing "worth what you pay" score of mobile broadband services. As seen in Figure 4, **nbn**'s fixed line services have remained relatively stable on this metric, while the "worth what you pay" percentage of mobile broadband services has increased from 34% to 49% between 2017 and 2021.²⁷ This suggests that end-users are perceiving increasing value from these services. For **nbn** to continue maintaining customers in this environment (and recover the substantial investments in its network), **nbn** will need to ensure that its services continue to be perceived as creating value-for-money. It is not realistic in this environment to assume that **nbn** will raise prices by the amounts projected by the ACCC.

The numbers below indicate the percentage of surveyed households agreeing that their current home Internet service is "worth what they pay".²⁸

Worth What You Pay – by nbn Network and Competitors over the last 5 years

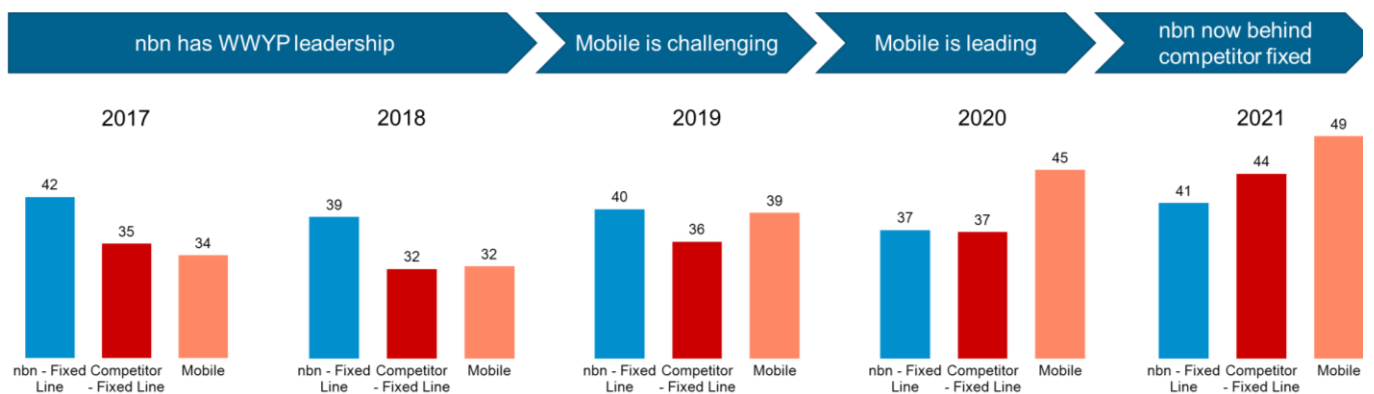


Figure 4: "Worth what you pay" scores for fixed line and mobile broadband services

Competition from alternative fixed-line and fixed wireless network operators is also intensifying. **nbn** faces fixed-line and fixed wireless competition from an increasing range of network operators, including TPG, Uniti Group, DGTek, Gigafy, Lightning Broadband, GigaComm and Spirit. The pricing of services on these competing networks is usually below **nbn**'s pricing.²⁹

nbn-alternative fixed-line networks are also growing in size and bandwidth capability. As the ACCC has itself noted, "the rollout of superfast telecommunications infrastructure by network operators other than NBN Co in both new 'greenfield' developments as well as existing 'brownfield' areas provides an opportunity for network providers to enter and expand their market presence. It also applies competitive pressure on NBN Co to continue

²⁷ ERGO Strategy primary research on behalf of **nbn**.

²⁸ 'Mobile' includes both home fixed wireless broadband as well as mobile only customers.

²⁹ For example, TPG's retail 50 Mbps services (using nbn services as an input) are priced at \$69.99 per month, while FTTB services with a typical evening speed of 90 Mbps are priced at \$59.99 per month: <https://www.tpg.com.au/nbn> and <https://www.tpg.com.au/fttb>. Similarly, GigaComm advertises a 200/50 Mbps service for \$79 per month, which is well below the prices offered by RSPs for nbn-powered 200 Mbps services: <https://www.gigacomm.net.au/residential/apartment>.



upgrading technology and improving service levels.”³⁰ For example, TPG has significantly expanded its FTTB network footprint recently, from 169,000 premises in FY19 to 244,000 premises in FY21.³¹ TPG has also recently announced technology upgrades, such as G.Fast, that will enable it to provide speeds of up to 1000 Mbps via its FTTB network, facilitating deeper competition with **nbn** across a greater range of speed tiers.³² The ACCC has also noted that Uniti “has established itself as the largest residential fixed-line challenger to NBN Co with more than 565,000 premises connected, ready to connect, in construction or contracted, as at 30 June 2021”.³³ As noted by the ACCC, these fixed networks often co-exist and compete directly with **nbn** services at a particular premises.³⁴

The competitive pressures exerted on **nbn** by 5G home broadband and fixed-line network operators is evidenced by **nbn**’s net churn figures. **nbn** experienced net churn (disconnections minus reconnections) of 246,000 premises in FY21, representing 3.0% of all connected premises. **nbn**’s IOP expects churn rates to continue increasing until FY23 (to 285,000 premises) and to remain positive (i.e., disconnections exceed reconnections) in the foreseeable future.

Such churn rates are consistent with the view that **nbn** faces high and increasing levels of competition from mobile broadband and fixed-line network operators. It is unlikely that this can be explained completely or even predominantly by end users simply no longer requiring a broadband service.

To retain customers on its network in these competitive circumstances, **nbn** will be required to dynamically respond to pricing trends in the market. This makes it highly unlikely that **nbn** will be able to raise effective prices to the maximum regulated levels and even less so in a linear, upward manner, up to the amounts projected in the Consultation Paper. In addition, since **nbn**’s price controls apply on an annual ‘use it or lose it’ basis, **nbn** will not be able to ‘save up’ potential price increases from those years when it is unable, or otherwise chooses not to, increase prices, and hence **nbn**’s MRPs will track **nbn**’s effective prices.

2.1.5 Concerns about affordability for specific end-user groups are more appropriately dealt with outside the SAU

The ACCC’s Consultation Paper expresses specific concerns about price growth for entry-level products, and the impact this has on affordability for entry-level consumers. As discussed in section 2.1.4 above, the ACCC’s projections for the price growth of entry-level products do not, in **nbn**’s view, accurately reflect relevant information about **nbn**’s current and future state.

Moreover, **nbn** notes that it operates in a competitive market, particularly for entry-level consumers who are relatively more price sensitive. It is not in **nbn**’s commercial interest to price these consumers out of the market and use price rises to offset volume losses. To the contrary, **nbn** has strong incentives to maximise the take-up of services on its network and ensure that its entry level product remains competitive both in price and quality.

³⁰ ACCC, Communications market report 2020-21, December 2021, p.13

³¹ **nbn** internal data.

³² TPG Telecom, “TPG Telecom launches superfast G.Fast broadband services”, 19 May 2022, https://www.tpgtelecom.com.au/sites/default/files/media-release/Media%20release_TPG%20Telecom%20launches%20superfast%20G.Fast%20network%20upgrade.pdf/

³³ ACCC, Communications market report 2020-21, December 2021, p.14.

³⁴ For example, the ACCC estimates that **nbn** fixed services are available at 94% of the 240,000 premises in high-density apartment buildings in Sydney, Melbourne, Brisbane, Adelaide, Perth, and other metro areas to which TPG Telecom FTTB services are available. ACCC, Communications market report 2020-21, December 2021, p.14.



This is evidenced by **nbn**'s proposed pricing construct in the SAU, which introduces a \$10.50 discount for customers with basic connectivity needs and reduces the price of the 25 Mbps speed tier to allow it to replace 12/1 Mbps as the entry level product (allowing end-users to obtain additional value at no additional charge). This is clear evidence of **nbn** responding to market forces and attempting to retain share against mobile alternatives. In addition, **nbn**'s track record on the 12/1 Mbps price shows a history of price reduction rather than price increases. In the period from April 2020 to April 2021, average effective wholesale price of the 12/1 Mbps service has steadily declined by more than 14% in nominal terms, from \$35 to around \$30 as of May 2022, due to a combination of declining network usage on this speed tier and reduction of fixed charges.

To the extent that there remain concerns about affordable access to **nbn** services, it is important to note that in consultation with RSPs, **nbn** has been exploring opportunities to provide discounted plans to low-income groups for some time now. For example, in response to the COVID-19 pandemic **nbn** offered a free wholesale plan to RSPs to support low-income households with school-aged children who did not have an active **nbn** connection at home. More recently, **nbn** conducted a pilot with Catholic Education Western Australia in a small number of schools and **nbn** is working closely with government to help deliver their election commitment to provide free broadband to 30,000 school children. **nbn** has also made commitments in Module 3 of the SAU Variation to facilitate targeted measures to improve access and affordability for entry-level users on an ongoing basis.³⁵ In particular, **nbn** has made commitments to convene an annual industry working group on low-income and related accessibility issues and to publish updates on **nbn**'s activities in relation to low-income, vulnerable and unconnected end-users. These commitments are discussed at greater length in **nbn**'s supporting submission.³⁶

2.1.6 Product differentiation will dynamically evolve as end-user requirements increase

In the short term (to around 2030), it is unlikely that there will be any material convergence between the 50 Mbps and 100 Mbps services. Over the longer term, as consumer demand continues to shift towards higher speed services, product differentiation will dynamically evolve towards those higher speeds, even if the degree of differentiation between lower speed services (i.e., 50 and 100 Mbps services) reduces, leaving the overall level of product differentiation relatively unchanged.

The ACCC expresses concern in its Consultation Paper about projected price convergence between 50 Mbps and 100 Mbps services, which the ACCC considers would lead to a “*narrowing of reasonably priced access products in the market*” and a reduction in retail product differentiation.³⁷

nbn considers it highly unlikely that a reduction in product differentiation will occur over the course of the SAU term.

In the short term, there is unlikely to be a convergence between the pricing of 50 Mbps and 100 Mbps services, so as to remove the distinct position and role of these speed tiers in the market. In the medium to long term (2030 and beyond), it is likely that the nature of product differentiation will continue to evolve dynamically, in line with evolution in consumer demand and changing technology capabilities. While there is likely to be a convergence in price between 50 Mbps and 100 Mbps services beyond 2030 in line with consumer demand for increased speed,

³⁵ SAU Variation, clause 3E.2.

³⁶ **nbn** SAU Variation 2022, supporting submission, March 2022, section 11.4.2.

³⁷ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, pp. 24–25.



product differentiation is likely to shift to higher speed tiers, with the result that the overall level of differentiation between **nbn**'s products will remain the same or increase.

By 2030, the position and function of 50 Mbps and 100 Mbps products in the market will be materially different to now. As explained further below, data usage and bandwidth requirements are expected to continue growing strongly over the SAU term. This is likely to result in specific market segments (i.e., entry-level, mid-market and high-bandwidth users) needing to be served by different speed tiers than at present.

In particular, the increased demand for higher-speed services from 2030 onwards is expected to result in increased product differentiation between 100 Mbps products and 250+ Mbps products, with 100 Mbps products playing a similar role in the market as 50 Mbps products currently play (i.e., catering to users with moderate bandwidth needs), while 250 Mbps+ products will cater to users with relatively higher bandwidth requirements.

Importantly, regardless of technological evolutions and increased overall bandwidth requirements, **nbn** will maintain clear incentives to continue delivering a wide range of product offerings, catering to different market segments and different usage patterns. This is a result of the competitive environment that **nbn** operates in (in which speed, price and other product attribute are important differentiators) and the need to increase and maintain network take-up to recover investment. In addition, given its wholesale only status, **nbn** has aligned interests with end-users in regard to development of downstream markets and there is a clear financial benefit to **nbn** from developing new products and pricing appropriately. For these reasons, **nbn** does not consider it likely that any long-term convergence in the prices of 50 Mbps and 100 Mbps services will lead to an overall loss of product differentiation.

2.2 Demand for higher speeds will continue to grow

In **nbn**'s view, the demand for higher access speeds will grow at much faster rates than expressed in the ACCC's consultation paper. This is supported by observable global trends as well as by direct observations of end-user experience on **nbn**'s network.

nbn considers it highly unlikely that in 2028, the median needs of end-users will only be 29 Mbps – this would suggest that Australia is an international outlier in speed requirements – which has not been **nbn**'s experience over the past decade.

The characteristics of the TCP/IP protocols used to deliver internet services, the algorithms used by applications such as streaming video services, and the increasing level of concurrency of usage of services on **nbn**'s network suggest that even today, 50 Mbps may be required to deliver a reasonable level of service in most cases. This is borne out by the real-world experience observed by **nbn** on its network.

2.2.1 Overview and context

The progressive upward shift in the nature of product differentiation is a function of the expected rapid growth in bandwidth requirements over time. To this end, **nbn** considers that the forecasts of the Bureau of Communications and Arts Research (**BCAR**) in relation to future household speed requirements³⁸ are low and are not supported by broader evidence regarding broadband usage trends in Australia and internationally.

³⁸ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 25.



These issues have been considering in detail by **nbn**'s Chief Technology Officer (**CTO**). In their view, there are long-term observable trends that point to the ongoing demand for higher-speed services over time. As a starting point, we observe that in 1965, Gordon Moore predicted that semiconductor densities would double every two years.³⁹ The demise of Moore's law has been predicted many times – in fact, Peter Lee – Vice-President of Microsoft Research – posited that "The number of people predicting the death of Moore's law also doubles every two years".⁴⁰

The resultant digital revolution has been astonishing and benefited societies across the world. Just as Moore's law has held for over 5 decades, there is an equivalent law of internet bandwidth requirements (that has paralleled Moore's law) for high-end users growing at 50% per year on year—Nielsen's law.⁴¹ This has held true from 1983 to 2019, growing from 300 bps to nearly 100 Mbps in 2018.

In **nbn**'s CTO's view, many people have been brave in trying to predict that internet bandwidth and speed requirements will slow down, but just as been the case for Moore's law, there is not yet significant and compelling evidence that this is occurring. Supporting **nbn**'s view this month the Federal Communications Commission (FCC) in the United States circulated a Notice of Inquiry proposing a change in the definition of a broadband connection in the United States from 25 Mbps to a 100 Mbps minimum download speed. It was noted by FCC Chairwoman Rosenworcel that, "*the needs of internet users long ago surpassed the FCC's 25/3 [Mbps] speed metric, especially during a global health pandemic that moved so much of life online. ...we need to raise the standard for minimum broadband speeds now and while also aiming even higher for the future, because we need to set big goals if we want everyone everywhere to have a fair shot at 21st century success.*"⁴²

In the opinion of **nbn**'s CTO (and consistent with global thinking), internet speed requirements will continue to grow in line with the digitisation of the country and that, in line with the views of the FCC, 50 Mbps is not enough for most users now, let alone in the future. The reasons for this are expanded on further in section 2.2.2 below. While **nbn**'s views are informed by theories such as Moore's law and Nielsen's law, they are firmly based on real-world experience and actual tests of **nbn** end-user requirements.

It is imperative to note the significant lead time in building the physical infrastructure required to support increasing speed and data demand and the consequences of underestimating demand could take years to correct. **nbn** sees no evidence that Australia will be an exception to global Internet bandwidth demand and we believe that ongoing investment in our network is required to ensure we can meet demand and continue the remarkable benefits of digitisation witnessed in Australia for the last 20 years.

As of April 2022, 45% of all **nbn** 25 Mbps services in operation reach their maximum possible utilisation at least twice a month, suggesting that these services are being used at the limit of their bandwidth capacity.⁴³ This has significantly increased from 33% in April 2021. Across all speed tiers, 29% of **nbn** services in operation achieve their plan's maximum utilisation threshold at least twice a month. This suggests a high level of usage intensity of the **nbn** network, which is rapidly increasing over time. If these trends are extrapolated to 2028 (the final year of the BCAR's modelling), it is clearly unrealistic that the median household speed requirement in 2028 will be only

³⁹ Gordon E. Moore, "Cramming more components onto integrated circuits", *Electronics Magazine*, Volume 38(8), April 19, 1965.

⁴⁰ Quoted in "After Moore's Law", *The Economist, Technology Quarterly*, March 2016.

⁴¹ See, for example, "Nielsen's Law of Internet Bandwidth", accessed at <https://www.nngroup.com/articles/law-of-bandwidth/>

⁴² FCC media release, 15 July, 2022. <https://www.fcc.gov/document/chairwoman-rosenworcel-proposes-increase-minimum-broadband-speeds>

⁴³ **nbn** internal data.



29 Mbps. Indeed, median fixed download speeds in Australia have already reached 51.90 Mbps as of May 2022,⁴⁴ almost double the household speed requirement predicted by BCAR for 2028.⁴⁴

Consumer research also indicates that end-users are increasingly valuing speed of service compared to other attributes, such as price. For example, in 2017, 18% of households chose speed as the most important factor when selecting an internet service provider, with 32% choosing price as the most important factor. By 2021, the situation was reversed, with 25% of households choosing speed and only 23% choosing price as the most important factor.⁴⁵ For non-nbn fixed line services, the number of households acquiring speed tiers of 100 Mbps and above increased from 13% in 2020 to 25% in 2021, suggesting that increased demand for higher-speed services is a general, consumer-led trend that arises independently of nbn's pricing construct.⁴⁶

These trends suggest that end-users are increasingly preferring to move up the speed tier value chain and are willing to pay a premium for higher-speed services. This sits at odds with BCAR's view that the vast majority of households will not require speeds greater than 78 Mbps by 2028.

The BCAR's projection that 29 Mbps will be the median household speed requirement in 2028 is also inconsistent with global broadband usage trends. In May 2022, the top 25 countries by median fixed broadband speed in the world all had median download speeds above 100 Mbps.⁴⁷ In the 12-month period between June 2021 and May 2022, the global median download speed rose from 50.78 Mbps to 64.70 Mbps, a growth of 18.1% in a single year.⁴⁸ The growth rate is even more impressive when calculated from October 2020, with global median speeds rising by 61.9% between October 2020 and May 2022.

In this context, nbn considers it highly unlikely that in six years, median speeds will remain only slightly above the capabilities of the 25 Mbps speed tier. Based on current bandwidth growth patterns and trends, it is more likely that over the course of the next decade (and beyond), end-users will increasingly switch to higher-speed services of 100+ Mbps. This is likely to result in an upward shift in the field of product differentiation, with a progressive convergence among sub-100 Mbps speed tiers coexisting with increased differentiation of products above 100 Mbps.

2.2.2 Detailed analysis of likely future end-user speeds

As described above, in the view of nbn's CTO there is compelling data showing future demand for higher-speed services will be higher than predicted by organisations such as BCAR. nbn does, however, have similar views to BCAR on the overall levels of future data downloads. The BCAR forecasted that average monthly household data downloads would rise from 199 GB in 2018 to 767 GB in 2028.⁴⁹ It also noted that video comprised 75% of internet traffic in 2017 and expected this to reach 82% worldwide by 2022.⁵⁰

nbn broadly agrees with the projected increase in household data downloads and the proposition that video will continue to constitute a significant and growing proportion of household data usage. Figure 5 below contains

⁴⁴ Ookla Speedtest Global Index, May 2022, <https://www.speedtest.net/global-index>

⁴⁵ ERGO Strategy primary research on behalf of nbn.

⁴⁶ ERGO Strategy primary research on behalf of nbn.

⁴⁷ Ookla Speedtest Global Index, May 2022, <https://www.speedtest.net/global-index>

⁴⁸ Ookla Speedtest Global Index, May 2022, <https://www.speedtest.net/global-index>

⁴⁹ Bureau of Arts and Communications Research, *Demand for fixed-line broadband in Australia – 2018-2028*, Working paper, July 2020, p. 9.

⁵⁰ *ibid*, p. 9.



nbn’s estimates of monthly downloads per AVC on an application basis between June 2021 to June 2031. The figure projects that total downloads will be approximately 700 GB by June 2028 and that video will continue to grow as an overall proportion of application usage over time.

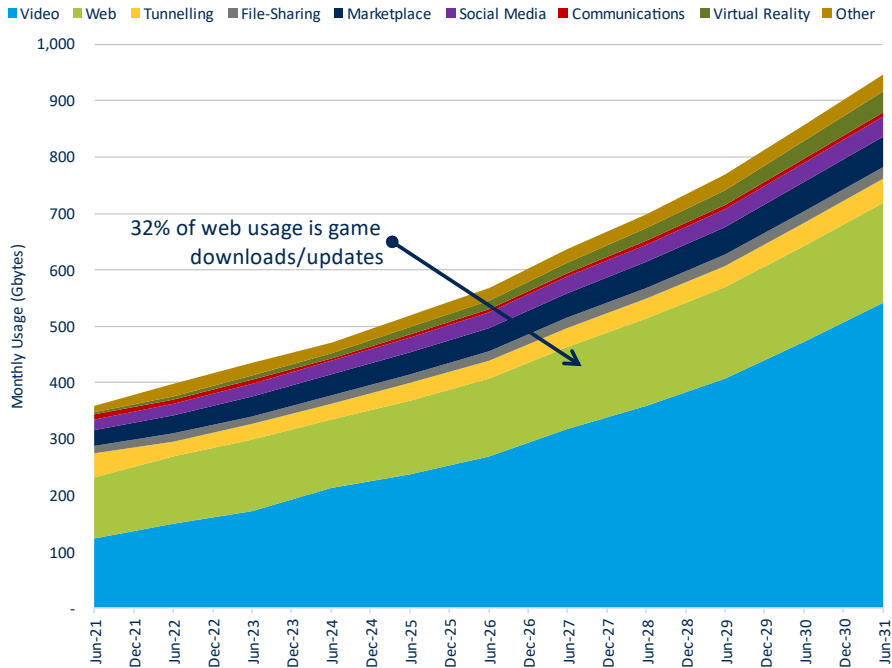


Figure 5: Downstream Application Usage Forecast to 2031

nbn’s modelling, based on 10-year usage forecasts, suggests that approximately 52% of customers today require download speeds of 50 Mbps or more. nbn projects this may reach 70% by 2028 (see Figure 6). nbn considers this is a relatively conservative estimate because as at June 2022 more than 76% of AVCs are 50 Mbps or higher. It is important to note that this analysis focuses solely on technical bandwidth requirements as an indicator of speed preference and does not account for other aspects of consumer preferences, including consumers who may prefer a higher speed due to its expediency benefits rather than based on their bandwidth requirements. Equally, it does not account for consumers’ tolerance for congestion as some consumers may prefer a lower speed (and price) at the cost of performance. That is, the material in this section is based on nbn’s CTO team’s consideration of the technical requirements for applications used on nbn’s network, rather than pricing and commercial considerations.

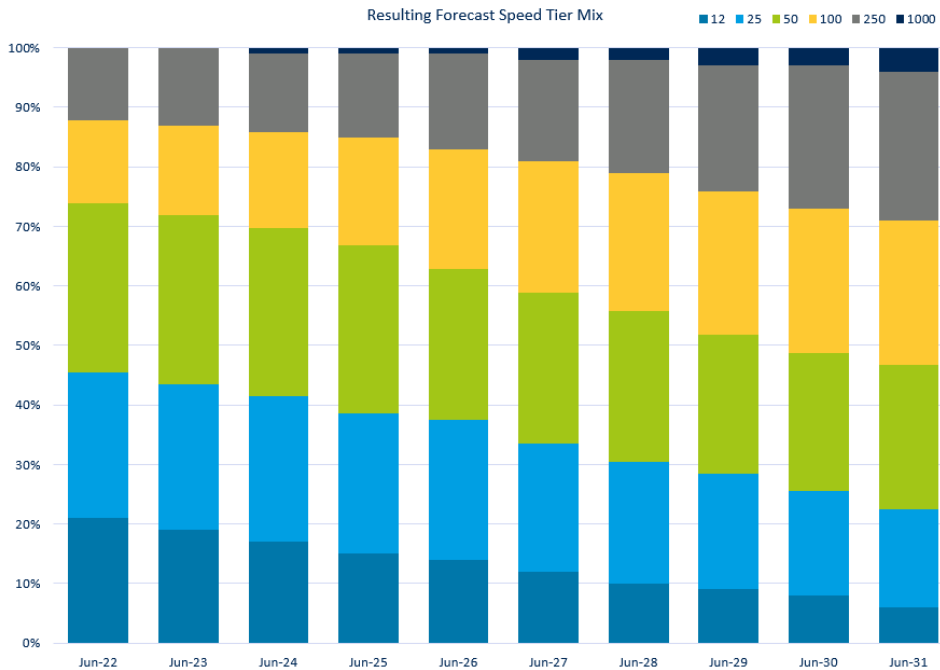


Figure 6: nbn Forecasting of Speed Tier Mix to June 2031

While growth in downstream application usage is predicted to be significant, there are many other relevant data points when considering what end-user speeds will be required by Australian consumers in future. As monthly household downstream application usage is likely to be comprised of considerable video traffic, it is important to accurately understand how video applications function and utilise the capacity of each household connection, and the impact this has on end-user experience. The prevalence of and likely increase in simultaneous / concurrent application usage (**concurrency**) within a household (especially as applications demand greater bandwidth over time) also impact video streaming applications. **nbn** considers these factors are likely to translate into end-user experiences that drive demand for household speeds much greater than a median of 29 Mbps by 2028.

In this regard, while **nbn** broadly agrees with the growth in total download volumes used by the BCAR, **nbn** does not agree with the way in which the BCAR has applied projections it relied on to determine estimated future household peak bandwidth demand. BCAR’s methodology for projecting such demand relied on assumptions about video streaming throughput requirements which are inconsistent with how streaming applications function in practice and the impact of concurrency. For example, it estimated peak speeds by averaging streaming application bit rates across an hour, which over-simplifies the way in which applications use the network, as explained in the following section.

Peak download rates and the ‘bursty’ nature of applications

While focusing on the sustained average bandwidth requirements of applications⁵¹ may be appropriate for some purposes, it is not appropriate when the aim is to understand application performance and impacts on end-user experience. The throughput requirements of streaming applications should instead be measured according to peak download rates rather than average sustained bandwidth. This is because peak download rates are better able to explain changes in streaming bit rates (which determine observable video quality and thus end-user experience), especially when accounting for available household bandwidth and concurrency. This is because of the nature of TCP/IP connections generally and streaming application buffer behaviour in particular.

⁵¹ See BCAR Report, page 73, Appendix F: Caveats to the analysis.



Generally, applications require higher connection bandwidths to sustain a particular level of average throughput (due to how TCP/IP works). Simply measuring and adding each individual application’s *average* bandwidth requirement is not appropriate for calculating *peak* speeds. A server sending data to a connection does not know the bandwidth available on an end-user’s connection. It needs to continually probe the connection to determine the bandwidth available to that application, which can change over time.

At the start of the connection (known as TCP slow start), the server increases the sending rate to the end-user exponentially until packet loss or increased delay is experienced (via acknowledgments) (‘A’ in the figure below). Delay and packet loss trigger the server to reduce the sending rate and the process of increasing the sending rate occurs again (‘B’ in the figure below). This repeating pattern (TCP congestion control) results in an average speed (measured over seconds) less than the peak (measured in milliseconds) (‘C’ in the figure below). A peak bandwidth greater than the average bit rate is therefore required to achieve this average. For an individual TCP stream, the average bit rate will always be lower than the provisioned connection bandwidth. Figure 7 below is a visual representation of this process.

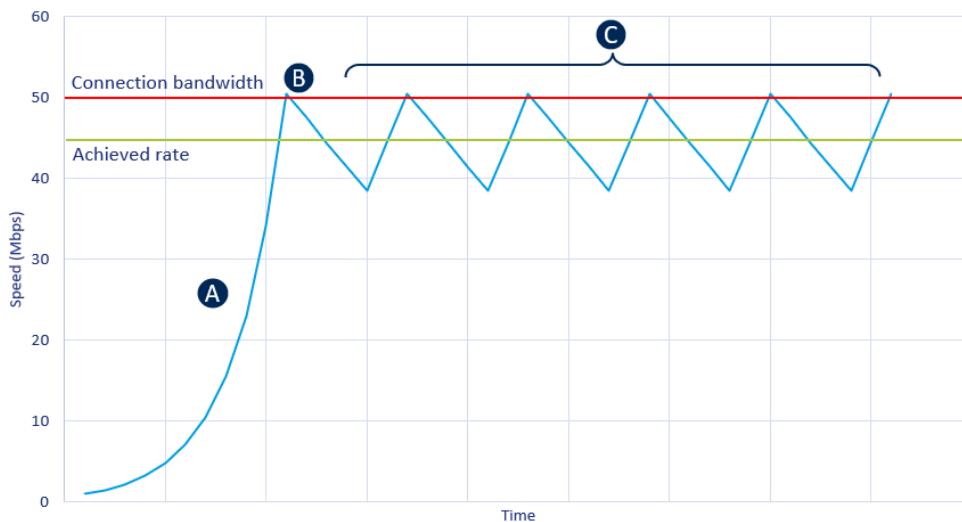


Figure 7: Simplified Example of TCP Congestion Control

Figure 8 below is an example of a file download on an **nbn** Home Ultrafast⁵² connection. The left chart shows the throughput achieved for the file download in one second intervals. The chart on the right shows the throughput achieved for the same download measured on millisecond timeframes. While the chart on the left presents a relatively ‘clean’ average throughput, the chart of the right demonstrates how TCP/IP functions as the throughput oscillations (i.e., ‘burstiness’) can be observed.

⁵² The Home Ultrafast speed tier supports wholesale download speeds of 500 Mbps to close to 1 Gbps.

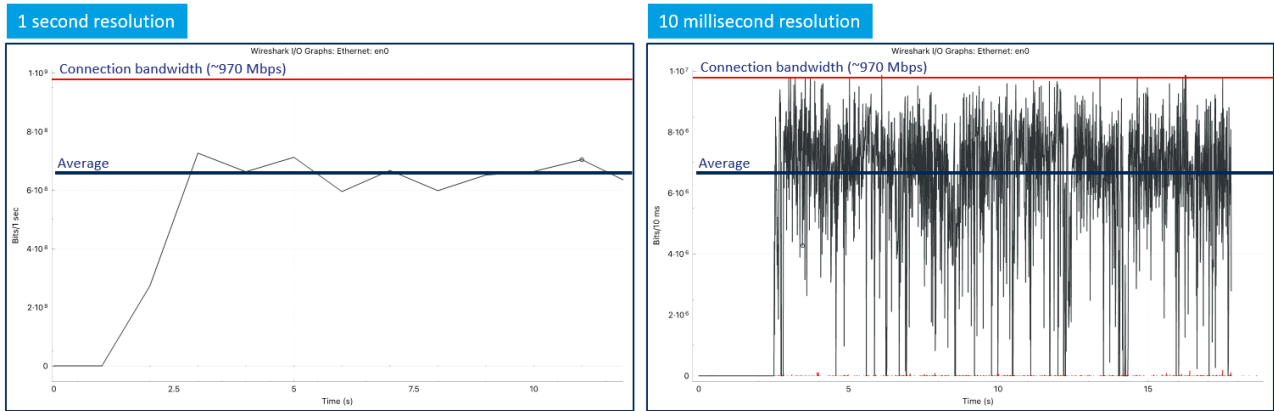


Figure 8: Micro-level Measurement of Download on nbn Home Ultrafast Connection

Servers for streaming services do not generally ‘trickle’ video at the required content bit rate. The server is either sending video data as fast as the end-user’s connection supports or not sending this data. A streamed video is many small file downloads spaced apart so that the playback remains continuous. Streaming video clients are continually checking to see if the buffer can be filled up in time to maintain continuous playback. If there is contention and the buffer is depleting too fast, the quality and/or resolution will be reduced. Bandwidth headroom is therefore required to allow for contention of the service (especially with concurrent streaming) and to ensure consistent video quality. Figure 9 below is based on an **nbn** test conducted using a major streaming client of a popular streaming series in UHD for a single video stream. It uses the results of this test to illustrate two theoretical concurrent video stream scenarios (one without and one with overlapping buffering / throughput, i.e., ‘collision’).

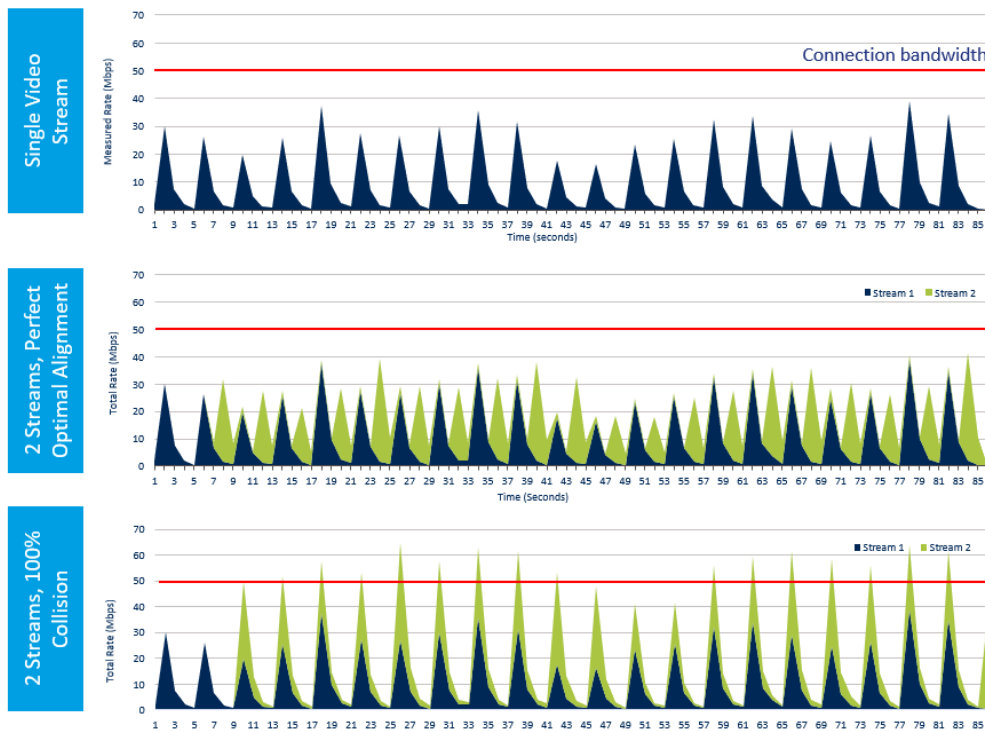


Figure 9: Lab Test of a Streaming Service and Concurrent Buffering Collision

If capacity is provided only to support a streaming application’s stated codec rate (e.g., 15 Mbps for 4K video), then the streaming client is likely to detect that it cannot create a buffer and will consequently reduce the codec rate so that a buffer can be created. This may, for example, result in a poorer quality 4K image or even a reduction in image resolution in certain circumstances.



It is not correct to simply add up each application’s average demand to determine a maximum household bandwidth requirement. Most applications, especially video streaming applications, are ‘bursty’ in the way they download data. In the case of video streaming for example: the streaming client downloads at a high rate and then falls back to low or zero bit rates (filling the ‘buffer’). When that buffer is approaching its end the client downloads at a high rate again and falls to low or zero bit rates until the next time the buffer needs to be filled. These bursts have a probability of collision with other applications in use on the end-user’s connection. The provisioned bandwidth of an end-user’s connection needs to cater for this bursty behaviour. If the maximum household bandwidth is exceeded including during a burst, application performance will be impacted (e.g., image quality or resolution degradation, interrupted playback, delay on other concurrent applications, etc.).

Figure 10 below compares the simple approach of adding up application averages to determine maximum bandwidth requirements (‘Stacked Average Bit Rates’) against an Actual Instantaneous Demand approach. Actual Instantaneous Demand takes into account the ‘bursty’ nature of applications (e.g., their peak download rates) and the probability of each application’s ‘burst’ colliding across time. **nbn** considers this is a more accurate method for assessing end-user bandwidth requirements and ultimately end-user experience. In comparison, the Stacked Average Bit Rate approach (which **nbn** considers reflects the approach essentially used by the BCAR in determining their expectations of future bandwidth requirements) of averaging and adding application bit rates may downplay end-user experience as it does not recognise the incidence of application collision (with potential resultant application performance degradation) in the busy period.

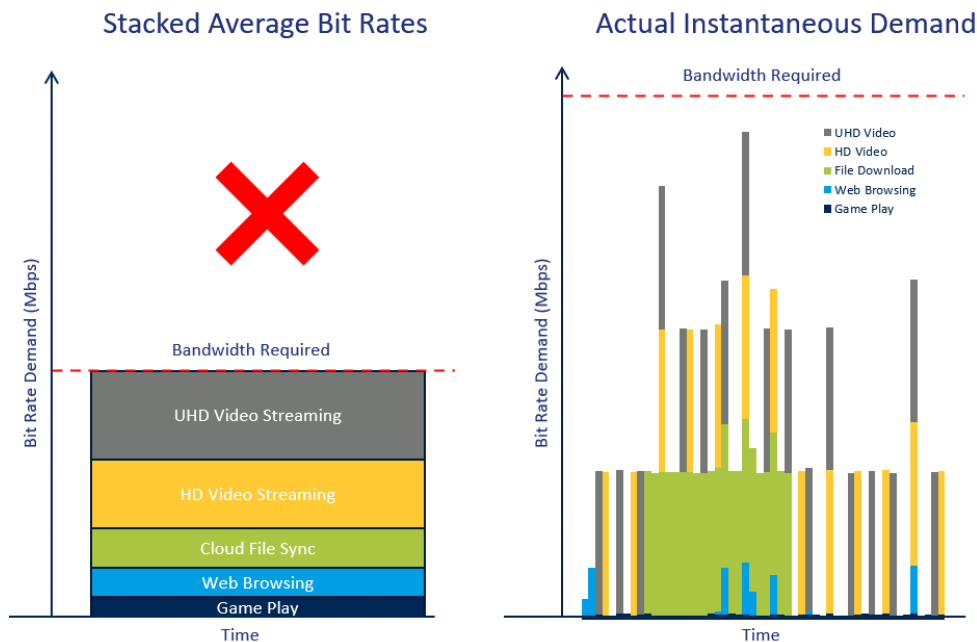


Figure 10: Example Comparison of Summed Averages vs Instantaneous Demand (Simplified)

The prevalence of concurrency

As was suggested by Figure 9 above, the amount of concurrency (and collision) experienced on an end-user’s connection impacts application performance where there is inadequate household bandwidth.

nbn has observed that concurrency is common, with approximately 60% - 95% of AVCs experiencing concurrency during the busy hour of 9pm. **nbn** has also observed that the amount of time AVCs experience concurrency ranges



from 35% to 50% of that busy hour (depending on speed tier). Figure 11 below shows the amount and duration of concurrency across 72,000 AVCs **nbn** sampled during the busy hour of 9pm.

Lower speed tier (12 – 50 Mbps) AVCs also experience some level of concurrency (i.e., two or more concurrent applications). Measured concurrency within the home for these speed tiers is high, with 60-73% of these connections ('A' in the figure below) using two or more applications for approximately 20-25 minutes during the busy hour ('B' in the figure below).

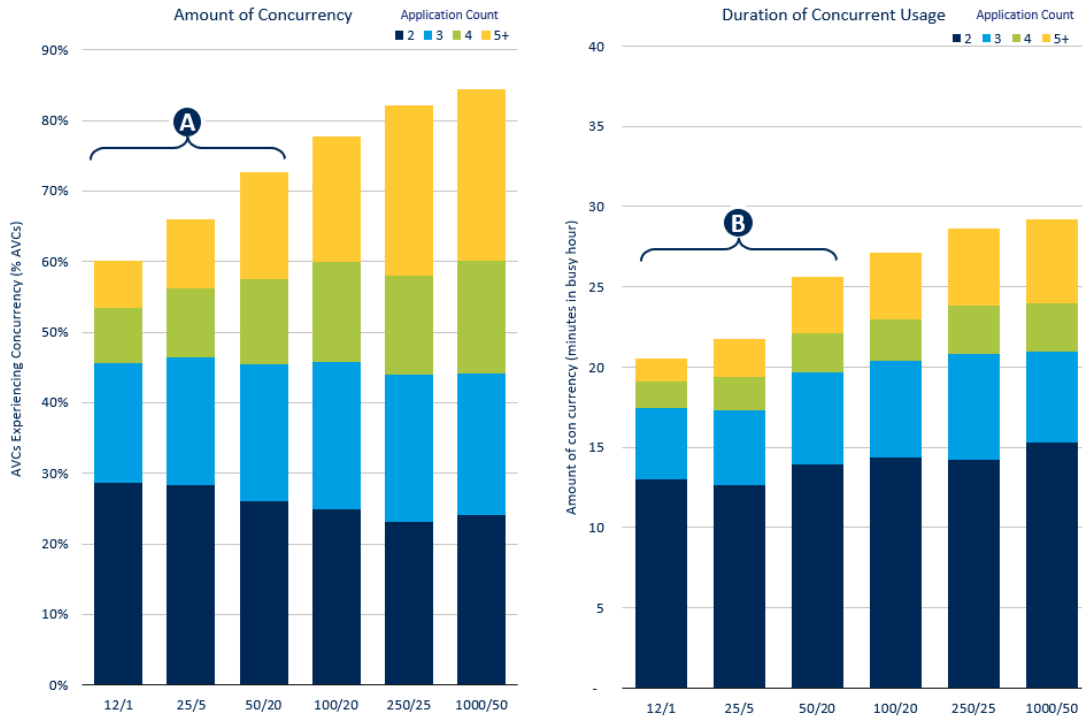


Figure 11: Amount and Duration of Concurrency Across Sampled AVCs During 9pm Busy Hour

nbn lab testing and measurements of actual AVC performance suggest that speeds greater than 50 Mbps yield a materially better experience for video streaming (the dominant application used during busy hours).

Notwithstanding this, **nbn** testing has also suggested that customers on a 50 Mbps plan may not receive the full 4K experience (even without concurrency). This is because there may not be enough bandwidth headroom available to stream at the maximum peak 4K bitrate. As explained above, only having regard to average bandwidth is likely to downplay the impact that not having such headroom would have on bursty application performance and thus user experience. **nbn** lab testing has also suggested that 4K streams without concurrency are able to stream at a streaming client’s maximum peak 4K bit rate on a 100 Mbps plan.⁵³ Concurrent usage and increased adoption of 4K is likely to drive demand for higher download speeds in light of these observations. **nbn** has found that 4K usage currently accounts for around 13% of hours of video content viewed (which represents 50% of all traffic on a popular streaming service analysed by **nbn**). This is expected to increase.

Increased adoption of current applications (e.g., 4K) and future applications (e.g., 8K, continued transition to digital downloads, increased dependence on home broadband for work, etc.) will continue to drive household

⁵³ **nbn** conducted testing using one streaming provider’s streaming client for one of its most popular streamed series. Other shows on that streaming client and across alternative streaming clients may have relatively higher or lower minimum and maximum 4K peak streaming bit rates.



demand for higher download speeds. Large digital downloads are already common, with some game downloads and updates reaching 200 GB. The lower the maximum available bandwidth, the longer applications such as game downloads will take to complete. Even with services operating at their maximum speed, these game downloads can take several hours to half a day to complete. **nbn** believes this is a poor customer experience that is likely to be compounded by concurrency.

nbn expects that concurrency will also rise as the number of devices per household continues to trend up, further driving demand for higher download speeds. **nbn** understands that there were approximately 20.5 internet-connected devices per Australian household in 2021, with a projected increase to 33.8 by 2025.⁵⁴

These projections are consistent with numerous studies predicting that connection bandwidth will continue to grow.⁵⁵ These studies suggest that speeds greater than 100 Mbps may be common, and some suggest large households may require gigabit speeds by 2030.

It is both allocatively and dynamically efficient, and ultimately in the LTIE, to ensure that the pricing construct allows and incentivises **nbn** to satisfy these changing bandwidth needs over time and ensures that end-users are able to access products that meet their requirements. In addition, there are also broader efficiency benefits on network capacity management if greater proportion of consumers took up higher speed tiers. Higher speed tier plans increase user's maximum throughput, reducing the length of time they are actively utilising the network, which in turn reduces demand on the network's peak bandwidth requirement as traffic collision events occur less frequently, enabling available network capacity to be utilised much more efficiently and reduces the need for capacity augmentations.

2.3 Discounting arrangements

Discounting is an important function that supports innovation and adaptability for **nbn** while delivering positive retail market outcomes.

The proposed discounting regime restricts **nbn** from using discounting to drive mass market pricing and thereby preserves regulatory power and provides price certainty for RSPs.

Under the SAU Variation, **nbn** provides terms and conditions for discounts at the time of introduction. These include withdrawal and change notice periods which RSPs agree to when taking up the offer.

Discounting has delivered significant benefits to RSPs and end-users, including incentivising take-up of services and delivering improved end-user outcomes such as increased affordability of higher-speed services and a reduction in congestion during peak usage periods.

Discounting is also a critical mechanism adopted by **nbn** to align RSP interests with those of **nbn**, for example through discounts incentivising RSPs to promote upgrades to higher speed tiers to end-users who would benefit from increased speeds, or to promote first-time connections to the **nbn**TM network. This alignment of interests promotes the LTIE by encouraging the efficient use of **nbn**'s infrastructure and by allowing **nbn** to recover

⁵⁴ See for example <https://www.statista.com/statistics/1202887/australia-average-number-of-internet-connected-devices-per-household/>.

⁵⁵ See for example: <https://www.fiberbroadband.org/blog/new-fba-research-reveals-fiber-can-close-the-rural-digital-divide/>; <https://copenhageneconomics.com/publication/analysis-of-user-needs-for-broadband-2025-2030/>; <https://www.cisco.com/c/en/us/solutions/collateral/executive-perspectives/annual-internet-report/white-paper-c11-741490.pdf>; <https://www.nggroup.com/articles/law-of-bandwidth/>; <https://docs.fcc.gov/public/attachments/DOC-366980A1.pdf>.



efficiently incurred costs more efficiently through a broader base of end-users, including in a manner consistent with **nbn**'s mandate under its SOE to uplift the digital capability of Australia.

While the introduction of bundled discounts had a positive impact on end-user experience, **nbn** acknowledges that the increasing gap between effective discounted charges and MRPs has given rise to a degree of uncertainty for RSPs. The ACCC's Summary of industry working groups report, December 2021, stated that, *"The working group agreed that the SAU would address this issue in the next regulatory period by NBNC Co moving away from a discounting construct for its access bundles and ... the SAU would include specific suitable incentives and protections so that access charge discounting practices could not again become a source of material cost uncertainty for access seekers."*⁵⁶

The discounting rules proposed in the SAU Variation are intended to significantly remove such uncertainty. In particular, the 5% discounting threshold proposed in the SAU Variation ensures that discounts are either:

- used in a highly targeted manner to achieve specific short-term objectives; or
- if used more broadly, result in an effective "ratcheting-down" of MRPs (which then prevents any material cost uncertainty as a result of the discounts).

In its Consultation Paper, the ACCC raises a new concern that the proposed discounting mechanism would expose retailers to the possibility of price shocks as there are, *"no constraints on withdrawal of discounts"*⁵⁷. **nbn** notes that it is not in its interests as a wholesaler to destabilise its pricing and that it has an existing obligation under the SAU to notify RSPs of the terms for reduction, removal or cessation of a discount, at the time of introduction of such discount.⁵⁸ The ACCC also states that the new discounting provisions would appear to *"allow more significant discounts to be applied where they are targeted at particular segments, are for limited duration, or are spread across acquittal periods"*.⁵⁹ **nbn** considers that discounts which are targeted and limited in nature are specifically the types of discounts where a greater level of flexibility is appropriate.

Targeted discounts play an important role in achieving specific commercial objectives and responding to increasing infrastructure competition. **nbn** currently uses targeted discounts to incentivise RSPs for the purpose of customer acquisition and retention activity, such as to connect unconnected premises or to reduce churn in 5G footprints. In addition to discounting to enable consumers to trial new and better-quality products, **nbn** has also historically relied on the ability to discount to support RSPs through crisis events, such as providing back-to-back support to RSPs offers to bushfire victims in 2019, providing a fund for free access for low-income families with school kids during the COVID-19 pandemic, and more generally capping CVC payments for the first 8 months of the COVID-19 pandemic.

It is important that **nbn** continues to have flexibility in respect of such discounts, which create significant benefits for RSPs and end-users and are ultimately in the LTIE. Introducing discount withdrawal rules in these circumstances (or requiring ratcheting-down of MRPs in the case of all discounts) would disincentivise **nbn** from evolving its effective prices in a dynamic manner and responding efficiently to continued evolutions in competition and technology.

⁵⁶ ACCC, Summary of industry working groups report, 22 December 2021, p. 11.

⁵⁷ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 27.

⁵⁸ SAU, clause 1C.5.5.

⁵⁹ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 27.



At the same time, the 5% threshold (linked to total residential-grade revenues in a financial year) means that **nbn**'s flexibility is curtailed in respect of "structural" discounts that affect a material share of its revenue. The 5% threshold applies on an aggregate basis to all discounts within a financial year, further ensuring that only highly targeted discounts are permitted without a ratcheting-down of MRPs. To use the example in the ACCC's Consultation Paper, if **nbn** were to apply a discount of 20% across all TC-4 services, this would only fit within the 5% threshold if such a discount was restricted to a 3-month period (thereby constituting a short-term, targeted discount). Any other discounts introduced in that financial year would exceed the 5% threshold and would have to comply with the MRP ratchet-down mechanism in clause 2B.2.9(c) of the Variation.

The 5% threshold has therefore been specifically designed to strike a balance between ensuring flexibility for targeted, short-term discounts (that have significant benefits for RSPs and end-users) and ensuring that any structural, broadly applicable discounts are appropriately reflected in the MRPs (thereby delivering price certainty for RSPs).

2.4 Recovery of accumulated losses

nbn is committed to addressing RSPs' concerns about the ICRA giving rise to price uncertainty in the future. What is required is a way forward that balances the concerns of industry with **nbn**'s commercial imperative to earn sufficient revenues to support the achievement and maintenance of an investment grade credit rating with a stable outlook and enable ongoing investment consistent with Government policy. This will mean that it is appropriate for **nbn** to retain the opportunity to earn some portion of the ICRA, specifically that **nbn** is allowed to earn revenues above its ABBRR in a manner which is predictable, constrained and transparent.

nbn is committed to working with the Government and the ACCC to determine the appropriate portion of the ICRA to retain. Consideration will also be given to the timing of any ICRA recovery.

2.5 Cost allocation

The cost allocation principles proposed by **nbn** align with existing approaches and principles from other industries and regulators, such as IPART for water, and the ACCC for Australia Post and Telstra's fixed line services. In particular, **nbn** applies the same methodological approach to fully allocated cost (FAC) for fixed and common costs as the multi-product BBMs of Australia Post and Telstra fixed line services.

The **nbn** cost allocators are aligned with the audited **nbn** accounting separation report process, which is tied directly to, and adds up to, **nbn**'s financial accounts.

2.5.1 General comments

The Consultation Paper raises several issues with **nbn**'s cost allocation methodology, including:

1. **nbn**'s "proposed cost allocation principles differ from those used in regulatory frameworks in other sectors in some important ways, including the allocation of fixed and common costs."
2. "regulatory frameworks routinely additionally impose ringfencing requirements."



2.5.1.1 nbn’s cost allocation principles align with those of other utilities and regulators

The cost allocation principles proposed and applied by **nbn** in its BBM are not unique to **nbn**; rather, they are aligned closely with those adopted by other regulators, such as IPART for NSW water providers⁶⁰, and the ACCC for Australia Post⁶¹ and Telstra’s fixed line services⁶². Table 1 below compares **nbn**’s proposed principles to the accepted principles for alternative regulated utilities.

Notably, each of **nbn**’s proposed cost allocation principles in clause 2C.10.2(a) of the SAU Variation is explicitly mirrored by each utility (with the exception of principles (iv) and (v) in clause 2C.10.2(a), which are not used for Australia Post, although it is likely these principles are implied given the fully allocated cost model used). Further, in relation to Australia Post, the approach adopted for the allocation of sunk costs to new services is made explicit as being on the basis of usage allocators, from the date at which competitive services are introduced⁶³. This approach or implicit principle is aligned to the approach taken by **nbn**.

Further, **nbn**’s proposed cost allocation principles and approach are extensions of **nbn**’s cost allocation approach applied for existing audited Accounting Separation Reporting to Government. This approach is documented in the **nbn** Regulatory Accounting & Allocation Manual (RAAM), with inputs directly traced to individual coded line items of revenues, costs and assets in **nbn**’s General Ledger, plus causal allocators based on metrics captured in **nbn**’s financial systems. Sections 7.1 and 7.2 of the RAAM⁶⁴ outline the principles and cost allocation methodology for allocation to each technology⁶⁵ respectively, which are expanded upon in Note 1 of **nbn**’s Accounting Separation Reports.⁶⁶

Table 1: Comparison of cost allocation principles by utility

Utility	nbn – SAU Variation ¹	Telstra FLSM ²	Sydney Water ³	Australia Post ⁴
Regulator	ACCC	ACCC	IPART	ACCC
Principles	Proposed	Accepted	Accepted	Accepted
Directly attributable cost allocated to services	<p>✓ Costs that are directly attributable to a Core Regulated Service will be allocated to that Core Regulated Service.</p> <p>Costs that are directly attributable to a Competitive Service will be allocated to that Competitive Service.</p>	<p>✓ Direct costs should be attributed to the service</p>	<p>✓ The causality principle in allocating costs</p>	<p>✓ A direct Account Item – that is, one solely associated with the particular service</p>
Shared costs allocated to reflect	✓	✓	✓	✓

⁶⁰ See for example IPART Cost allocation guide, Water Industry Competition Act 2006, March 2018 and Sydney Water Cost Allocation Manual for the allocation of costs to the Declared Services: Bondi, Malabar and North Head sewerage reticulation networks, July 2018

⁶¹ See for example IPART Cost allocation guide, Water Industry Competition Act 2006, March 2018 and Sydney Water Cost Allocation Manual for the allocation of costs to the Declared Services: Bondi, Malabar and North Head sewerage reticulation networks, July 2018

⁶² Telstra Corporation, Cost Allocation Framework for the ACCC Fixed Line Services Model, Framework and Model Guide, Version 1, July 2014, Public Version.

⁶³ See for example WIK Consult of AusPost report for the ACCC, Assessing the cost of new services, Section 3.3.3, p. 27

⁶⁴ NBN Co, Regulatory Accounting & Allocation Manual (RAAM), Final, 30 June 2021.

⁶⁵ **nbn**’s BBM allocates to service rather than technology, however this differing final allocation does not change the underlying cost allocation methodology.

⁶⁶ ACCC, *Information gathering for ring fencing and other regulatory purposes – Utility Regulators Forum discussion paper*, October 1999, p. 2.

Access: <https://www.accc.gov.au/system/files/October%201999%20-%20Information%20Gathering%20for%20Ring%20Fencing%20and%20Other%20Regulatory%20Purposes.pdf>.



Utility	nbn – SAU Variation ¹	Telstra FLSM ²	Sydney Water ³	Australia Post ⁴
causal relationships	Shared costs will be allocated to reflect causal relationships between supplying services and incurring costs, unless establishing a causal relationship would require undue cost or effort in which case an alternative suitable allocator will be used;	The allocation of the costs of operating the PSTN should reflect the relative usage of the network by various services. The cost allocation factors for shared costs should reflect causal relationships between supplying services and incurring costs. The determination of cost allocation factors should reflect the principles above except where reliable information is not available to support the application of the principles.	Shared (pooled) cost (extending the causality principle) where a relevant, reliable and verifiable causal relationship exists. Allocating costs where a causal relationship cannot be established it is then necessary to substitute a close approximation to an ideal causal allocation.	Where it is not possible to report an Account Item as a direct Account Item, it must be reported if possible as an attributable Account Item, assigned on a causation basis as far as possible by identifying relationships such as the following: (a) a directly traceable cause and effect relationship with the provision of the product or service; or (b) a verifiable relationship between the item and the output of the individual product or service; or (c) a relevant, reliable and verifiable factor such as relative use.
Total costs allocated	✓ All costs will be allocated	✓ For each Asset Class, the total allocation of costs for the Asset Class across all platforms and services is equal to 1	✓ Total costs to be allocated	
Costs allocated only once	✓ No cost should be allocated more than once to any service	✓ No cost should be allocated more than once to any service.	✓ A cost should only be allocated once	

1 See nbn Cost Allocation Manual, April 2022.
 2 See Telstra Corporation, Cost Allocation Framework for the ACCC Fixed Line Services Model, Framework and Model Guide, Version 1, July 2014, Public Version
 3 See Sydney Water, Cost Allocation Manual, For the allocation of costs to the Declared Services: Bondi, Malabar and North Head sewerage reticulation networks, May 2019.
 4 ACCC record Keeping Rules. Establishing a Regulatory Accounting Framework for Australia Post under section 50H of the Australian Postal Corporation Act 1989, 1 July 2016.

2.5.1.2 There is no need for additional formal ring-fencing

The SAU Variation proposes a cost allocation framework to promote greater confidence that **nbn** does not cross-subsidise particular business-grade services from its Core Regulated Services. Suggestions that further ‘ring-fencing’ requirements are needed to ‘separate **nbn**’s regulated and competitive businesses’ are misplaced, given all **nbn**’s services are regulated and provided on a wholesale-only basis.

The SAU Variation establishes a framework and a set of clear and consistent principles for categorising **nbn**’s services as Core Regulated Services and Competitive Services, and allocating costs between them, with ACCC oversight of those processes. **nbn**’s Core Regulated Services are subject to a revenue cap to ensure that **nbn**’s revenue in respect of those services are reflective of the efficient costs to supply those services. The Core Regulated Services are also subject to price controls. It is appropriate that **nbn**’s Competitive Services are not subject to such revenue and price regulation, given those services are **nbn**’s business-grade services and are subject to the most competition.



The ACCC Consultation Paper raises a concern that **nbn** has not proposed any ring-fencing guidelines or obligations on itself to “*maintain the regulatory asset base to support separation of the competitive and regulated parts of [nbn’s] business*”.⁶⁷

nbn is not proposing to separate ‘the competitive and regulated parts’ of its business, nor has a need for such separation been identified in the ACCC Consultation Paper or the ACCC Working Groups held in 2021.

Rather, during the ACCC Working Groups, a concern was raised regarding the potential for **nbn** to cross-subsidise its services provided in the most competitive markets with revenues from its ‘core’ regulated or residential services. In that context, the ACCC identified that “*appropriate cost allocation would ensure cross-subsidies towards competitive services do not occur*”.⁶⁸ **nbn**’s SAU Variation responds to this concern directly, by:

- providing for the allocation of costs between Core Regulated Services and Competitive Services (in a manner consistent with Cost Allocation Principles which, as stated above, are consistent with those applied in other regulated industries); and
- providing the ACCC with the power to determine such cost allocations, including through the Replacement Module Application / Replacement Module Determination process and through ex-post reviews of **nbn**’s capex.

The ACCC Consultation Paper notes that ring-fencing requirements are routinely applied in other regulatory frameworks to “*separate the competitive parts of the business from regulated services*”.⁶⁹ While that is true, the circumstances in which that occurs are not applicable to **nbn**. For example:

- While **nbn** has classified services into ‘Core Regulated Services’ and ‘Competitive Services’ for the purposes of demonstrating there is no cross-subsidy between those services, all **nbn** services are regulated services. All **nbn**’s eligible telecommunications services are ‘declared services’, for which **nbn** is subject to standard access obligations to supply to third parties on a non-discriminatory basis.
- Ring-fencing separation requirements are typically imposed in other industries to address two main issues:
 1. to prevent cross-subsidisation between regulated and competitive or non-regulated services; and
 2. to prevent a vertically integrated firm discriminating in favour of its upstream or downstream businesses operating in competitive markets in an anti-competitive manner.⁷⁰

nbn’s SAU Variation proposal is specifically designed to address the first of those concerns. The second of those concerns is not applicable to **nbn** – since **nbn** is a wholesale-only provider of superfast broadband services (i.e., it does not have any “downstream” retail business).

⁶⁷ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 49.

⁶⁸ ACCC, Summary of industry working group outcomes, December 2021, p. 8.

⁶⁹ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 32.

⁷⁰ For example, see the descriptions of ringfencing for monopoly electricity distribution and transmission networks in the AER’s current and previous ringfencing guidelines, explanatory materials and fact sheets, available online here: <https://www.aer.gov.au/networks-pipelines/ring-fencing>.



- Further, concerns around a regulated business discriminating in favour of its competitive services typically arise where competitors are dependent upon the regulated business or infrastructure in some manner to compete. Such concerns do not arise in **nbn**'s context, given that the relevant competition is occurring at the infrastructure level – i.e., those competing with **nbn**'s Competitive Services (Enterprise Ethernet, Business Satellite Services and Satellite Mobility) are necessarily competing using their *own* infrastructure, given the nature of those services and **nbn**'s wholesale-only status.

nbn therefore considers that suggestions of 'ring-fencing requirements to separate **nbn**'s regulated and competitive businesses' are not warranted.

2.6 Expenditure criteria

The SAU Variation contains a number of commitments and incentives for **nbn** to incur only prudent and efficient costs. These arrangements supplement the existing incentives faced by **nbn** to incur expenditure only where it is prudent and efficient.

The definitions of prudent and efficient expenditure in the SAU Variation are consistent with regulatory precedent and are not circular in nature. It appears the concerns raised in the ACCC's Consultation Paper about the circularity of these definitions arise from a mistaken paraphrasing of the definitions in the Consultation Paper.

The Expenditure Objectives and Factors in the SAU Variation are designed to provide transparency and predictability about how **nbn**'s allowed expenditures will be assessed, while not limiting what factors the ACCC may take into account when assessing the efficiency and prudence of **nbn**'s expenditure. The Expenditure Objectives and Factors are consistent with established regulatory practice, in particular the National Electricity Rules, as set out in further detail in this section.

2.6.1 Introductory comments

As set out in **nbn**'s supporting submission, there are a number of commitments in the SAU Variation and existing SAU that provide incentives for **nbn** to incur only prudent and efficient costs. These commitments include the revenue cap arrangement itself, and ACCC scrutiny of **nbn**'s costs on an ex-ante basis for both operating expenditure and capital expenditure, and on an ex-post basis for capital expenditure. As proposed in the SAU Variation, the ability for the ACCC to undertake a full ex-post review of capital expenditure is a significant expansion of the ACCC's conferred powers under the SAU, noting that the default position in the SAU as it currently applies limits the scope of ex-post review in Module 2 to only the amount in excess of the capital expenditure allowance for the past period.

It is important to note that these regulatory incentives supplement **nbn**'s existing intrinsic incentives to plan and incur expenditure only where it is prudent and efficient. These intrinsic incentives arise from several sources including: oversight from Shareholder Ministers and Parliament; capital constraints; competition from rival networks (as described in section 2.1.4.4); and uncertainty over whether future revenues will be sufficient to recover costs over the long-term given evolving technology, applications and demand.



2.6.2 Definitions of prudent and efficient

In its Consultation Paper, the ACCC suggests that **nbn**'s definition of prudent and efficient expenditures appear to have been defined in a partly circular manner.⁷¹ We believe that this view has arisen from an incorrect paraphrasing of the relevant clauses of the SAU Variation in the Consultation Paper.

Clause 2C.2.5(a) of the SAU Variation provides that operating expenditure and capital expenditure forecasts must, amongst other things, reasonably reflect the expenditure that a prudent and efficient operator in **nbn**'s position, acting in accordance with good industry practice, would incur in achieving the set of Expenditure Objectives as set out in that clause. Following on from this, clause 2C.2.5(b) provides that, for the purposes of clause 2C.2.5, expenditure will meet the prudent operator and efficient operator requirements, respectively, if the expenditure:

- reflects a reasonable choice amongst available alternatives; and
- is likely to lead to the lowest Total Cost of Ownership or highest value outcome over time.

As such, there is no circularity (partly or wholly) in how prudent and efficient expenditure have been defined. Rather, the definitions are clear and, as discussed further below, well aligned with how the concepts of prudence and efficiency are commonly used in other regulated contexts.

nbn notes that the Consultation Paper⁷² incorrectly paraphrases clause 2C.2.5(b) such that it appears partly circular when in fact it is not. The ACCC states that clause 2C.2.5(b) defines “the expenditure of a prudent and efficient operator” and goes on to present definitions for the terms “prudent” and “efficient” that are apparently drawn from the same clause and include reference to a “prudent operator” and an “efficient operator”, respectively. As set out above, clause 2C.2.5(b) does not define the terms “prudent” or “efficient” as such, but rather sets out the basis on which expenditure will be judged to reflect the expenditure of a prudent operator “in NBN Co’s position, acting in accordance with good industry practice”, and separately in respect of an efficient operator. With this correction, it becomes clear that the relevant definitions are as described above (and are not circular in nature).

2.6.3 Expenditure Objectives and Factors

The SAU Variation specifies Expenditure Objectives and Expenditure Factors to guide and inform the evaluation of expenditure proposals. Specifically, the SAU Variation provides that:

- **nbn**'s forecast expenditure for a Regulatory Cycle must reasonably reflect the expenditure that a prudent and efficient operator in **nbn**'s position, acting in accordance with good industry practice, would occur in achieving certain ‘Expenditure Objectives’; and
- in considering whether forecast expenditure meets the Expenditure Objectives, regard must be had to certain ‘Expenditure Factors’.⁷³

This approach is consistent with established regulatory practice. In particular, **nbn**'s proposal broadly reflects the provisions of the National Electricity Rules (NER) administered by the Australian Energy Regulator (AER), in relation to electricity distribution and transmission networks in Australia. In particular, the NER provides that total forecast expenditure for such networks must reasonably reflect the efficient costs which would be incurred by a prudent operator to achieve particular ‘Operating / Capital Expenditure Objectives’, having regard to particular ‘Operating / Capital Expenditure Factors’.⁷⁴

⁷¹ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 36.

⁷² ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 33.

⁷³ Clauses 2C.2.5(a)(iii) and 2C.2.5(c) of the SAU Variation.

⁷⁴ For distribution networks, see NER 6.5.5(a), (c) and (e) (in relation to opex) and 6.5.7(a), (c) and (e) (in relation to capex). For transmission networks, see NER 6A.6.6(a), (c) and (e) (in relation to opex) and 6A.6.7(a), (c) and (e) (in relation to capex).



nbn's SAU Variation also provides that the Expenditure Factors include any other matters relevant matters.⁷⁵ Similarly, the NER provides that the relevant Expenditure Factors include any other factor the AER considers relevant and which the AER notifies to the relevant network service provider.⁷⁶

A comparison of these frameworks and the relevant expenditure objectives / factors is set out in Table 2 below, together with a brief comparison to other regulatory frameworks (Table 3).

Table 2: Comparison of Expenditure Objectives in the SAU variation and the National Electricity Rules

nbn Expenditure Objective	Comparison to National Electricity Rules (NER)	Comment
The SAU Variation provides that nbn's forecast expenditure for a Regulatory Cycle must reasonably reflect the expenditure that a prudent and efficient operator in nbn's position, acting in accordance with good industry practice, would occur in achieving the following objectives:	The NER provides that forecast expenditure for electricity distribution and transmission networks for a regulatory period must reasonably reflect the efficient costs which would be incurred by a prudent operator to achieve the following objectives:	
(1) Meeting or managing the expected demand for products and services during the Regulatory Cycle.	(1) Meeting or managing the expected demand for standard control services / prescribed transmission services over the regulatory period.	The Expenditure Objective proposed in the SAU variation reflects the Expenditure Objective used in the NER.
(2) Complying with, and otherwise responding as reasonably necessary to give effect to or prepare for, any relevant Regulatory Requirements or Regulatory Change Events applicable to NBN Co providing products and services.	(2) Complying with all applicable regulatory obligations or requirements associated with the provision of standard control services / prescribed transmission services.	The Expenditure Objective proposed in the SAU variation reflects the Expenditure Objective used in the NER.
(3) Maintaining the quality, reliability, safety, security and integrity of supply of any products and services , taking into account current and reasonably anticipated future market conditions (including the extent to which NBN Co must adjust quality to meet competition).	(3) Maintaining: <ul style="list-style-type: none"> the quality, reliability and security of standard control services / prescribed transmission services; the reliability and security of the distribution / transmission system through the supply of standard control services / prescribed transmission services; and the safety of the distribution / transmission system through the supply of standard control services / prescribed transmission services; (to the extent that there are not applicable regulatory obligations or requirements in relation to those objectives).	The Expenditure Objective proposed in the SAU variation reflects the Expenditure Objective used in the NER.
(4) Implementing a project or program which is the subject of a Government Policy Project Notice.	n/a	These are bespoke objectives proposed by nbn, accounting for its status as a GBE and instrument of Government policy.
(5) Maintaining a national network coverage that provides ubiquitous access to all Australian residential and business premises.	n/a	

⁷⁵ Clause 2C.2.5(c)(xiii) of the SAU Variation.

⁷⁶ For distribution networks, see NER 6.5.6(e)(12) and 6.5.7(e)(12). For transmission networks, see NER 6A.6.6(e)(14) and 6A.6.7(e)(14).



Table 3: Comparison of the Expenditure Factors in the SAU Variation and other Regulatory contexts

Topic	nbn Expenditure Factor	AER (Electricity)	IPART (Water)	NZCC (Telecoms)
Evidence of prudence and efficiency	<p>nbn’s proposed Expenditure Factors include:</p> <ul style="list-style-type: none"> any justification of the efficiency of opex and capex (factors (x)(B) and (xi)(B)); compliance with lowest total cost of ownership (factor (xi)(D)); and productivity improvements and efficiency gains (factors (x)(C) and (xi)(E)). 	<p>The NER does not list similar considerations as ‘Expenditure Factors’, but nonetheless provides that forecasts must reasonably reflect the efficient costs that would be incurred by a prudent operator in achieving the Expenditure Objectives (e.g., NER, 6.5.6(c) and 6.5.7(c)).</p>	<p>IPART aims to set prices that reflect efficient costs (IPART, Guidelines for Water Agency Pricing Submissions, p.16 (hereafter referred to as the ‘IPART Guidelines’)).</p>	<p>The NZCC must ensure that proposed capex reflects the efficient costs that a prudent network would incur to deliver the appropriate quality during the regulatory period and over the longer term (NZCC, Fibre Input Methodologies Determination 2020, 3.8.5(2) (hereafter referred to as the ‘IM’)).</p>
Past expenditure and other relevant benchmarks	<p>nbn’s proposed Expenditure Factors include:</p> <ul style="list-style-type: none"> relevance and comparability of any applicable benchmarks (factor ix); opex and capex in the previous regulatory cycle (factors (x)(A) and (xi)(A)); and Historical trends in expenditure (factor i). 	<p>Expenditure factors in the NER include:</p> <ul style="list-style-type: none"> recent benchmarking reports (e.g., NER, 6.5.6(e)(4) and 6.5.7(e)(4)); and the actual and expected level of opex and capex in the previous regulatory cycle (e.g., NER, 6.5.6(e)(5) and 6.5.7(e)(5)). 	<p>IPART typically considers past historical expenditure to inform its assessment of the reasonableness of forecasts. In its recent Draft Water Regulatory Framework report, IPART has indicated that it intends to make greater use of benchmarking in future decisions (IPART, Draft Water Regulatory Framework Report, p.45-46).</p>	<p>NZCC must have regard to historical capex and historic rates of investment (IM, 3.8.6(1)(c)).</p>
Promotion of competition in other markets	<p>nbn’s proposed Expenditure Factors include:</p> <ul style="list-style-type: none"> the promotion of competition in telecommunications markets (factor v – reflecting one of the constituent objectives of the LTIE in Part XIC of the CCA). 	<p>While the NER does not list a similar consideration as an ‘Expenditure Factor’, the relevance of promoting competition is captured indirectly in the AER’s overarching objective of promoting the long-term interests of consumers (the National Electricity Objective).</p>	<p>Although not explicitly required when considering costs of water utilities expenditures, IPART must have regard to the Water Industry Competition Act (WICA), 2006. In this way IPART has sought to understand the (avoided) costs of water utilities when setting wholesale access prices.</p>	<p>The NZCC must have regard to competition effects, including specific information for sub-categories of capex that have potential impacts on competition in fixed line and other telecommunications markets (IM, 3.8.6(1)(g)).</p>
Financing expenditure	<p>nbn’s proposed Expenditure Factors include:</p> <p>nbn’s ability to reasonably finance expenditure (factor viii).</p>	<p>The AER has regard to financeability tests as a sense check on the rate of return (AER, Draft RORI Explanatory Statement, June 2022).</p>	<p>IPART employs an explicit financeability test which assesses whether the business will be able to raise finance consistent with an investment-grade rated firm (BBB or Baa2) during the regulatory period.</p>	<p>The NZCC must have regard to the procurement, resourcing, and deliverability of the proposed capex (IM, 3.8.6(1)(k))</p>



Topic	nbn Expenditure Factor	AER (Electricity)	IPART (Water)	NZCC (Telecoms)
Account for uncertainty/risks	<p>nbn’s proposed Expenditure Factors include:</p> <ul style="list-style-type: none"> • uncertainty in the need for or timing of expenditure (factor iii); and • efficient allowances for reasonable risks and sensitivities (factor xii). 	<ul style="list-style-type: none"> • The AER approves a total expenditure allowance for a regulatory period, but it remains for an NSP to prioritise expenditure within the budget. • The AER adopts a range of mechanisms to address investment uncertainty, including the cost pass through mechanism to address major changes in costs due to unforeseen and uncontrollable factors, and contingent project mechanism which applies to projects for which timing and cost is uncertain due to external factors. 	<ul style="list-style-type: none"> • IPART will provide water businesses with mechanisms to manage changing revenue needs over the short and long-term, where these promote better customer outcomes. It outlines principles which it will consider when assessing proposals, including to account for uncertain and unforeseen costs within a pricing period with a cost pass-through, ex post-true up, letter of comfort, or a partial or a full re-opening of a pricing determination (IPART, Draft Water Regulatory Framework Report, p.51) 	<ul style="list-style-type: none"> • NZCC must have regard to the extent of the uncertainty related to the need for the proposed capex, economic case justifying the proposed capex; and timing of the proposed capex (IM, 3.8.6(1)(o)) • NZCC must have regard to quantitative or economic analysis related to the proposed capex, including sensitivity analysis and impact analysis undertaken (IM, 3.8.6(d))
Robustness of models, analysis and governance framework.	<p>nbn’s proposed Expenditure Factors include:</p> <ul style="list-style-type: none"> • the robustness of approach and models used to develop forecasts (factor ii); and <p>the robustness of procurement and governance framework (factor xi)(C)).</p>	<ul style="list-style-type: none"> • An NSP’s proposal must include the calculation of regulated revenues or prices, and a demonstration that the calculation, and the amounts, values and inputs involved in the calculation, are consistent with the NEL and the NER (NER, S6.1.3(6)). • One of the techniques adopted by the AER to revenue opex and capex forecasts is a governance and policy review (AER, Expenditure Forecast Assessment Guidelines). 	<ul style="list-style-type: none"> • IPART will consider expenditure planning and decision-making processes (IPART Guideline, p.18). 	<ul style="list-style-type: none"> • The NZCC must have regard to the governance relating to proposed capex, including evidence that appropriate policies and processes have been applied (IM, 3.8.6(1)(b)) • The NZCC must have regard to the approach to forecasting capital expenditure, including models used to develop the capital expenditure forecasts (IM, 3.8.6(1)(e)) • The NZCC must have regard to the accuracy and reliability of data (IM, 3.8.6(1)(s)) • The NZCC must have regard to the reasonableness of the key assumptions, methodologies, planning and technical standards relied upon (IM, 3.8.6(1)(t)).



Topic	nbn Expenditure Factor	AER (Electricity)	IPART (Water)	NZCC (Telecoms)
Changes in input prices and demand factors (incl. arms-length contracts)	<p>nbn’s proposed Expenditure Factors include:</p> <ul style="list-style-type: none"> • efficiency trade-offs between capex and opex to ensure lowest total cost of ownership (factor iv – picking up an existing SAU concept); • the extent to which opex and capex is referable to a ‘Conforming Contract’ which includes considerations of whether the contract was the result of a competitive tender and entered into at arms’ length, etc (factor vi – picking up an existing SAU concept); • the extent to which capex was incurred with respect to good or service procured in open and competitive market (factor xi)(F)); and • reasonable expectations of access seekers and end user demand (factor vii). 	<p>Expenditure factors in the NER include:</p> <ul style="list-style-type: none"> • the substitution possibilities between opex and capex (e.g., NER, 6.5.6(e)(7) and 6.5.7(e)(7)); • the relative prices of operating and capital inputs (e.g., NER, 6.5.6(e)(6) and 6.5.7(e)(6)); • the extent to which opex/capex forecasts are referable to arrangements that do not reflect arm’s length terms (e.g., NER, 6.5.6(e)(9) and 6.5.7(e)(9)); and • the extent to which the opex/capex forecasts address concerns of end users (e.g., NER 6.5.6(e)(5A) and 6.5.7(e)(5A)). <p>The AER must also ensure that capex/opex forecasts reflect a realistic expectation of demand forecast and cost inputs required to achieve the opex/capex objectives in the NER (NER, 6.5.6(c)(3) and 6.5.7(c)(3)).</p>	<ul style="list-style-type: none"> • IPART will consider trade-offs between opex and capex (IPART Guidelines, p.18). • IPART will consider customer needs and customer preferences for service levels, including willingness to pay (IPART Guidelines, p.18). 	<ul style="list-style-type: none"> • NZCC must consider the dependency and trade-off between the proposed capex and related operating expenditure to ensure least whole-of-life cost for managing assets and cost-efficient solutions (IM, 3.8.6(1)(r)).

The benefit of adopting this approach in the SAU Variation is that it provides transparency and predictability about how **nbn’s** allowed expenditures are assessed in Module 2. Importantly, the analytical techniques the ACCC may use to assess **nbn’s** forecasts are not limited by the proposed approach, and there is sufficient discretion for the ACCC regarding how it decides to apply the specified factors – all of which are valid considerations consistent with the LTIE. The application of the objectives and factors will, however, result in more explanation and understanding on how prudence and efficiency have been determined, thereby promoting greater understanding and confidence in the regulatory framework.

As the ACCC is aware, there are multiple dimensions to the meaning of prudence and efficiency in relation to regulated infrastructure. The SAU Variation will require that forecasts reasonably reflect expenditure that a prudent and efficient operator in **nbn’s** position, acting in accordance with good regulatory practice, would incur. This drafting recognises that, instead of an objective test that can be applied on a formulaic basis, the assessment of expenditure will involve the exercise of some judgment given the challenges in being able to directly observe prudence and efficiency, and the inter-dependencies associated with expenditure forecasts.



The ACCC has sought views on whether the inclusion of the Expenditure Objectives and Expenditure Factors could raise the prospect of complex and subjective trade-offs being made by **nbn** in its expenditure decisions. **nbn** considers that the need to balance multiple factors and trade-offs will always exist when developing and reviewing expenditure plans; this is further exacerbated in an industry as complex and dynamic as telecommunications where technologies, demand on the network and competitive dynamics between network operators are constantly evolving. Rather than promoting ‘subjective trade-offs’, the broad Expenditure Objectives and Factors allow appropriate flexibility for **nbn** to adapt expenditure decisions to the market environment, and for the ACCC to assess these decisions without placing arbitrary constraints on **nbn** or the ACCC.

It is appropriate that the Expenditure Objectives and Expenditure Factors are not weighted as this provides reasonable discretion for **nbn** to develop, and the ACCC to assess, expenditure forecasts consistent with the LTIE. The objectives and factors will instead aid transparency and understanding about how the relevant matters have been considered and balanced by both **nbn** and the ACCC in the expenditure plans.

nbn notes that the LTIE itself is defined at length in section 152AB of the Competition and Consumer Act 2010 (CCA) and is not accompanied by any pre-specified weighting in terms of how to apply its many component factors. This lack of weightings has not been a barrier to the application of the LTIE over many years; indeed, the flexibility provided by this approach has allowed the LTIE to be interpreted with relative emphasis appropriate to each context in which it is applied.

nbn also acknowledges the ACCC’s comment (at page 50 of its Consultation Paper) that a function or power conferred on the ACCC could be reduced in its effectiveness for a number of reasons, including that “*prudence or efficiency may be defined in an overly permissive way*”. **nbn** presumes that the ACCC was making a hypothetical point only, but in any event **nbn** highlights that the proposed approach in the SAU Variation permits the ACCC to apply reasonable discretion in assessing the prudence and efficiency of expenditure, and in no way permits expenditure to be accepted as prudent or efficient without appropriate ACCC oversight.

The proposed Expenditure Objectives and Expenditure Factors have been drafted to be complementary and work in tandem with each other and with the definitions of prudence and efficiency. As noted above, **nbn** disagrees that there is circularity in the drafting. The proposed approach has largely adopted the language in the National Electricity Rules, with appropriate amendments to reflect the differences between the operating environment and expenditure decisions faced by electricity networks and **nbn**. **nbn** considers that assessment against the objectives and factors will appropriately identify the expenditure that reasonably reflects prudence and efficiency and is in the LTIE.

The proposed approach still permits appropriate evaluation and informed discretion on the efficiency and prudence of expenditure and has proven to be effective in other regulated sectors. Overall, this approach will promote credibility and confidence in the regulatory framework, which is important for both **nbn** and customers, particularly in the near term as the ACCC makes its initial decisions on **nbn**’s expenditure and thereby establishes a regulatory history and series of precedents.



2.7 Weighted average cost of capital (WACC)

- The WACC methodology proposed by **nbn** tends to produce highly stable WACC allowances (and therefore prices) over time—even in the face of significant and rapid changes in financial market inputs such as the risk-free rate.
- By contrast, the Module 1 WACC methodology and the WACC methodology employed by the ACCC typically produce highly variable WACC allowances over time that would have risen substantially in line with the increase in risk-free rates since the submission of **nbn**'s Variation.
- Thus, the methodology proposed by **nbn** delivers longer-term regulatory certainty, which promotes the long-term interests of end-users.
- As at 5 July 2022, the risk premium implied by **nbn**'s WACC methodology was just over 4.0%, which is materially lower than the 5.5% risk premium calculated by the ACCC in their Consultation Paper when they assessed **nbn**'s WACC methodology.

2.7.1 The reasonableness of **nbn**'s proposed WACC methodology

The Consultation Paper seeks to make comparison between the existing SAU Module 1 WACC methodology and the WACC methodology proposed by **nbn** in the SAU Variation. Specifically, the Consultation Paper notes that:⁷⁷

- The Module 1 WACC methodology involves setting a nominal rate of return allowance by adding a fixed risk margin of 3.5% to the prevailing risk-free rate;
- The WACC methodology proposed by **nbn** (for SAU Module 2 and the first regulatory cycle) is substantially different from the WACC methodology adopted by the ACCC in other recent regulatory decisions; and
- When expressed in terms of risk margins alone, **nbn**'s proposed WACC methodology produces a nominal vanilla WACC for 2023-24 that “implies a risk margin of 5.5% (7.2% minus the risk-free rate of 1.7%) versus the NBN Co SAU Module 1 risk margin of 3.5%.”⁷⁸

nbn is concerned that this presentation offers a potentially misleading comparison between the Module 1 WACC methodology and **nbn**'s proposed WACC methodology. In particular, **nbn** is concerned that the Consultation Paper may leave stakeholders with the incorrect impression that **nbn**'s proposed WACC methodology involves setting the WACC allowance by simply or effectively adding a higher risk margin (i.e., 5.5% rather than 3.5%) to the prevailing risk-free rate than would have been added under the Module 1 approach.

The Consultation Paper acknowledges that the risk-free rate has increased significantly since the lodgement of **nbn**'s SAU Variation.⁷⁹ However, it is also important to acknowledge that:

- the methodology proposed by **nbn** tends to produce highly stable nominal WACC estimates over time, even during periods of significant and rapid changes in the risk-free rate; whereas

⁷⁷ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, pp. 37-38.

⁷⁸ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 38.

⁷⁹ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 37.



- the Module 1 WACC methodology produces WACC allowances that are highly volatile over time that move in lockstep with the risk-free rate. This means that the WACC estimates produced by the Module 1 WACC methodology would have increased materially as the risk-free rate has increased since the lodgement of **nbn**'s SAU Variation;
- the WACC methodology used by the ACCC in recent decisions also produces highly volatile WACC allowances. This is because:
 - the standard ACCC method for estimating the required return on equity involves adding a fixed equity risk premium to the prevailing risk-free rate. This means that the return on equity estimates produced by the ACCC method would move one-for-one with the risk-free rate; and
 - the 'on-the-day' approach used by the ACCC produces return on debt estimates that are considerably more volatile than the trailing average approach proposed by **nbn** (and used by almost all other regulators in Australia). For these reasons, the standard ACCC method would have produced WACC estimates that also would have increased materially since the submission of **nbn**'s SAU Variation proposal, as interest rates increased; and
 - the difference between the WACC estimates produced by **nbn**'s proposed methodology and by the Module 1 WACC methodology has narrowed materially since the submission of **nbn**'s SAU Variation.

The final point above is illustrated in Figure 12 below, which plots the WACC estimates produced by **nbn**'s proposed WACC methodology (light blue curve) and the Module 1 WACC methodology, since 4 January 2022.⁸⁰ The chart shows that between 4 January 2022 and 5 July 2022:

- the prevailing risk-free rate had increased by 192 basis points from 1.70% to 3.62%;
- the WACC estimate produced by the Module 1 WACC methodology had also increased by 192 basis points from 5.20% to 7.12%;
- in comparison, the WACC estimate produced by **nbn**'s proposed Module 2 methodology had increased by just 67 basis points from 7.01% to 7.68%; which
- implies that the difference between the WACC estimates produced by the two approaches had reduced by more than two-thirds, from 180 basis points to just 56 basis points.

In addition, Figure 12 below plots the WACC estimates produced by methodology contained in the ACCC's 2020 MTAS decision since 4 January 2022.^{81,82} The chart shows that between 4 January 2022 and 5 July 2022 the WACC estimate produced by the MTAS WACC methodology had increased by 248 basis points from 4.93% to 7.41%.

In other words, by 5 July 2022, the implied "risk margin" associated with the WACC estimate derived using **nbn**'s proposed methodology was just 4.06%, which is materially lower than the risk margin of 5.5% identified in the Consultation Paper.

⁸⁰ The WACC estimates presented in **nbn**'s SAU Variation as lodged on 29 March 2022 were derived using data to the end of December 2021.

⁸¹ ACCC, Public inquiry on the access determination for the Domestic Mobile Terminating Access Service – Final Report, October 2020.

⁸² To be consistent with the proposed methodology, we apply a beta of 0.70 and gearing of 40% and update the MRP to 6.5% as per the AER's draft RORI for 10-year tenor rates. RBA data is used for the risk-free rate.

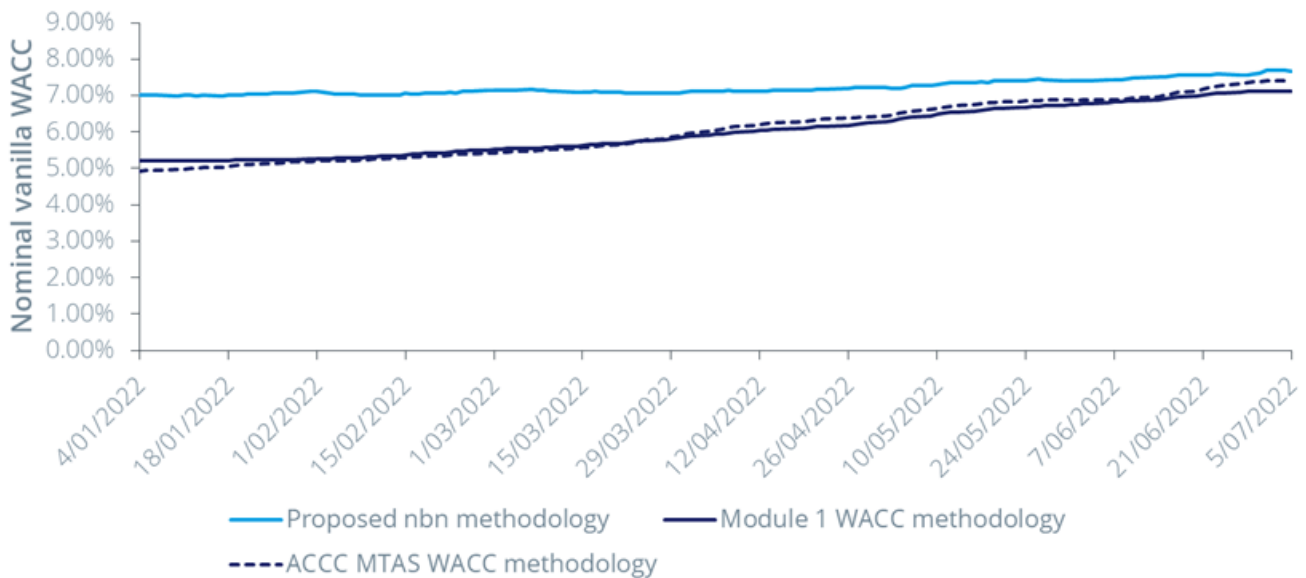


Figure 12: Recent WACC estimates produced by nbn’s proposed WACC methodology, the Module 1 WACC methodology and the ACCC’s MTAS methodology

Source: nbn

This highlights a consequence and key strength of **nbn**’s proposed WACC methodology.

The approach proposed by **nbn** tends to produce far more stable WACC estimates than both the Module 1 WACC methodology and the standard ACCC WACC methodology, even in the face of significant and rapid changes in financial market inputs. This, in turn, will tend to produce more stable prices for consumers. We acknowledge that this will, at times, lead to differences between our proposed approach and alternative methodologies such as that used in Module 1 of the SAU, but as the SAU is intended to provide a long-term regulatory framework (reflecting the long-term nature of the investments made in the network), **nbn** considers that a WACC methodology which provides more stable outcomes over the remaining decades is reasonable and promotes the LTIE.

This view is supported by CEG in their “WACC for **nbn**” report⁸³, where they state:

I consider that stability in the WACC estimate derived from nbn’s methodology will promote the long-term interests of end-users. This is for three reasons:

- *The true cost of capital is likely to be stable over-time. This is consistent with the evidence (discussed in sections 5.3 and 5.4) that the return on equity is stable over time. It is also consistent with the fact that prudent debt funding strategies require a staggered issuance/maturity profile – which give rise to a relatively stable trailing average cost of debt. Therefore, a necessary condition for a methodology to be accurate over time is that the estimated WACC is relatively stable overtime.*
- *End-users, like most consumers, typically prefer stable prices to volatile prices. This is, in part, because stable prices assist in their own planning and budgeting. Other things equal, end-users will be better off with a methodology that prioritises stability in the rate of return;*

⁸³ CEG Report, “WACC for **nbn**”, June 2022, para. 188.



- *nbn will be better able to plan and budget its own investment program if its return on investment is stable. Other things equal, nbn will have better incentives to efficiently plan if the rate of return on its assets is stable. This will promote the long-term interests of end-users because it promotes efficient operation of nbn to end-users' benefit.*

The **nbn** methodology produces very stable WACC estimates over time because:

- The approach pairs together, in an internally consistent way, current estimates of the risk-free rate with current estimates of the market risk premium (MRP), and a long-term estimate of the risk-free rate with a long-term estimate of the MRP;
- The current MRP estimates produced by the dividend growth models (DGMs) proposed by **nbn** tend to fall as the risk-free rate rises (and vice versa). This inverse relationship between the estimated current MRP and the risk-free rate (which is an outworking of the DGMs, rather than any implicit assumption baked into the models) means that any increase in the risk-free rate is offset at least partially by a reduction in the MRP (and vice versa); and
- The trailing average approach used to estimate the return on debt allowance tends to smooth out short-run changes in the market cost of debt by averaging rates over a 10-year historical period.

By contrast to the **nbn** approach, both the Module 1 WACC methodology and the standard ACCC WACC methodology do not result in stable prices over time, because the WACC allowance under both approaches will tend to increase sharply as the risk-free rate rises, and fall as the risk-free rate falls. As Frontier Economics explains,⁸⁴ the approach of adding a fixed risk premium to the prevailing risk-free rate results in outcomes that are not economically sensible. This is because the risk-free rate tends to fall during financial crises. In such circumstances, the approach of adding a fixed premium to the risk-free rate would imply that the cost of capital falls, rather than increases during financial crises—which is clearly implausible and an unreasonable basis for setting regulatory allowances.

This point is illustrated seen in Figure **13** below, which plots the WACC estimates produced by **nbn**'s proposed WACC methodology (light blue curve) compared to the Module 1 WACC methodology and ACCC MTAS methodology, since November 2000.⁸⁵ While the methods produce similar results in the more normal market conditions between 2000 and 2010, after the GFC the Module 1 and ACCC methodologies both estimate that the required returns on debt and equity fell as the risk-free rate dropped. In reality, it is much more likely that (i) the required return on equity remained relatively stable and (ii) the total required return on debt reduced gradually as debt tranches were prudently refinanced.

⁸⁴ Frontier Economics, Return on capital, inflation and financeability, 11 March 2022, para. 55.

⁸⁵ As RBA debt margin data is unavailable prior to 2005, we maintain the January 2005 debt margin as per the RBA for previous months. This is applied to both the proposed nbn methodology and the MTAS methodology.

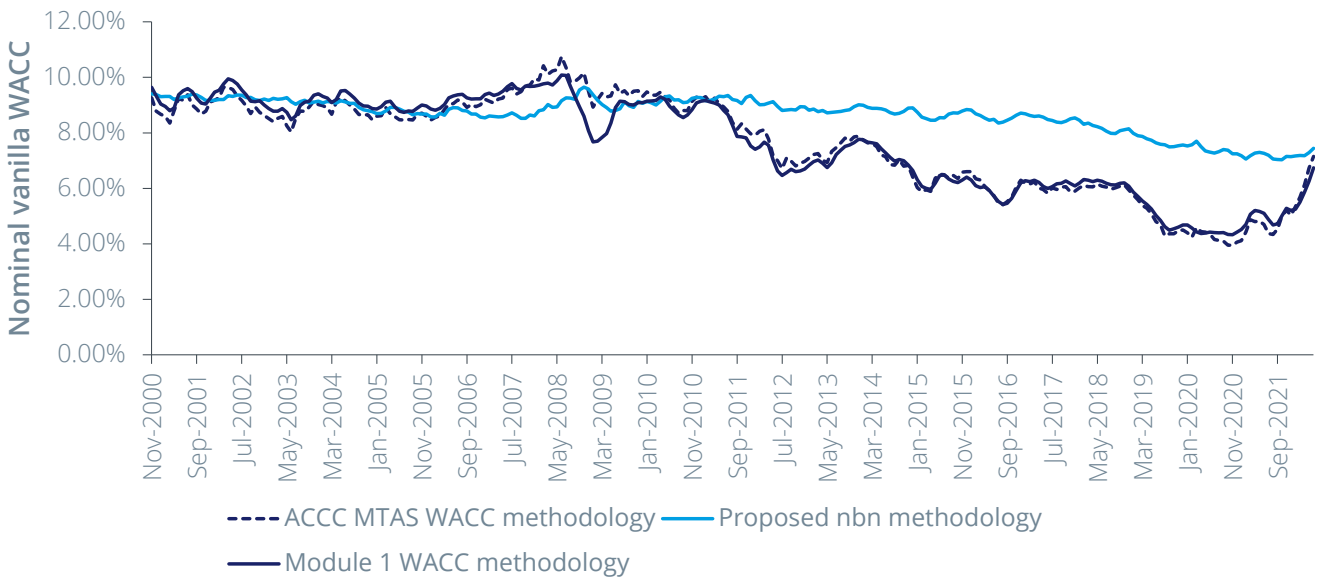


Figure 13: Historic WACC estimates produced by nbn’s proposed WACC methodology, the Module 1 WACC methodology and the ACCC’s MTAS methodology

Source: nbn

2.8 Maximum term of Standard Forms of Access Agreement (SFAAs)

The evidence from the Initial Regulatory Period clearly supports a maximum SFAA term in excess of two years for the Subsequent Regulatory Period.

nbn’s proposal seeks to align the term of the SAU regulatory cycle and the maximum term of the SFAA to optimise both commercial negotiations and regulatory processes. The alignment will allow RSPs and nbn to negotiate commercial terms to be crystallised into an SFAA for all RSPs with a complete view of the regulatory settings established in each newly accepted Replacement Module.

During the Initial Regulatory Period ending on 30 June 2023, nbn committed to limit maximum SFAA terms to two years. No such commitment exists in Module 2 of the current SAU (i.e., from 1 July 2023).

nbn has proposed in the SAU Variation to make a commitment to align the maximum term of its SFAAs with the term of the prevailing Replacement Module. The length of the SFAA for the First Regulatory Cycle would be no longer than the length of the regulatory cycle (two years) plus three months. For subsequent regulatory cycles, the maximum term of any SFAA would be equal to the length of the regulatory cycle, being three, four or five years (maintaining the three-month buffer established in the First Regulatory Cycle).

The ACCC has invited views on whether nbn’s proposal would facilitate timely negotiation and resolution of issues.

2.8.1 Timely negotiation

In assessing whether nbn’s proposal would facilitate timely negotiation, it is necessary to consider the evidence from the Initial Regulatory Period. That evidence demonstrates three points, addressed in turn below.



First, **nbn and RSPs commit significant resources to engage in a comprehensive process to agree the terms of new coterminous SFAA-based access agreements, with that process typically commencing at least 12 months prior to the expiry of then current access agreements.**

As the ACCC noted in its 2013 SAU Decision, the maximum SFAA term commitment would have the effect of SFAA-based access agreements being coterminous, meaning they would expire at the same time (noting that **nbn** and RSPs would be free to agree access agreements with a different term).⁸⁶ The commitment has had that effect, as **nbn** and RSPs (of which there are currently over 60) have not entered into access agreements with a different expiry date to the SFAA during the Initial Regulatory Period.

As a consequence, each time **nbn** has entered into commercial negotiations with RSPs to agree the terms of new SFAA-based access agreements, it has done so via a process open to all RSPs and which provided an opportunity for RSPs to identify key issues involved negotiation around those issues, consultation on implementation options and proposed drafting. The fix experience/performance incident regime introduced under WBA4 is one example of a mechanism developed by this process and in response to RSP feedback. There are, of course, issues raised by RSPs which can be addressed by means other than negotiation of a new access agreement including, for example, by making operational changes or mid-term variations to the then-current access agreement (see further below).

Taking the most recent WBA as an example, **nbn** engaged with RSPs to negotiate and formulate the terms of a new SFAA as a basis for new access agreements. Different RSPs understandably have different commercial issues and priorities they wish to see addressed in a new SFAA. While there are some common issues of importance to RSPs, different views are often expressed about the best way to address those issues both operationally and contractually. For example, WBA4 saw over 90 unique issues raised by RSPs.

The approach **nbn** takes in these commercial negotiations is comprehensive, broad-ranging and resource-intensive as it seeks to reach a commercially negotiated outcome that is acceptable to each RSP (given that access agreements are entered into bilaterally between **nbn** and each access seeker). The number of RSPs who entered into SFAA-based access agreements has more than doubled between WBA1 and WBA4. Given the number of counterparties, scope of potential issues, implementation lead times for all parties and overlay of **nbn**'s non-discrimination obligations, commercial negotiations have typically commenced at least 12 months prior to expiry of the access agreements.

Second, **a two-year maximum SFAA term means commencing negotiations for a new SFAA-based access agreement 12 months or less after entering into an access agreement, which is premature and inefficient as evidenced by the parties' decision to extend each of WBA1, WBA2 and WBA3** (see Table 4 below). The effect of these extensions was that the term of these access agreements exceeded 2 years and extended up to 3 years and 8 months, within the range of **nbn**'s proposal.

⁸⁶ ACCC, Final Decision on the NBN Co Special Access Undertaking, December 2013, p. 67.

**Table 4: Extensions of previous WBAs**

Access agreement	Start Date	Initial Expiry Date	Extended Expiry Date	Overall term
WBA1	30 November 2011	30 November 2012	28 February 2014	2 years and 3 months
WBA2	1 March 2014	1 March 2016	16 November 2017	3 years and 8 months
WBA3	17 November 2017	16 November 2019	30 November 2020	3 years

Third, **the maximum SFAA term is not determinative of the timeliness of commercial negotiations as nbn and RSPs have agreed on mid-term WBA variations where it has been mutually beneficial.**

The extended WBA terms, as set out above, have not stifled product or service development. To the contrary, **nbn** and RSPs have regularly proposed, negotiated and agreed amendments and additions to the WBA mid-term including, where relevant, following consultation via the Product Development Forum processes set out in the SAU. These include significant variations such as those relating to the introduction of the Wireless, Satellite, FTTx variants of **nbn™** Ethernet, **nbn's** COVID-19 pricing relief measures, the RSP support payment regarding **nbn's** service delivery model changes, the introduction of **nbn™** Enterprise Ethernet and the introduction of On-Demand Fibre Connections. This shows that the maximum SFAA term is not determinative of the timeliness of commercial negotiations, and that **nbn** and RSPs agree on mid-term WBA variations where it has been mutually beneficial.

nbn's proposal recognises the practical challenges and costs to both RSPs and **nbn** in trying to negotiate new SFAA-based access agreements on a two-year cycle and seeks to facilitate timely negotiation by aligning the maximum SFAA term with the regulatory cycle which, for the reasons set out in **nbn's** Supporting Submission, allows for prompt and efficient flow-through of any changes in regulatory settings following acceptance of a Replacement Module Application (or issuance of an ACCC Replacement Module Determination).

2.8.2 Timely resolution of issues

Part XIC of the CCA provides a mechanism for the ACCC to set regulated terms of supply in the form of an access determination (AD) or binding rules of conduct (BROC) but gives preference to commercially negotiated access agreements (recognising that they can “*provide more efficient outcomes than access determinations*”⁸⁷) and then the SAU, which prevail to the extent of any inconsistency over an AD or BROC.

One effect of the maximum SFAA term commitment is to retain a periodic avenue for regulatory recourse to the extent a matter is not addressed by the SAU⁸⁸ and agreement cannot be reached on particular matters in negotiation of a new SFAA-based access agreement. However, regulatory recourse via an AD or BROC is far from the only way to achieve timely resolution of issues. There are a range of other mechanisms that exist today to resolve issues.⁸⁹

⁸⁷ Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2010 Explanatory Memorandum, 2010, at 197.

⁸⁸ CCA, ss. 152CBIA 152CBIB provide that an AD and BROc have no effect to the extent to which it is inconsistent with a SAU that is in operation.

⁸⁹ For example, mechanisms available to access seekers to resolve issues with the terms on which they take supply of nbn declared services include: (i) commercial engagement with **nbn**; (ii) **nbn** consultation processes (including under the PDF Process set out in the SAU) where an access seeker wishes to raise an issue or concern with product, pricing or operational changes proposed by **nbn**; (iii) dispute mechanisms under access agreements where there is a dispute about the current terms of supply; (iv) the detailed commercial negotiation process to formulate the terms of a new SFAA-based access agreement; (v) engagement with the ACCC in respect of matters over which the ACCC has powers under the SAU.



nbn's proposal seeks to align the maximum SFAA term with the term of the relevant SAU regulatory cycle which will be three, four or five years (except for the first regulatory cycle which is shorter at two years) and was informed by the following matters:

- The ACCC's consideration of a Replacement Module Application will involve a detailed assessment of matters such as nbn's forecast expenditure in the next regulatory period (which could, for example, include expenditure on network upgrades or other measures to enhance service quality and experience) and any price controls proposed for that regulatory period. Viewed in this context, with this information and with certainty about the ACCC's position on these matters (which include the key price terms of core regulated services supplied by nbn), nbn's proposal would provide an optimal environment for the parties to promptly address any changes in regulatory settings following acceptance of a Replacement Module Application during commercial negotiations of the SFAA-based access agreement which would commence shortly thereafter.
- The CCA gives the ACCC the power to make an Interim AD or BROC quickly.⁹⁰ Given the evidence above about the time taken to negotiate new SFAA-based access agreements, there is ample opportunity for the ACCC to make an Interim AD or BROC prior to expiry of existing access agreements if the ACCC considers there are substantive issues that cannot be appropriately resolved via commercial negotiation and taking into account the relevant matters set out in the CCA. There is also nothing stopping an Interim AD or BROC being made at the same time as a new SFAA-based access agreement is being negotiated. ADs or BROCs made prior to the expiry of an existing access agreement would undoubtedly influence the negotiation of the next SFAA-based access agreement as they would have the effect of setting a regulated baseline for those negotiations. ADs could, for example, be expressed to apply for the duration of the relevant regulatory cycle if the ACCC considered that necessary having regard to the relevant matters set out in the CCA such that access seekers could elect to take supply under the terms of that AD. For example, recent ADs made by the ACCC in the telecommunications sector had terms of between 3.5 and 4.5 years.⁹¹

nbn's proposal seeks to strike the balance between timely and efficient commercial negotiations of SFAA-based access agreements with an ongoing commitment to the regulatory oversight created by the ACCC's ability to periodically inquire into the ongoing appropriateness of terms of supply for declared services and whether there is a need for regulatory intervention in the form of an AD or BROC.

⁹⁰ CCA, ss 152CG and 152DBAA.

⁹¹ See, for example, Final AD for the Domestic Transmission Capacity Service effective from 22 October 2020 to 31 March 2025 (just over 4 years and 5 months); Final AD for the Mobile Terminating Access Service effective from 1 January 2021 to 30 June 2024 (3 years 6 months); and Final AD for fixed line services effective from 15 November 2019 to 30 June 2024 (just over 4 years and 6 months).



2.9 Service-related matters

2.9.1 Cost pass-through for service standard improvements

The SAU variation proposes a mechanism to amend **nbn**'s revenue and price caps mid-Regulatory Cycle to account for the costs of service standard improvements agreed with RSPs in commercial negotiations. In this submission, **nbn** clarifies the meaning and intended application of the SAU provisions relating to that mechanism. Broadly, the mechanism is designed to incentivise **nbn** to agree service standard improvements with RSPs, while ensuring that **nbn** is not allowed to recover the costs of such improvements if its commercial agreements with RSPs ultimately do not require **nbn** to proceed with those improvements.

2.9.1.1 The cost pass-through mechanism allows **nbn** to respond dynamically and flexibly to demand for service standard improvements

nbn considers it appropriate that the cost-pass through mechanism would apply to service standard improvements agreed with RSPs during a regulatory cycle.

The cost-pass through mechanism is intended to allow **nbn** to recover costs arising from unexpected or exogenous sources, which **nbn** could not have reasonably foreseen or factored into its cost forecasts at the beginning of the regulatory cycle. Service standard improvements during a regulatory cycle fit into this category, as they are typically a response to dynamic evolutions in the telecommunications industry that are not foreseeable at the time that **nbn** makes a cost forecast under the SAU.

Importantly, allowing cost pass-through for service standard improvements incentivises **nbn** to respond vigorously and flexibly to changing RSP demands (via the WBA negotiation process). It creates a mechanism for **nbn** to offer higher service standards to RSPs when useful to do so, rather than waiting for the next regulatory cycle. This is likely to deliver greater benefits for industry and end-users as compared to a situation where **nbn**'s commercial negotiating positions are limited by the cost implications of service standard improvements.

At the same time, the cost pass-through mechanism is intended to prevent **nbn** from inefficiently investing in service standards in a manner that unreasonably increases costs for end-users. This is achieved by giving the ACCC the power to approve or reject any cost pass-throughs for service standard improvements, which creates appropriate regulatory oversight and allows the ACCC to balance the benefits of service standard improvements against the additional costs such improvements create.

2.9.1.2 Clarifying the application of the proposed cost pass-through mechanism for service standard improvements

ACCC concern

The ACCC Consultation Paper expresses a concern that if the ACCC rejects a service standard cost pass-through application in part or in full, **nbn** could choose not to proceed with the relevant service standards improvement, and that this may lead to consumers missing out on improvements they would value more highly than it would cost to deliver.

This concern appears to arise from a particular interpretation of a clause in the SAU Variation. Relevantly, the Consultation Paper states:

However, if NBN Co makes a service standard change contingent on the ACCC not making such a cost pass-through determination of a specified kind, and the ACCC makes such a determination, the NBN proposed adjustments to



permitted revenue requirements and maximum regulated prices will have no effect (clause 2C.14(b) of SAU variation). We interpret this to mean that NBN Co would not be obliged to proceed with a service quality improvement in that scenario but could choose to do so.⁹²

nbn would like to clarify the intended meaning and application of that clause and more generally the proposed mechanism for cost pass-through applications relating to service standard improvements. Broadly, the purpose of that clause and mechanism is to:

- incentivise nbn to agree service standard improvements with RSPs in commercial negotiations;
- allow the ACCC to include the costs of such improvements in the Building Block Model framework mid-Regulatory Cycle; and
- ensure that such costs are not included in the Building Block Model framework if nbn is ultimately not required to proceed with the improvements under the terms of its commercial agreements with RSPs due to the nature of the ACCC's decision.

We set out further information on this issue below and would be happy to engage further with the ACCC on this point to explain why, in nbn's view, the stated concern does not arise.

Context of nbn's proposal

nbn appreciates that the proposed cost pass-through mechanism for service standard improvements is a bespoke regulatory proposal. It has been designed to account for nbn's circumstances and regulatory framework – and in particular, to recognise that nbn operates in a dynamic and competitive environment, where its service standards are agreed with RSPs through commercial negotiations (rather than being set upfront by Government regulation, which is typically the case for infrastructure operators which are subject to Building Block Model regulation).

In that context, nbn's proposal reflects that:

- nbn's commercial agreements with RSPs (principally the WBA) will set out relevant service standards as negotiated with RSPs, where the term of those agreements will likely commence after an SAU Replacement Module is accepted or otherwise determined by the ACCC for the relevant period;
- each SAU Replacement Module will state the forecast ABBRR for each year of the Regulatory Cycle, including forecast operating and capital expenditure which reflects the service standards applicable under nbn's commercial agreements and other regulatory arrangements applicable at the relevant time (where those expenditure levels will not account for the costs of service standard improvements which may be agreed with RSPs in subsequent commercial negotiations);
- nbn may negotiate and agree service standard improvements with RSPs during a Regulatory Cycle – and would be further incentivised to agree improved service standards in those negotiations if there were a mechanism by which nbn's ABBRR could be amended and the costs of the improvements accounted for in the Building Block Model framework mid-Regulatory Cycle; and
- nbn's commercial agreements with RSPs may provide for particular service standard improvements to be conditional on the Building Block Model framework accounting for the costs of those improvements – so that nbn has the regulatory opportunity to recover those costs. Equally, nbn's commercial agreements

⁹² ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, pp. 18, 43-44.



with RSPs may provide for particular service standard improvements to be implemented regardless of whether the associated costs are ultimately accounted for in the Building Block Model framework.

That is, whether **nbn** is required to implement a particular service standard improvement agreed with RSPs will depend on the terms of the commercial arrangements agreed between **nbn** and RSPs. Those terms will be agreed prior to the cost pass-through application being made.

In that context, clause 2C.14(b) of the SAU variation provides that, if **nbn**'s commercial agreements with RSPs make certain service standard improvements conditional on the ACCC accounting for the costs of those improvements in the Building Block Model framework, and the ACCC does not make that allowance (such that the conditions in **nbn**'s commercial agreements with RSPs are not met and those agreements do not require **nbn** to proceed with the improvement), then those costs will not be accounted for in the Building Block Model framework.⁹³ This clause is intended to protect consumers and ensure that the regulatory cost pass-through mechanism works harmoniously with the outcome of service standard improvement negotiations between **nbn** and RSPs.

In contrast, that clause does not imply that *'if the ACCC does not accept a cost pass-through application in full, NBN Co would not be required to proceed with the relevant Service Standards Improvement'*. Rather, **nbn**'s permitted course of action will depend on the position agreed with RSPs prior to the cost pass-through application being lodged with the ACCC. The proposed SAU mechanism simply ensures that **nbn** and RSPs retain the flexibility to agree that some service standards improvements will be conditional on the ACCC approving some or all of the associated cost pass-through application – and that **nbn** will not be given the regulatory opportunity to recover such costs if those commercially agreed conditions are not met and **nbn** is not contractually required to implement the improvement.

More generally, it is reasonable for **nbn** to have the ability to not proceed with a service standards improvement if the ACCC rejects the associated cost pass-through application. Service standards improvements may involve significant costs for **nbn** and a cost pass-through application may only be made if the total increase in **nbn**'s costs resulting from the service standards improvement is a material proportion of the forecast ABBRR.⁹⁴ When **nbn** commits to a service standards improvement that materially increases its costs, it is reasonable that **nbn** should have the ability to recover its efficient costs via the cost pass-through mechanism. If the cost pass-through application is rejected by the ACCC in circumstances where RSPs have agreed that such cost pass-through is a reasonable precondition to the service standards improvement, it would be unreasonable to then require **nbn** to unilaterally absorb the significant costs of the service standards improvement for the benefit of end-users and RSPs.

Finally, the ACCC also expresses a concern about the fact that there are no consequences proposed for reductions in service quality. **nbn** does not consider this to be a concern that is likely to eventuate in practice. As summarised in section 3.9.1.2 above, **nbn** has continually improved its service standards over time, and faces strong incentives to continue doing so (including due to the ACCC's regulatory backstop powers).

⁹³ The clause expresses this in terms of the relevant changes to the 'Adjustable Elements' (i.e., the ABBRR and MRPs) not taking effect. Note also that the term 'Service Standards Improvement' in the SAU variation is defined to mean a new or varied Standard Form of Access Agreement (SFAA) published on **nbn**'s website which changes a service standard commitment relative to commitments in the previous SFAA – noting **nbn**'s practice to publish SFAAs after the relevant terms have been negotiated with RSPs (and noting **nbn**'s legislative obligations to not discriminate between RSPs in the provision of eligible services and the conduct of related activities).

⁹⁴ SAU variation, clause 2C.12.1(a)(ii).



2.9.2 Network boundary points

The SAU Variation contains prescriptive details regarding the network boundary points for each of the MTM technologies. As the ACCC recognises, these network boundary points are generally similar to those for the original access technologies included in the existing SAU. The FTTC network boundary point is physically and technically identical or similar to FTTN. It differs in that the FTTC service has a service boundary that extends beyond this point (to a port on an **nbn**-supplied device located at the premises). In each case, the network boundary point is reasonable, as it reflects the furthest extent of **nbn**'s network and so the furthest extent to which **nbn** can take responsibility for the network.

2.9.2.1 Network boundaries generally

The original SAU contains prescriptive details on the downstream network boundary for each of the original networks over which **nbn** supplies the NBN Access Service. In each case, this network boundary point is a port on an **nbn**-supplied device used to serve a particular premises (the Network Termination Device, or 'NTD'). This provides certainty about **nbn**'s scope of responsibility for the NBN Access Service and the service in relation to which the SAU applies.

The SAU Variation extends the same approach by containing prescriptive details on the downstream network boundary for each MTM network:

- for HFC, this is a port on an NTD, as it is for the original networks;
- for FTTN and FTTC:
 - at a single-dwelling unit (such as a house), this is the first telecommunications outlet or a marked point on a copper cable leading into such a premises (which is called a Passive NTD);
 - at a multi-dwelling unit (such as an apartment), this is a handover point on a telecommunications frame usually located in a dedicated communications or utility room (for example, in a basement); and
- for FTTB, this is the same point as for FTTN and FTTC in a multi-dwelling unit.

These boundary points in the MTM service descriptions (which align with those in WBA4) provide the same degree of certainty as the original SAU, both as to **nbn**'s service responsibilities and its SAU commitments. The boundary points are reasonable because they demarcate **nbn**'s responsibility for its access service at the last point in the network over which **nbn** has operational control.

2.9.2.2 The FTTC network boundary

The Consultation Paper specifically notes the FTTC boundary point and the fact that *“For non-multi dwelling units, this boundary point puts the NBN Co network connection device outside of NBN Co’s network boundary”*.⁹⁵ As summarised above, the FTTC boundary point is identical to the corresponding FTTN boundary point. In both cases this is because the cabling that extends beyond the specified boundary point is owned by a third party. For single-dwelling units, this is usually the owner of the premises. For multi-dwelling units, this is usually the body corporate or strata corporation that owns the building. In both cases, the cabling does not form part of the **nbn** network and so the network boundary must be before the start of that cabling.

⁹⁵ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 45.



There is a nuance with FTTC because, unlike FTTN, the service boundary extends beyond the network boundary. This is for a technological reason.

The FTTN service relies upon an RSP-supplied modem (or an end-user supplied one) to connect the NBN Access Service. **nbn**'s network and service terminate at the network boundary (for example, in a single-dwelling unit, at the first telecommunications outlet) and the cabling and service beyond that point are the responsibility of the RSP and end-user.

The FTTC service, however, relies on an **nbn**-supplied network connection device ('NCD') instead of the RSP-supplied modem used in FTTN. Consequently, **nbn** has defined the service boundary for the NBN Access Service over the FTTC network in a way that extends beyond the network boundary, to the data port on the NCD. **nbn** relies on RSPs (and indirectly on end users) for the right to use the cabling between the network boundary and the service boundary (for example, at a single-dwelling unit, between the first telecommunications outlet and the NCD). However, this right does not extend to transferring the ownership of the cabling, and so (as noted) the cabling does not form part of **nbn**'s network, meaning the network boundary must be before that cabling. It is worth noting that the end user of service is not always the owner of the cabling (for example, the end user at a single-dwelling unit may be renting the premises, and so not own the premises or the cabling).

The network and service boundaries on the FTTC network are well settled in the WBA. They were set following industry consultation which occurred before the launch of the FTTC service. This approach has been adopted in the SAU.

Given the technical operation of the service, the legal ownership of cabling and existing industry agreement on the FTTC network boundary, **nbn** considers it to be reasonable.

2.9.3 Service level reporting

2.9.3.1 Evidencing service quality and network performance

The proposed reporting commitments provide appropriate transparency regarding **nbn**'s service quality and network performance, and comparable measures should be considered for competing networks.

nbn is aligned with the ACCC and industry in seeking to ensure that RSPs, the ACCC and end users have sufficient transparency to ensure confidence in the quality of **nbn**'s services and performance of the **nbn**TM network is maintained. It is important that service level and network performance reporting commitments strike a balance between delivering genuine insight into key benchmarks so that any trends over time can be identified and not driving unnecessary cost. Where existing contractual terms and reporting commitments lead to appropriate consumer outcomes, extraneous reporting commitments should not be established where the benefits have not been demonstrated to outweigh the cost of implementation.

The SAU commitments therefore seek to leverage existing reporting processes and commitments, and fill the gap where the ACCC, RSPs and **nbn** have aligned on the value of additional network wide reporting (specifically network capability, outages and recurring faults).

The value of proposed reporting is not only in evidencing the link between price and quality on the **nbn**TM network, but in demonstrating the performance of the **nbn**TM network as against competing operators. In assessing the proposed reporting commitments therefore, and whether reporting obligations are best addressed via the SAU or through a combination of commercial negotiation and ACCC mandated reporting requirements, **nbn** considers that equivalent commitments should be considered for competing superfast broadband networks (of a sufficient scale).



In support of the proposed commitments, **nbn** outlines below: (1) why the scope services subject to the reporting commitments is appropriate; and (2) clarification that the monthly reporting already provided to RSPs incorporates reporting on performance incidents that **nbn** has committed to continue under the Variation.

Reporting specific to nbn™ Ethernet services

In its Consultation Paper the ACCC has sought views on the scope of services to which the network performance reporting requirements apply.

nbn™ Ethernet services comprise the vast majority of services supplied by **nbn** and are the primary residential product supplied by **nbn**. While industry consultation has considered matters with respect to both **nbn**'s Core Regulated Services and Competitive Services, the performance reporting concerns raised by industry and the ACCC as part of consultation on the SAU have been primarily concerned with the **nbn™** Ethernet product. For this reason, it is appropriate that the service reporting obligations are specific to **nbn™** Ethernet.

It would not be appropriate for the SAU to prescribe additional reporting commitments with respect to **nbn**'s Competitive Services. **nbn** already faces a substantial disadvantage against competing networks in the supply of Competitive Services such as Enterprise Ethernet, where **nbn**'s non-discrimination obligations, SFAA and PDF requirements compel the sharing of product, pricing and performance information in a manner so that all access seekers are treated equivalently. Competing operators have much greater flexibility in their ability to keep certain information confidential that may create a competitive disadvantage. Imposing additional service level reporting on services such as Enterprise Ethernet would exacerbate the already unlevel playing field and impose additional reporting processes where a need has not been demonstrated.

Reporting on Performance Incidents

In its Consultation Paper the ACCC has noted:

The ACCC is interested in views on whether the reporting requirements proposed by NBN Co enable performance issues to be monitored effectively and enable retailers to mitigate risks to end-users. For instance, we are interested whether the requirements that NBN Co only report on end-user faults for each access technology, exclusive of service performance incidents, could undermine efforts to mitigate the risk to end-users that performance incidents pose.

In addition to commitments regarding fault rectification performance, the Variation includes proposed reporting commitments in relation to End User incidents. This reporting is already provided to RSPs under WBA Service Levels Performance Report and would be incorporated under the SAU pursuant to section 1H.6.7 of the Variation (also reflected in section 3D.2.7). This section provides:

1H.6.7 End User incidents report

Subject to clause 1H.6.1(d), NBN Co will provide to each Access Seeker and, on request, the ACCC, a monthly report setting out, in respect of the relevant month, the percentage of End User incidents (excluding for clarity any End User Faults) rectified in accordance with any service levels agreed between NBN Co and the Access Seeker in an Access Agreement.

Together with the extensive commitments regarding fault rectification **nbn** considers this continued reporting of End User incidents will contribute to a more holistic view of end user and network performance, to the benefit of end users, RSPs and industry more broadly.



2.9.3.2 Form, method, timing and detail in reports

nbn has proposed reporting commitments so as to deliver the critical information (both existing and new) while minimising operational and cost impacts on both **nbn** and RSPs.

In order to deliver the benefits of enhanced network performance transparency, while minimising the cost and operational impact to RSPs and **nbn**, the proposed reporting commitments are designed to leverage existing reporting processes to the greatest extent possible. In particular:

1. **WBA Service Level Performance Report:** This monthly report is provided to RSPs, summarising **nbn**'s performance against service levels in the WBA (including connection, fault rectification and end user incidents, appointment timeframes and network availability).
2. **Monthly Progress Report:** This public report is published by **nbn** on its website and provides a monthly view on key metrics relating to the service **nbn** delivers to RSPs as well as the physical connection of premises to the network (including fixed line network congestion, fixed wireless busy hour cell and transmission link performance, connections and faults).

For those new reporting commitments that **nbn** is proposing to introduce (Intentional Outages, Recurring Faults and under its Utilisation Management Commitment) **nbn** has proposed what it considers is the most appropriate form and detail without driving unnecessary cost into **nbn**'s operations or causing duplicative reporting processes. Where RSPs or ACCC have proposed that the SAU should incorporate reporting commitments that **nbn** already provides under the WBA Service Levels Performance Report or Monthly Progress Report, the Variation seeks to commit to continue this existing reporting. That is, we have tried to avoid creating a separate 'SAU specific' reporting mechanism that provides the same information to interested parties via alternative channels.

2.10 ACCC functions and powers

2.10.1 ACCC functions and powers under the SAU need to preserve the regulatory certainty provided by the SAU

The SAU Variation confers numerous powers on the ACCC to establish a robust economic regulatory framework, striking a balance between ACCC regulatory oversight and **nbn** having commercial flexibility to support the delivery of Government policy objectives, respond to competition and continue to invest in its network for the benefit of Australians.

In its Consultation Paper, the ACCC raises the general issue of whether the powers and functions conferred on the ACCC in the SAU Variation are "*sufficient, in nature and scope*" to deal with situations that "*arise over the duration of the SAU that could not be anticipated in advance of its acceptance*".⁹⁶

The SAU Variation confers several functions and powers on the ACCC that are in addition and complementary to the ACCC's existing functions and powers under the current SAU. Those functions and powers relate to important aspects of how **nbn** would be regulated under the SAU, including an expanded and enhanced regulatory oversight role in respect of both **nbn**'s revenue and expenditures. In **nbn**'s view, these additional functions and powers are substantial and establish a robust economic regulation framework for the Subsequent Regulatory Period.

⁹⁶ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 48.



For example, the SAU Variation confers significant new powers on the ACCC to conduct ex-post reviews of **nbn**'s capital expenditure, to approve cost pass-through applications under the proposed new revenue cap framework, to categorise new products as being either 'core' or 'competitive' products and to determine consequent cost allocations.

The modular structure of the SAU also facilitates changes to **nbn**'s regulatory framework over the term of the SAU (with an important oversight role for the ACCC), while ensuring a degree of regulatory certainty for **nbn** and the industry. The modular structure of the SAU allows **nbn** to propose changes to the long-term regulatory framework through Replacement Module Applications or variations to the SAU. The ACCC has the power to accept or reject such changes. Through that role, the ACCC will be in a strong position to influence the changes that are proposed (since **nbn** will have strong incentives to ensure that the Replacement Module Applications it proposes to the ACCC will be acceptable to the ACCC, so as to avoid a Replacement Module Determination being made).

These functions and powers granted to the ACCC strike a balance between ensuring that **nbn** is subject to regulatory oversight and providing **nbn** with a level of commercial flexibility to achieve its objectives, including to support the delivery of Government policy objectives, to respond to competition and market dynamics and continue to invest efficiently to lift the digital capability of Australia. **nbn** considers that this balance ensures that the Variation promotes the long-term interests of end-users and is reasonable.

In particular, the need for a balance between regulatory certainty and flexibility was acknowledged by the ACCC when accepting the SAU in 2013, stating:

*There is a trade-off between certainty to NBN Co and access seekers by locking in detailed provisions and allowing flexibility to consider the particular circumstances at that time. An appropriate balance between certainty and flexibility is desirable, particularly in the context of long term regulatory arrangements. If too many terms and conditions are locked in or are locked in for too long, this may result in situations where, due to changing circumstances, the terms and conditions may not appropriately reflect the legitimate business interests of NBN Co or may not promote the long-term interests of end-users. **Conversely, if too many terms and conditions are subject to change, this could create uncertainty, which may have negative implications for the efficient use of and investment in the NBN...** (emphasis added)*

In its 2013 final decision to accept the SAU, the ACCC also acknowledged the importance of regulatory certainty to **nbn**'s efficient investment incentives:

*"Regulatory certainty is an important precursor to efficient investment. In particular, for NBN Co to invest efficiently, it needs to know it will be provided an opportunity to recover its efficient costs (including a return on investment) over time. The ACCC is satisfied that the SAU provides sufficient regulatory certainty to promote efficient investment in the NBN."*⁹⁷

The opportunity to attain appropriate regulatory certainty and encourage efficient investment is a key benefit of any SAU and a key reason why SAUs were introduced into the legislative framework which governs access to telecommunications services.⁹⁸ **nbn** considers that granting the ACCC functions and powers under the SAU that are too broad and open-ended would not be consistent with one of the objectives of the SAU, which is to afford a degree of regulatory certainty and to facilitate investment.

⁹⁷ ACCC, NBN Co Special Access Undertaking – Final Decision, 13 December 2013, pp. 59-61.

⁹⁸ The objective of the reforms which introduced the concept of SAUs into the telecoms regulatory framework was "...encouraging further investment in the telecommunications infrastructure required for broadband and other key communications services, by enabling potential investors to obtain up-front certainty, through undertakings to the ACCC about access prices and terms and conditions that will apply to their future investments": Second Reading Speech to the Telecommunications Competition Bill 2002.



In this context,, **nbn** does not consider it necessary or consistent with the objectives of an SAU for the ACCC to receive broad-based, open-ended powers to “review the effectiveness of the existing regulatory controls” (as suggested in the Consultation Paper).⁹⁹ Providing the ACCC with overly broad new powers in the SAU to reset or introduce features into the SAU would undermine the purpose of the SAU and the regulatory certainty it is intended to provide. As the ACCC noted in its 2013 final decision (summarised above), this would discourage efficient investment in infrastructure and would not promote dynamic efficiency.

2.10.2 Clarity of conferred powers

nbn recognises the importance of the ACCC’s functions and powers under the SAU Variation. It is critical that those functions and powers be described in a way that provides certainty on the scope of those functions and powers, so that **nbn** can have appropriate certainty in making its own decisions. That need for certainty is balanced against the need to ensure that the ACCC has sufficient time and flexibility to undertake its defined functions and powers.

In its Consultation Paper, the ACCC states that it proposes to assess the clarity with which each ACCC function and power under the SAU Variation is conferred.¹⁰⁰

nbn agrees with the ACCC’s point and considers that the functions and powers conferred on the ACCC by the SAU Variation are clear and meet the ACCC’s requirements. It is in **nbn**’s interest to avoid any potential ambiguity as to the scope and exercise of the ACCC’s functions and powers. These functions and powers have the potential to impose significant consequences on **nbn** (for example, where the ACCC exercises its powers to accept or reject a Replacement Module Application, issue an ACCC Replacement Module Determination or conduct an ex-post review of **nbn**’s capital expenditure). Achieving regulatory certainty regarding the way these functions are exercised is of paramount importance to **nbn**, as it is to the ACCC. Accordingly, **nbn** has endeavoured to be as clear as possible in the SAU Variation on these functions and powers as well as their limits.

2.10.3 The proposed deeming provisions are consistent with the legislative framework

The proposed deeming provision in clause 4.10(j) of the SAU Variation seeks to avoid any regulatory ‘gap’ arising where neither an RMA nor an RMD is in place during a Regulatory Cycle. The provision does not impact the ACCC’s ability to make a statutory decision to accept or reject SAU variations and is consistent with the legislative framework in Part XIC of the CCA.

In the event that the ACCC has not accepted **nbn**’s Replacement Module Application (**RMA**) and has not made an ACCC Replacement Module Determination (**RMD**) at least 20 Business Days prior to the last day of the Regulatory Cycle, the SAU Variation would deem the ACCC to have made an RMD for the upcoming Regulatory Cycle, in which the matters to be specified in an RMD are determined in accordance with **nbn**’s RMA for that upcoming Regulatory Cycle.¹⁰¹

The ACCC asks whether this deeming provision is consistent with the legislative framework, including:

⁹⁹ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 48.

¹⁰⁰ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 49.

¹⁰¹ See clause 4.10(j) of the SAU Variation.



- section 152CBG of the CCA, which governs the ACCC’s consideration of a proposed variation to an SAU and, thus, to any NBN Co replacement module application; and
- section 152CBA(10A) of the CCA, which provides that the ACCC may perform functions, and exercise powers, conferred on it by an SAU in accordance with that SAU.

nbn considers that the deeming provision is consistent with the legislative framework, noting the following:

- **nbn's** SAU provides for **nbn** to submit RMAs as variations to the SAU, to be accepted or rejected by the ACCC in accordance with s152CBG of the CCA.¹⁰² The SAU also confers a power on the ACCC (pursuant to s152CBA(10A) of the CCA) to make RMDs in the event it has not accepted an RMA submitted by **nbn**.
- As noted in **nbn's** Supporting Submission, **nbn** has proposed the relevant deeming provision to avoid any regulatory ‘gap’ arising where the ACCC has not accepted **nbn's** RMA but has not made an ACCC Replacement Module Determination in the relevant timeframe. In the absence of this provision, **nbn** may inadvertently be placed in a position of regulatory uncertainty, in which neither a Replacement Module nor an RMD is in place during a Regulatory Cycle.
- The proposed deeming provision in clause 4.10(j) does not impact the ACCC’s ability to make a statutory decision in accordance with s152CBG of the CCA to accept or reject an RMA as an SAU variation. Rather, that provision only establishes the regulatory settings which will apply under the SAU in the event that the ACCC has not made such a statutory decision by a particular point in time. If there is still an RMA before the ACCC as a proposed SAU variation at that point in time or afterwards (i.e., one which **nbn** has not withdrawn), the ACCC is still free to reject or accept that RMA in accordance with s152CBG of the CCA. If the ACCC rejects such an RMA, then the relevant regulatory settings would continue to be determined in accordance with the deeming provision. If the ACCC accepted such an RMA:
 - that RMA would take effect as a variation to the SAU (pursuant to s152CBG of the CCA and clause 7.1 of the SAU Variation); and
 - the deemed RMD would no longer have effect (pursuant to clause 4.10(h) of the SAU Variation, which is clause 4.8(h) of the current SAU).

By way of comparison, a similar deeming process is provided for in s90(1) of the CCA, which provides that if the ACCC does not determine an application for authorisation (other than a merger authorisation) within a relevant period, then it is taken to have granted the application at the end of that period.

2.10.4 Requirement for ACCC to consider expenditure objectives and factors when making decision on RMA

The proposed requirement that the ACCC have regard to the expenditure objectives and expenditure factors when deciding whether to accept or reject a Replacement Module Application is consistent with the legislative framework in Part XIC of the CCA.

Clause 4.5(d) of the SAU Variation requires the ACCC to “have regard to” the expenditure objectives and expenditure factors in deciding whether to accept or reject an RMA lodged by **nbn**. The clause is intended to promote the values of consistency and rationality in the ACCC’s decision-making.

¹⁰² See the express acknowledgement to this effect in clause 4.5(c) of the SAU Variation. See also Background clause N, clause 4.1(e).



The ACCC has queried in its Consultation Paper whether the requirement in clause 4.5(d) is inconsistent with Part XIC of the CCA governing ACCC decision-making on a variation to the SAU.¹⁰³

Clause 4.5(d) does not impose an obligation on the ACCC to *only* consider the expenditure objectives and expenditure factors, or to give the expenditure objectives and expenditure factors any particular weight, and no such obligation can be implied from the language used in the clause.

The requirement for the ACCC to consider the expenditure objectives and expenditure factors in deciding whether to accept or reject an RMA does not constrain the exercise of the ACCC's statutory discretion under section 152CBD of the CCA and **nbn** submits that it is therefore not inconsistent with the legislative framework under Part XIC of the CCA.

2.10.5 Consistency with Part XIC framework of ACCC being bound by rules in making an RMD

The regulatory framework established by the SAU, which requires the ACCC to make Replacement Module Determinations in accordance with rules set in the SAU (if it has rejected an **nbn** Replacement Module Application), is consistent with the legislative framework in Part XIC and the framework accepted by the ACCC in relation to the original SAU in 2013.

The ACCC Consultation Paper asks whether the limits on the ACCC's powers to make a Replacement Module Determination (**RMD**), as proposed in the Variation (including in relation to the expenditure objectives and factors in clause 2C.2.5), are consistent with the legislative framework established by Part XIC of the CCA.¹⁰⁴

The Replacement Module provisions in the current SAU set out a process by which **nbn** will seek to incorporate a Replacement Module into the SAU, by way of an application to vary the SAU under section 152CBG of the CCA. If the ACCC does not accept an RMA by **nbn**, the ACCC must issue an ACCC RMD addressing the same matters as those required to be included by **nbn** in an RMA.

nbn notes that the power to make an RMD is a power conferred on the ACCC by the SAU, pursuant to section 152CBA(10A) of the CCA. Imposing limits on that conferred power in the SAU (in the form of rules by which RMDs must be made) does not impact or limit the ACCC's ability to make a statutory decision in accordance with section 152CBG to accept or reject an RMA as an SAU Variation. Rather, those rules only establish the regulatory settings which will apply under the SAU in the event that the ACCC rejects **nbn**'s RMA and exercises the power granted to it under the SAU to make an RMD. The existence of such rules is therefore consistent with the legislative framework in Part XIC of the CCA.

nbn considers that the setting of rules for the making of RMDs, as proposed in the Variation, provides an appropriate degree of regulatory certainty while still providing the ACCC with significant discretion as to the regulatory settings which will apply in a given Regulatory Cycle. **nbn** considers that the proposed Replacement Module framework, with the attendant ACCC powers, is likely to promote the LTIE and is broadly consistent with the framework envisaged by the current SAU as accepted in 2013.

nbn's views on the adequacy of the expenditure objectives and expenditure criteria are addressed in section 2.6 of this submission.

¹⁰³ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 50.

¹⁰⁴ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 51.



2.10.6 Commitment to supply relevant information

In its Consultation Paper, the ACCC signals its intention to consider whether each function and power in the SAU Variation is supported by a firm commitment from **nbn** to supply all relevant information, including by the ACCC requesting information or an existing or conferred ACCC power to compel information.¹⁰⁵

nbn recognises the importance of the ACCC having all relevant information in order to effectively exercise the ACCC's functions and powers under the SAU. In the same way, **nbn** has every incentive to seek out, and take into account, relevant information when **nbn** is exercising its own rights and complying with its obligations under the SAU. This is required to give **nbn** confidence that its decisions and proposals are as well-informed as reasonably possible (and that there are no "hidden" or unexpected sources of information that access seekers or the ACCC can raise in response to **nbn**).

Under the SAU Variation (and the current SAU more broadly), the conferral of a function or power on the ACCC typically follows **nbn** exercising a right or complying with an obligation. For example, the ACCC's power to accept or reject a Cost Pass-Through Event Application is preceded by **nbn** making that application, and the ACCC's power to re-categorise a new product as either core or competitive follows **nbn** launching that product. In all such cases, where **nbn** is exercising its right or complying with the obligation that triggers the ACCC's related function or power, **nbn** would naturally want to have considered the relevant information in doing so. For example, before introducing a price structure that is capable of being vetoed by the ACCC, and recognising that any such veto would be hugely disruptive to **nbn**, **nbn** will want to ensure that it has taken into account all information that is reasonably available to it. Otherwise, **nbn** would be putting itself at an increased risk of getting its own decision wrong or the ACCC exercising the veto power to **nbn**'s detriment, based on information that **nbn** could reasonably have obtained (but did not). It follows that the ACCC should similarly have access to that set of information.

In that spirit, **nbn** has been proactive in proposing commitments in the SAU Variation on **nbn** to supply information to the ACCC. **nbn** sees these as conducive to the effectiveness and timeliness of the ACCC's decision-making in relation to SAU Variation processes.

While **nbn** is cognisant that these SAU provisions may not be strictly necessary, given the ACCC's broad powers to compel information in relation to the SAU (and Part XIC more generally) under section 155 of the CCA and the ACCC's statutory powers to make record-keeping rules, our overarching preference is to ensure appropriate information supply occurs through SAU processes, rather than relying on alternative statutory processes. That does not limit the ACCC's information-gathering powers under section 155 and record-keeping rules, which would remain as a backstop.

2.10.7 Information "reasonably available to nbn"

2.10.7.1 Incentives for nbn to seek out all relevant information

The ACCC has stated that *"the requirement to consider only information reasonably available to NBN Co could arguably distort decision making and potentially weaken incentives on NBN Co to diligently seek out all relevant options and information."*¹⁰⁶

¹⁰⁵ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 49.

¹⁰⁶ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 49.



nbn does not agree with this view. **nbn** considers that it has strong incentives to ensure that it seeks out all information reasonably available to it. As noted above, this incentive primarily stems from the importance of **nbn** having certainty with respect to its own decision-making, but also reflects **nbn**'s incentive to anticipate and address potential concerns from the ACCC and access seekers.

Further, clause 2C.2.5(a)(iv) of the SAU Variation requires that the relevant forecasts that contribute to the Forecast Nominal ABBRR and Forecast Nominal Core Services ABBRR must be based on “*information and analysis reasonably available to NBN Co, at the time of making the forecasts*”.

The reference to information being “reasonably available” is intentionally an objective standard. It refers to information that **nbn** could come to possess if it took reasonable steps to do so. It is not limited to information that **nbn** actually possesses, or takes into account, at that time. **nbn** could not circumvent this provision by limiting the scope of the information it seeks out or has regard to. There is no incentive for any form of wilful blindness.

Alternatively, it may be the case – although this is not clear from the Consultation Paper – that the ACCC's concern stems from clause 2C.2.5(a)(iv) which refers to information reasonably available *to nbn*, rather than information that is reasonably available to the ACCC. In that context, **nbn** appreciates that the ACCC may wish to understand how this applies in the context of the ACCC making a forecast when issuing a Replacement Module Determination. **nbn** considers that in that scenario, clause 2C.2.5(a)(iv) would permit the ACCC to take into account any “updated” information (i.e., information that has become available since the time of **nbn**'s original forecast) when the ACCC was making its own forecast, so long as that information is “reasonably available” to **nbn** at that later time. Even though it would be the ACCC making the forecast, rather than **nbn**, it is still appropriate for the relevant information to be considered by reference to **nbn**, rather than the ACCC, since it is ultimately **nbn** that will be subject to the regulatory settings that follow. To put it another way, it would not be reasonable for **nbn** to be regulated on the basis of information that is not reasonably available to **nbn**.

2.10.7.2 Considering “new” information after the time of an initial decision

In this vein, the ACCC raises a more specific concern that the requirement to consider only information reasonably available to **nbn** at the time of making the forecasts “*could potentially operate to prevent the ACCC from considering information that should have brought about a reconsideration of an original decision to proceed with a particular investment program where this becomes available after the time of the initial decision to proceed*”.

The underlying intent of clause 2C.2.5(a)(iv) of the SAU Variation is to avoid “hindsight review” by limiting both **nbn** and the ACCC to consider only information that is reasonably available to **nbn** at the time that **nbn** or the ACCC (as the case may be) makes the forecast. As noted above, the consideration of what information is “reasonably available to **nbn**” is not limited to the time that **nbn** makes the original forecast. If the ACCC makes a forecast under clause 2C.2.1 or 2C.2.2 in the course of making a Replacement Module Determination, it would be open to the ACCC to consider information reasonably available to **nbn** *at the time of the ACCC's (updated) forecast*.

The ACCC's concern is also relevant to clauses 2C.9.7(c)(iii)(B)-(C) and 2C.9.7(e) of the SAU Variation, which require that the ACCC consider the prudence and efficiency of **nbn**'s capital expenditure based on information at the time **nbn** made the decision to incur the relevant capital expenditure. As with clause 2C.2.5(a)(iv), the intent of this clause is to ensure that **nbn** is not penalised by a “hindsight review” using information that **nbn** could not have reasonably considered at the time of making the decision. This is important for promoting the certainty required for **nbn** to make efficient and prudent investments. Otherwise, **nbn** could be deterred from making an



investment, even if the then-current information indicated that the investment was prudent and efficient, purely due to speculation that future information could later call that investment into question.

This approach is consistent with the approach used in other regulated sectors. For example, when IPART in New South Wales assesses the efficiency of a regulated water utility's capital and operating expenditure, it does so by reference to the *"information available to the [regulated] utility at the relevant point in time"*. For forecast expenditure, this is based on *"currently available information"* (i.e., at the time the forecast is made), while for historical expenditure, the reference point is the information *"available to the utility and the circumstances prevailing at the time it incurred the expenditure"*.¹⁰⁷ This reflects the principle that information that is not reasonably available to a regulated entity at the time it made the forecast cannot later be used to amend or review the relevant forecast.

Lastly, **nbn** notes that a similar provision in clause 2C.13.5(b)(iii) of the SAU Variation requires that where the ACCC assesses an Attributable Amount for the purposes of issuing a determination following a Cost Pass-Through Event Application, then the ACCC must make its assessment *"based on the circumstances existing, and information and analysis reasonably available to NBN Co, at the time NBN Co made the decision to incur the relevant costs (to the extent those costs have been incurred at the time NBN Co makes the Cost Pass-Through Event Application) or otherwise at the time NBN Co made the Cost Pass-Through Event Application."*

The timing set out in this clause is a more nuanced version of the other clauses discussed above. This reflects that in the context of a Cost Pass-Through Event Application, there may be a time lag between **nbn** deciding to incur the cost and **nbn** making the Cost Pass-Through Event Application. Alternatively, **nbn** might have incurred some of the cost at the time of making the application but not yet all of it. It would not be reasonable for **nbn** to incur costs deserving of pass-through based on the information reasonably available to it at the time, and then be subsequently unable to recover those costs because additional information became available before **nbn** makes the application. This is different to the timing element of information considered under clauses 2C.1.2 and 2C.2.2, which solely relates to *forecast* expenditure (and not actually incurred or historical expenditure).

2.10.8 Timeframes for exercising ACCC powers

The ACCC Consultation Paper states that *"the effectiveness of a function or power conferred on the ACCC by the SAU variation could be reduced by the specification of timeframes for its exercise"* where the ACCC then ceases to have that function or power after the expiry of the timeframe. The ACCC has put forward two examples of such timeframes (under clause 4.10(i) and clause 2C.10.4(d) of the SAU Variation).¹⁰⁸

nbn considers that the timeframes proposed in the SAU Variation for the ACCC to exercise of its powers are reasonable and provide ample time for a reasonable decision-making process to take place. We respond to the ACCC's two examples below, and would be happy to respond to any other concerns the ACCC may have on decision-making timeframes.

The first example given by the ACCC is the requirement for the ACCC to make an ACCC Replacement Module Determination under clause 4.10(i) of the SAU Variation at least 20 business days before the expiry of the regulatory cycle. **nbn** considers that this is a reasonable timeframe, on the basis that:

¹⁰⁷ IPART, Water Pricing and Licensing – Regulating Water Businesses (Special Review), Review update, November 2020, p. 28, <https://www.ipart.nsw.gov.au/sites/default/files/documents/review-update-stakeholder-feedback-and-next-steps-regulating-water-businesses-november-2020.pdf>.

¹⁰⁸ ACCC, Proposed variation to the NBN Co Special Access Undertaking, Consultation paper, May 2022, p. 50.



- This is identical to the timeframes for the same decision in clause 4.8(a) of the main body of the current SAU. In its Final Decision on the SAU in December 2013, the ACCC determined that the replacement module timeframes in the then-proposed (and now-current) SAU, which included this identical timeframe for the ACCC to make a replacement module determination, “will provide sufficient time for NBN Co and the ACCC to undertake the activities set out above, and therefore provides regulatory certainty for both NBN Co and access seekers. This will promote efficient investment in infrastructure, and the long-term interests of end-users.”¹⁰⁹ The ACCC also noted that “it is important that the replacement module process be completed before the expiry of the module in force in order to provide regulatory certainty for both NBN Co and access seekers”.¹¹⁰ **nbn** considers that the same reasoning continues to apply, such that the specified timeframe will be sufficient for the ACCC to exercise its power.
- The ACCC would have a reasonable lead time to make its decision before the proposed deadline, given that the ACCC establishes the timing of the lodgement of each future replacement module application, by providing **nbn** with no less than 12 months’ notice of the due date for submission of a replacement module application, which must be no less than nine months and no more than 18 months prior to the end of the then-current regulatory cycle. This gives the ACCC control over the process timing, such that it can allow itself sufficient time to assess a replacement module application without running up against the proposed deadline.
- As the ACCC has noted, the SAU Variation includes a “deeming” provision if the ACCC does not make an ACCC Replacement Module Determination before the deadline. In this unlikely scenario, **nbn** and access seekers have a clear need for certainty as to the regulatory settings that will apply at the start of a regulatory cycle. Without this provision, a regulatory cycle could begin with the ACCC having not accepted a Replacement Module Application but also not having issued an ACCC Replacement Module Determination – and **nbn** being forced to supply services (and make operational decisions about investment and other matters) without any form of replacement module in place to govern those activities and decisions. This type of regulatory gap would lead to extreme regulatory uncertainty and would be highly detrimental to **nbn**, access seekers and end-users.
- The approach proposed in the SAU Variation provides greater flexibility to the ACCC than other regulatory regimes. For example, under the National Electricity Rules, the AER is required to publish a distribution determination (including reasons for decision) at least 2 months before the commencement of the relevant regulatory cycle.¹¹¹ This requires the AER to allow a longer gap time compared to the 20 business days (approximately 1 month) provided to the ACCC under clause 4.10 of the SAU variation. The presence of a strict timing requirement in the National Electricity Rules is an example of regulatory determinations being subject to timing constraints, in order to achieve regulatory certainty for all relevant stakeholders.

The second example mentioned in the ACCC’s Consultation Paper is the proposed 60 business day timeframe for the ACCC to disallow a categorisation of a new product or service, or allocation of building block costs (under clause 2C.10.4(d) of the SAU Variation). **nbn** considers that this is a reasonable timeframe, because:

- as above, **nbn** and access seekers have a legitimate need for certainty in the way that these categorisations are applied, which requires a clear decision-making timeframe to be in place;

¹⁰⁹ ACCC, Final Decision on the NBN Co Special Access Undertaking, December 2013, pp. 63-64.

¹¹⁰ ACCC, Final Decision on the NBN Co Special Access Undertaking, December 2013, p. 63.

¹¹¹ National Electricity Rules, clause 6.11.2. See also the equivalent rules in relation to electricity transmission networks in clause 6A.13.3 and 6A.13.4.



- 60 business days is approximately three months, which should be sufficient for the ACCC to familiarise itself with a proposed categorisation;
- this would give the ACCC considerably longer to form a view on this relatively narrow aspect of a proposed decision than, for example, the standard four-week consultation period for RSPs of proposed WBA changes (which may be much more wide-ranging in scope);¹¹² and
- the ACCC is likely (over time, if not already) to have staff familiar with these **nbn** processes given the associated functions and powers of the ACCC under the SAU Variation.

In proposing the timeframes under the SAU Variation, including both of those described above, **nbn** has endeavoured to strike an appropriate balance between, on one hand, ensuring the ACCC has sufficient time to effectively and properly undertake its functions and powers and on the other hand ensuring that **nbn** and other stakeholders have the regulatory certainty necessary to invest efficiently and otherwise carry on their business activities. For the reasons given above (including consistency with previous ACCC findings on the SAU, the importance of certainty, the nature of the information involved and the likely time required by the ACCC), **nbn** is confident that the balance proposed is a reasonable one. **nbn** is interested in any specific issues that the ACCC identifies in relation to **nbn**'s proposed approach to these matters.

¹¹² WBA Head Terms, clause F4.12(e).