

# nbn Special Access Undertaking Variation 2022 – Supporting submission

## Part C: Non-Price Terms

November 2022

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# Structure of Submission

This Submission describes the proposed material changes to the SAU and explains why this comprehensive package of regulatory obligations and constraints meets the relevant statutory criteria by which such an SAU variation must be assessed. The Submission also describes the specific commitments proposed in respect of the First Regulatory Cycle (FY24 to FY26). Detailed information can be found in the following chapters:

 <b>Executive summary and key narratives</b>	Introduction	Part A chapter 1
	Summary of how the Variation addresses ACCC and industry feedback	Part A chapter 2
	State of competition	Part A chapter 3
	Demand for higher speeds will continue to grow	Part A chapter 4
	The rationale for investing in fibre	Part A chapter 5
	The Variation supports economically efficient outcomes	Part A chapter 6
 <b>Pricing and price controls</b>	Pricing structure and levels	Part B chapter 7
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 <b>Non-price terms</b>	Incorporation of MTM technologies	Part C chapter 9
	Service quality commitments	Part C chapter 10
	Service level reporting and transparency	Part C chapter 11
	Carry over Module 1 commitments and Accounting Separation	Part C chapter 12
 <b>ACCC roles and powers</b>	Replacement Module provisions	Part D chapter 13
	nbn proposes an expanded role for the ACCC	Part D chapter 14
	Price review mechanism	Part D chapter 15
 <b>Key inputs to nbn's Regulated Revenue Requirement</b>	Recovery of initial costs	Part E chapter 16
	Regulatory Asset Base and nbn's cost allocation approach	Part E chapter 17
	WACC	Part E chapter 18
 <b>Efficiency of nbn's Expenditure and Demand Forecasts</b>	Cost pass-through mechanism	Part F chapter 19
	Expenditure assessment framework	Part F chapter 20
	Specific commitments in respect of the First Regulatory Cycle	Part F chapter 21
	Expenditure forecasts	Part F Appendix A
	Demand forecasts	Part F Appendix B
 <b>Statutory assessment</b>	The Variation satisfies the Statutory Criteria	Part G chapter 22
	Statutory role of the ACCC	Part G chapter 23
 <b>Guide to the SAU and other background materials</b>	Overview of the SAU	Part H chapter 24
	nbn's mandate and regulatory framework	Part H chapter 25
	Statement of Expectations	Part H chapter 26



## 9 SAU Service Description – Incorporation of MTM technologies

The additional multi-technology mix (**MTM**) technologies (FTTN, FTTB, FTTC and HFC) used by **nbn** are not currently subject to the product and price provisions of the SAU. This leaves them open to regulatory inconsistency and long-term uncertainty relative to **nbn**'s regulatory commitments in the SAU with regard to the FTTP, fixed wireless and satellite networks.

**nbn** proposes to incorporate the MTM technologies into the SAU framework. This will provide for a consistent regulatory framework, extending the benefits of SAU regulation, which already applies to **nbn**'s original technologies and to all **nbn** access technologies.

In doing so, RSPs and **nbn** will have greater certainty about the regulatory framework. This will encourage the efficient use of, and investment in, network infrastructure, as well as promote competition in wholesale and retail communication markets.

### 9.1 Background

Currently, a gap exists in the SAU regulatory framework wherein the original access technologies deployed or contemplated by **nbn** at the time the SAU was accepted in 2013 are covered by the SAU, but subsequently adopted technologies are not. These subsequent technologies are those that comprise **nbn**'s MTM being the **nbn**<sup>®</sup> Ethernet FTTN, FTTB, FTTC and HFC services. **nbn** proposes to extend the SAU framework to incorporate these services.

Initially, **nbn**'s remit was to design, build and operate a wholesale-only, high-speed broadband network using FTTP, fixed wireless and satellite networks.<sup>1</sup> Following a strategic review published on 12 December 2013, the Federal Government agreed that **nbn**'s roll-out should transition from these three technologies to an optimised MTM approach.<sup>2</sup>

Consistent with the Government's policy, **nbn** previously sought to incorporate the MTM technologies into the SAU framework through variations lodged in 2016 and 2017. The 2016 variation attempted to better 'future-proof' the SAU by providing for **nbn** to be able to add new technologies and varied network boundaries without lodging further SAU variations. **nbn** considered these to be reasonable changes to the SAU framework to streamline the operation of the SAU, promote regulatory certainty and process efficiency. At the time that variation was lodged, the FTTC network had not yet been launched but was in planning.

In response to ACCC concerns about this approach, **nbn** withdrew the 2016 variation and simultaneously lodged a revised variation in 2017. The 2017 variation sought to incorporate the MTM technologies into the SAU framework using the same detailed service description approach used for the original technologies in the existing SAU. **nbn** subsequently also withdrew the 2017 variation (though the new detailed service descriptions for the MTM technologies were not at issue).

<sup>1</sup> Statement of Expectations issued to **nbn** on 20 December 2010, pp. 1-2.

<sup>2</sup> Statement of Expectations issued to **nbn** on 8 April 2014, p. 1.



## 9.2 Approach to incorporating MTM technologies

To incorporate the MTM technologies into the SAU framework, **nbn**'s key proposed changes relate to:

- expansions to the service description in Attachment A of the SAU to include FTTB, FTTN, FTTC and HFC;
- committing in the SAU to continue current Wholesale Broadband Agreement (**WBA**) speed commitments relating to the performance of FTTN, FTTB and FTTC services during co-existence and remediation;
- expansions to the SAU dictionary in Attachment C, to incorporate new concepts relevant to the MTM technologies; and
- changes to other parts of the SAU as necessary to incorporate the initial products and prices for the MTM technologies.

In addition, **nbn**'s new price commitments discussed in chapter 7 of Part B of this Submission and new non-price commitments discussed below will also apply to the newly introduced MTM access technologies.

These changes are a positive development for **nbn**, RSPs and ultimately end-users. They contribute to providing long-term regulatory certainty regarding a number of key aspects of **nbn**'s services, which in turn encourages investment and innovation in downstream markets.

As **nbn** has previously articulated to the ACCC, the SAU framework is designed such that it supports a strong set of natural incentives for **nbn** to: incur costs and invest efficiently; price to efficiently recover fixed, common and variable costs from end-users; and ultimately, increase the prospects of long-term cost recovery. Relative to the March Variation, the Variation includes significant additional reforms to the regulation of **nbn**'s services, including enhanced pricing and price controls, the inclusion of Benchmark Service Standards in the SAU, and expansion of the ACCC's oversight role, all of which will apply to the MTM technologies. On this basis, extending the SAU framework to the MTM technologies will have the positive effect of bringing the MTM technologies within that overall regulatory framework. This will produce economically efficient outcomes for those technologies that meet **nbn**'s legitimate business interests and the interests of RSPs and end-users.

Extending the SAU framework to the MTM technologies also reflects the government policy change in 2014 for **nbn** to implement an MTM model. Further details regarding the policy change and **nbn**'s methodology for selecting the MTM technologies are set out in the expert report of Analysys Mason dated 31 May 2016, submitted in support of the 2016 variation. In short, the policy provided **nbn** with flexibility regarding technical, operational and network design decisions to implement the network, but **nbn** was expected to:

- deliver the network within the constraint of a public equity capital limit of \$29.5 billion specified in its funding agreement with the Australian Government and the Australian Government's broadband policy objectives;
- determine which technologies are utilised on an area-by-area basis to minimise peak funding, optimise economic returns, and enhance the company's viability; and
- be guided by the Australian Government's policy objectives of providing download data rates (and proportionate upload rates) of at least 25 Mbps per second to all premises and at least 50 Mbps per second to 90% of fixed line premises as soon as possible.

In making these decisions, **nbn** also had to have regard to a broader range of considerations, such as long-term business-case considerations and its strategy associated with exercising its rights (under the revised agreements with Telstra) to acquire some of the copper network assets from Telstra, as well as some of the HFC network assets from Telstra and Optus.

**nbn** believes the MTM model that it proposes to incorporate into the SAU framework meets these expectations.



## 9.3 Prior consultation on MTM drafting

In August 2021, **nbn** issued proposed SAU drafting for the incorporation of MTM access technologies to provide industry with an early opportunity to consider the MTM-specific changes before the Variation was lodged. This was shared with all members of **nbn**'s Product Development Forum (which includes both current and prospective RSPs, as well as consumer advocacy groups) and also with the ACCC. **nbn** received feedback from only one RSP, the majority of which concerned technical drafting points that **nbn** responded to and, where appropriate, addressed in the March Variation.

Minimal comments were received from industry on the March Variation, though the ACCC raised a question regarding the FTTC boundary point in its consultation, which is addressed in section 9.4 below. Section 9.5 then provides an overview of key drafting changes since the March Variation.

## 9.4 FTTC network boundary point

In its consultation paper on the March Variation, the ACCC noted the FTTC boundary point and the fact that “(f)or non-multi dwelling units, this boundary point puts the NBN Co network connection device outside of NBN Co’s network boundary”. The ACCC also emphasised the importance of the SAU providing clarity “in relation to the scope of regulated services, as well as lines of responsibility between NBN Co and its customers”.<sup>3</sup> Sections 9.4.1 and 9.4.2 below provide further explanation as to the reason for the description of the FTTC boundary point under the Variation.

### 9.4.1 Network boundaries generally

The current 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 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 (e.g., 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.

<sup>3</sup> See ACCC, *Proposed variation to the NBN Co Special Access Undertaking – Consultation Paper*, May 2022, p. 45: <https://www.accc.gov.au/system/files/ACCC%20consultation%20paper%20on%20NBN%20Co%202022%20SAU%20variation.pdf>.



## 9.4.2 FTTC network boundary

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**<sup>®</sup> network and so the network boundary must be before the start of that cabling.

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 (e.g., 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 (e.g., 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 the service is not always the owner of the cabling (e.g., 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.

## 9.5 Changes to MTM drafting since the March Variation

The Variation includes changes from the March Variation to provide a more comprehensive view of installation descriptions on the network. This includes:

1. **Standard and non-standard installation descriptions for satellite:** In addition to the standard and non-standard installation descriptions applicable to FTTB, FTTN, FTTC and HFC access technologies (included in the March Variation), **nbn** has included the equivalent descriptions for the satellite network, which are not included in the current SAU.<sup>4</sup>
2. **End-user self-installation available on HFC:** The description of standard installations on the HFC network has been updated to reflect the fact that End-User HFC-NTD Installation is now available for this access technology.<sup>5</sup>

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<sup>4</sup> Variation, Schedule 1C, Annexure 7.

<sup>5</sup> Variation, Schedule 1C, Annexure 5.





## 10 Service quality commitments

The Variation addresses the interaction between price and quality, and safeguards service quality expectations, through:

- the requirement for **nbn** to make available service standards in its Standard Form of Access Agreement (**SFAA**) no less favourable than the Benchmark Service Standards determined by the ACCC in a Replacement Module Determination (**RMD**). This provides RSPs and end-users with confidence in the minimum level of service that **nbn** will be required to maintain and that is directly linked to the prices and price controls that apply for each Regulatory Cycle. The Benchmark Service Standards for the first Regulatory Cycle reflect key WBA4 service standards, with some targeted improvements, as **nbn** has based its price structure and price controls for the first Regulatory Cycle on these service levels;
- ensuring appropriate ACCC regulatory oversight through its ability to set service standards at the commencement of a Regulatory Cycle, which may be the same or different to those proposed by **nbn** in its Replacement Module Application (**RMA**). The Variation also gives the ACCC powers to revisit Benchmark Service Standards during a Regulatory Cycle where required to ensure that RSPs can meet retail regulatory obligations or to respond to systemic and unforeseen issues; and
- the inclusion in the SAU of a utilisation management commitment to ensure that shared network resources within the transit backhaul component of the fixed line and fixed wireless networks continue to operate below an appropriate Utilisation Threshold. This commitment, and the associated reporting commitments, promote the LTIE through providing a transparent quality of service commitment while ensuring **nbn**'s costs are incurred as efficiently as possible. As part of the evolution of Benchmark Service Standards, **nbn** and industry may in future consider whether this network-centric approach should be replaced with an AVC-level performance framework.

**nbn**'s network investment strategy, specifically the extension of the fibre footprint in areas currently served by FTTN, is a key consideration in establishing **nbn**'s Benchmark Service Standards. It is critical that Benchmark Service Standards do not result in inefficiency through committing **nbn** to augmentation of copper services that are subject to fibre overbuild.

**nbn** acknowledges the close interaction between price controls and quality measures applicable to the **nbn**<sup>®</sup> network. This relationship was a key consideration that was discussed during the course of the ACCC convened working groups in the latter half of 2021 and industry engagement following the March Variation, where discussions included the role of the SAU in capturing service or quality standards regarding the expected performance of services on the network. It is a standard practice within utility regulation that a network provider's prices are attached to a certain level of service quality – to ensure that the operator does not reduce service performance below the level reasonably expected by end-users in order to reduce costs and increase margins.

While **nbn** is not an unconstrained monopoly broadband provider, and faces increasing and evolving competition in its commercial operations (as discussed in chapter 3 of Part A of this Submission), **nbn** considers it is important that end-users (and RSPs) have safeguards regarding expected service quality. Government policy supports this view, with the SIP framework enabling the Minister to make standards, rules and benchmarks in relation to the service performance and service levels provided by superfast broadband network operators who have been designated as SIP for a particular area (e.g., connection and repair timeframes, appointment keeping and broadband speed). This is also supported by requirements placed on **nbn** under the Government's Telecommunications in New Developments Policy. The **nbn**<sup>®</sup> network is the largest fixed line broadband network in Australia, built to bridge the digital divide and enhance the digital access and capability of all Australians, and



accordingly its RSPs and end-users rely critically on it. Having delivered on the commitment to make high-speed broadband available to all Australians, it is imperative that the network's performance is maintained into the future.

The Variation addresses the interaction between price and quality, and safeguards service quality expectations, by ensuring that a set of Benchmark Service Standards will apply for each Regulatory Cycle. For the First Regulatory Cycle, the proposed service standards cover the following key areas: (1) a comprehensive suite of service levels based on WBA4 commitments, covering areas such as connection, assurance, appointments, notifications, network availability and peak speeds (see section 10.2); (2) commitments to maintain operational reporting based on existing WBA4 commitments, including service level, stop-the-clock and fixed wireless reporting (see section 10.3); and (3) a network utilisation commitment that effectively replaces the implied quality outcomes that have previously been achieved through two-part AVC/CVC pricing (see sections 0 to 10.5).

In response to ACCC and RSP concerns with the proposed reporting commitments in the March Variation, and the ACCC's indication that it is considering separate Record Keeping Requirements targeted at overall network performance, **nbn** has withdrawn the network performance reporting commitments contained in section 1H.6 and 3D.2 of the March Variation. However, to support further consideration of network performance reporting commitments by the ACCC, **nbn** has set out potential key reporting items that may be appropriate for inclusion in any Record Keeping Requirements (see section 11).

## 10.1 nbn's network investment strategy and service quality

The core strategy for increasing service standards on, and reliability of, the **nbn**<sup>®</sup> network over time is the investment in upgrading copper services to fibre. The various upgrade initiatives that **nbn** has committed to are not only designed to deliver increased availability of higher speed tiers, but also further enhance the reliability of the network and address the stability concerns that RSPs have reiterated through the SAU variation process. Currently, as part of the fibre upgrade initiatives announced by the Government in September 2020,<sup>6</sup> **nbn** has completed local fibre network builds to enable FTTP connections for approximately 535,000 premises currently served by copper access technologies. Building is under way to cover more than 694,000 additional FTTN premises, with a further 732,000 premises in the design phase, and with a further 707,000 FTTC premises able to upgrade to fibre. This excludes the 1.5 million premises announced for FTTP overbuild in October 2022, with the local fibre network build for these premises expected to be delivered by the end of 2025.<sup>7</sup>

**nbn**'s network strategy prioritises this evolution of the network. Enhanced service level commitments should be assessed for their impact on **nbn**'s ability to continue upgrading and maintaining the network. While it is essential that end-users continue to receive a service that meets their expectations, and **nbn** is committed to continual improvement of services for all end-users, it is important that **nbn** does not introduce and entrench higher service standards on those access technologies that are subject to overbuild if such commitments would divert capex that

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<sup>6</sup> Minister for Finance, *\$4.5 billion NBN investment to bring ultra-fast broadband to millions of families and businesses and create 25,000 jobs*, Media release, 23 September 2020: <https://www.financeminister.gov.au/media-release/2020/09/23/45-billion-nbn-investment-bring-ultra-fast-broadband-millions-families-and-businesses-and-create-25000-jobs>.

<sup>7</sup> Minister for Communications, *1.5 million homes and businesses to gain access to NBN fibre under Labor*, Media release: <https://www.michellerowland.com.au/news/media-releases-communications/1-5-million-homes-and-businesses-to-gain-access-to-nbn-fibre-under-labor/>.



is more efficiently spent on upgrading the network over time, or would impact **nbn**'s ability to maintain the network to meet existing service quality commitments.

As part of the Variation, therefore, **nbn** has considered targeted service quality enhancements to identify if these are consistent with the network investment strategy and would not introduce substantial cost that drives increased prices. Changes that **nbn** considers can be introduced as part of the Variation consistent with the network investment strategy are set out in sections 10.2.3.1 to 10.2.3.3. Examples of additional changes considered, but that would drive inefficient expenditure, are set out in sections 10.2.3.4 and 10.2.3.5. In particular, **nbn** has included the following enhanced commitments as part of the SAU's Benchmark Service Standards:

- lowering the dropout threshold for a service incident to be treated as a fault from >9 to >7 dropouts in a 24-hour period;
- reducing the timeframe for **nbn** to complete a CVC modification or an Access Component modification from one Business Day to four Operational Hours; and
- lifting the performance objective for **nbn** to issue completion advices to RSPs.

The ACCC has emphasised in its review of the March Variation that **nbn** should be incentivised to enhance service quality on the network, specifically where there is a demonstrated willingness to pay. Notwithstanding **nbn**'s focus on upgrading copper access technologies to fibre, **nbn** is committed to continued enhancement of all services on the network and considers that the Variation provides a strong incentive in this respect. In addition to commercial incentives that **nbn** faces from competing fixed line and fixed wireless networks, the powers of the ACCC in relation to Benchmark Service Standards (discussed further in section 10.2) provide a clear impetus for **nbn** to continue to drive improvements on the network to meet consumer expectations.

## 10.2 Benchmark Service Standards

Under the Variation, RSPs will have enhanced confidence in the long-term service quality of **nbn**'s services through a suite of Benchmark Service Standards that apply for each Regulatory Cycle.

### 10.2.1 Benchmark Service Standards Mechanism

Under the RMA process **nbn** will propose to the ACCC Benchmark Service Standards to apply for each Regulatory Cycle (i.e., three to five years). The SAU gives the ACCC the power to set the Benchmark Service Standards that will apply for each Regulatory Cycle as part of an RMD, which may be the same or different to the service standards proposed by **nbn** in its RMA. **nbn** will then be required to offer in its SFAA service standards that are no less favourable to access seekers than the regulated benchmark that has been established for the Regulatory Cycle, establishing an express link between the prices for that Regulatory Cycle and the services that **nbn** will be committed to offering.

There are three key avenues for the Benchmark Service Standards to be updated during a Regulatory Cycle:

1. **Systemic issue:** The SAU gives the ACCC the power to set new or amend existing Benchmark Service Standards where there are systemic issues that result in a recurring material adverse impact on RSPs' access to **nbn**<sup>®</sup> Ethernet services if **nbn** is not taking reasonable steps to address those issues.<sup>8</sup> This responds to RSP

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<sup>8</sup> Variation, cl 21.2.2.



and ACCC concerns that Benchmark Service Standards should not prevent the ACCC from addressing unforeseen circumstances, and that appropriate regulatory safeguards continue to exist.

2. **Supporting retail-level regulation:** In the event that RSPs are subject to new or changed mandatory retail regulations that necessitate a change to the existing Benchmark Service Standards for RSPs to be capable of complying with the relevant regulations, **nbn** would be required to amend the Benchmark Service Standards to support retail level obligations.<sup>9</sup> While **nbn** would expect to deliver such changes through commercial WBA negotiation without the need for ACCC intervention, this power would provide an appropriate safeguard in the event that the parties are unable to agree changes that enable RSPs to meet their legislative and regulatory obligations. The ACCC would be able to notify **nbn** of a specified retail regulation that necessitates a change to the Benchmark Service Standards. **nbn** would then be required to submit to the ACCC for approval a response which includes any changes **nbn** proposes to the Benchmark Service Standards. If the ACCC rejects **nbn**'s response, the SAU gives the ACCC the power to make changes to the Benchmark Service Standards necessary for RSPs to be capable of complying with the retail regulation.
3. **Commercially negotiated improvements:** **nbn** maintains that commercial negotiations are the most effective means through which to evolve service standards in a way that responds to end-user and RSP concerns while acknowledging the additional cost, process and systems changes that enhanced service standards can place on both **nbn** and RSPs. While the updated Variation ensures that appropriate benchmarks are established for each Regulatory Cycle, it is important that the Benchmark Service Standards can incorporate benefits or required changes that are agreed between **nbn** and RSPs mid-cycle where appropriate. Not all amendments to service standards in the WBA will necessitate a change to the Benchmark Service Standards, but the Benchmark Service Standards must ensure that evolution of service standards through commercial negotiation is not inhibited.

## 10.2.2 First Regulatory Cycle

Subject to the enhancements discussed in section 0 and the updated utilisation management commitment described in section 10.5, the Benchmark Service Standards that will apply for the first Regulatory Cycle commencing 1 July 2023 will reflect key WBA4 service levels, associated rebates, performance objectives and corrective action – as summarised in Table C1 below.

**Table C1. Key WBA4 service levels and performance objectives**

Service Levels	Performance Objectives
<ul style="list-style-type: none"> <li>• End User Connections (Standard, Priority Assistance, Accelerated, Service Transfers)</li> <li>• End User Connection Appointments</li> <li>• End User Fault rectification (Standard and Priority Assistance)</li> <li>• End User Fault rectification Appointments</li> <li>• Performance Incidents</li> <li>• Activation of CVC/NNI product components</li> <li>• Access component modifications <i>[amended]</i></li> </ul>	<ul style="list-style-type: none"> <li>• End User Connections (Standard, Priority Assistance, Accelerated, Service Transfers)</li> <li>• End User Connection Appointments</li> <li>• End User Fault rectification (Standard and Priority Assistance)</li> <li>• End User Fault rectification Appointments</li> <li>• Performance Incidents</li> <li>• Network Faults</li> <li>• Activation of CVC/NNI product components</li> </ul>

<sup>9</sup> Variation, cl 21.2.2.



Service Levels	Performance Objectives
<ul style="list-style-type: none"> <li>Connectivity component modifications <i>[amended]</i></li> <li>Trouble Ticket management</li> <li>Access component disconnection</li> </ul>	<ul style="list-style-type: none"> <li>Access component modifications <i>[amended]</i></li> <li>Connectivity component modifications <i>[amended]</i></li> <li>Completion Advices <i>[amended]</i></li> <li>Interference Mitigation</li> <li>Trouble Ticket management</li> <li>Access component disconnection</li> <li>Network Availability</li> <li>Network Utilisation <i>[amended]</i></li> </ul>

The existing rebates associated with these service levels will also be embedded as minimum commitments for the First Regulatory Cycle:

- Connection and Fault rectification rebates
- Appointment rebates
- PIR Objective Rebate
- FTTB/N/C Connection Performance Rebate
- Wireless Speed Performance Rebate

Existing WBA4 corrective action commitments will also be included in the Benchmark Service Standards.

Consistent with ACCC views in its summary of the working groups convened in the latter half of 2021, a comprehensive suite of service levels based on WBA4 provides the appropriate baseline for the First Regulatory Cycle. **nbn**'s proposed price points and price controls for this Regulatory Cycle are based on **nbn** continuing to meet these service levels. While **nbn** appreciates RSPs have advocated for the SAU to incorporate enhanced service standards (relative to WBA4), and **nbn** is committed to working with RSPs on continued improvements to end-user experience, the fundamental purpose of including Benchmark Service Standards in the SAU is to establish a price-quality link to ensure that the network operator is not incentivised to reduce service standards (as an alternative to increasing prices) in order to increase margins.

Notwithstanding that WBA4 provides the baseline on which **nbn** has determined its pricing for the first Regulatory Cycle, **nbn** has considered additional enhancements to the WBA4 commitments to identify if there are changes that would not result in a material cost impact for **nbn** and therefore require revisiting the price structure and levels proposed for the First Regulatory Cycle. Section 0 below sets out improvements made to the Benchmark Service Standards in comparison to WBA4, as well as additional enhancements that **nbn** has considered, which are not currently viable for embedding as part of the First Regulatory Cycle.

## 10.2.3 Enhancements to WBA4 service standards

### 10.2.3.1 Lowering the dropout threshold for faults

RSPs have advocated for increased performance commitments for copper-based services, particularly in relation to the FTTN access technology. Among the feedback received in the ACCC working groups and responses to the March Variation, a specific concern has been raised in relation to dropouts on the network and concerns that **nbn** does not accept faults for services experiencing less than 10 dropouts in a 24-hour period.<sup>10</sup>

<sup>10</sup> TPG Telecom, *Proposed variation to the NBN Co Special Access undertaking*, July 2022: <https://www.accc.gov.au/system/files/Submission%20-%20TPG%20-%20Public%20-%20NBN%20Co%20SAU%20Variation%20March%202022%20-%202022%20July%202022.pdf>; Optus, *Submission in response to ACCC Consultation Paper – Proposed variation to the NBN Co Special Access Undertaking*, July 2022: <https://www.accc.gov.au/system/files/Submission%20-%20Optus%20-%20Public%20-%20NBN%20Co%20SAU%20Variation%20March%202022%20-%202025%20July%202022.pdf>.



It is important to note that, while the current threshold for **nbn** to determine that a service incident qualifies as a Service Fault is >9 dropouts in a 24-hour period, under WBA4 **nbn** introduced the Performance Incident framework. Under this framework, RSPs can lodge a service incident in relation to FTTN and HFC services that experience between four and nine dropouts in a 24-hour period. **nbn** then commits to undertake investigation and rectification work where it is identified that such remediation can be undertaken and will enhance the performance of the service. This Performance Incident framework is often overlooked in discussions regarding the dropout threshold, notwithstanding that it still involves truck rolls and potentially extensive network investigation/remediation on **nbn**'s part.

While **nbn** and RSPs are aligned in seeking continual improvement for service performance, it is necessary to recognise that enhanced service commitments attract increased assurance cost. Even in the absence of rebates, the Performance Incident Framework entails truck roll and maintenance commitments and therefore significant operational cost.

It is essential that any further commitments do not expose **nbn** to unreasonable cost impacts that could require revisiting **nbn**<sup>®</sup> Ethernet prices. This would detract from a key objective of the Variation, being to deliver increased price stability and certainty for RSPs and end-users; assurance commitments that necessitate prices above those in the Variation would not deliver on this objective.

It is also important that dropout thresholds are set at levels that ensure **nbn**'s resources are able to be efficiently deployed to address significant customer-impacting Performance Incidents and Service Faults, rather than on transient issues or where further diagnostics are required to determine the most appropriate response (which could include actions by either the RSP or end-user). There are a range of factors that can impact the performance of an end-user's service and setting thresholds too low could result in technicians unable to prioritise those services experiencing substantially degraded performance that require immediate attention from **nbn**.

It is in this context that **nbn** has considered the potential of lowering the dropout threshold for faults. In response to RSP concerns, **nbn** is proposing to lower the dropout threshold for faults to >7 within a 24-hour period (from >9). This commitment does increase **nbn**'s exposure to truck roll and rebate costs for FTTN and HFC services. However, **nbn** has assessed that the potential increase in costs is appropriate when balanced against the benefits that this reduced threshold will bring for end-users on the network.

**nbn** remains reliant on RSPs continuing to undertake enquiries through the Service Health Summary Tool before logging a trouble ticket – to identify whether or not the potential fault or incident is likely to be an actual Service Fault or Performance Incident. This is important so that, in the case of unexpected dropouts, trouble tickets are lodged in relation to those services where the Service Health Summary Tool actually reflects a dropout in the **nbn**<sup>®</sup> network and to mitigate inefficient allocation of technicians to investigate service interruptions caused by factors outside the network (e.g., customer equipment or in-home wiring).

### 10.2.3.2 Lifting the performance objective for service modifications

As part of its WBA4+ offer issued in October, **nbn** has proposed enhancing existing service modification service levels. Specifically, the timeframe for **nbn** to complete a CVC modification or an Access Component modification has been reduced from one Business Day to four Operational Hours. **nbn** now proposes that this improved service level forms part of the Benchmark Service Standards for the First Regulatory Cycle. This will provide RSPs with increased certainty regarding **nbn**'s ability to complete these activities and support customer requests associated with these modifications.



### 10.2.3.3 Lifting the performance objective for Completion Advices

In addition to the improvements to service modification service levels, **nbn** has also committed to improving the performance objective for Completion Advices as part of the Benchmark Service Standards for the first Regulatory Cycle. These improvements are set out in Table C2 below:

**Table C2. Improvements to performance objective for Completion Advices**

nbn® Ethernet Service Level	WBA SLS Reference	WBA4 Activity timeframe*	WBA4 Performance Objective	Benchmark Service Standard Activity timeframe*	Benchmark Service Standard Performance Objective
Completion Advice – End User Connection	4.1	30 min	70%	15 min	85%
Completion Advice – Service Transfer	4.2	30 min	90%	15 min	95%
		1 hour	95%	1 hour	99%

\* The timeframes within which Completion Advices are delivered – measured from the time of completion of the End User Connection or service transfer as applicable.

These enhancements shorten specific performance objective timeframes within which **nbn** is expected to notify RSPs of a completed connection or transfer (from 30 minutes to 15 minutes) with associated enhancements in the proportion of Completion Advices that are expected to achieve these designated timeframes and the existing one-hour performance objective.

### 10.2.3.4 Consideration of an AVC-level congestion metric

Given the introduction of TC-4 Flat-Rate pricing under the Variation, **nbn** has considered whether a quality metric could be introduced that establishes congestion-based performance commitments at an AVC level. There are challenges with introducing such a quality commitment as part of the Variation and it is pre-emptive to introduce such a commitment without experience of TC-4 Flat-Rate Offers on the **nbn**® network. The utilisation management commitment (discussed in section 10.5 below) provides an appropriate quality baseline to ensure that **nbn** continues to ensure sufficient capacity on the network to meet consumer expectations, recognising that **nbn** and RSPs may in future consider whether this should be replaced with an AVC-level metric.

### 10.2.3.5 Consideration of additional rebates on copper access technologies

In response to RSP concerns with the stability and speed range of copper-based services, **nbn** has reviewed whether the Benchmark Service Standards could include additional rebates for scenarios not captured under the existing PIR Objective Rebate, FTTN/B/C Connection Performance Rebate or Service Fault Rebate. These existing rebates already provide RSPs with rebates in the event that:

1. an FTTB/N/C **nbn**® Ethernet TC-4 service is not capable of achieving its PIR Objective and is designated for a Network Activity (i.e., network remediation);<sup>11</sup>

<sup>11</sup> See, section 5.1 of the WBA **nbn**® Ethernet - Service Levels Schedule. The PIR Objective Rebate does not apply to an **nbn**® Ethernet (FTTC) Ordered Product with an AVC TC-4 bandwidth profile of 25 Mbps PIR (TC-4) downstream and 10 Mbps PIR (TC-4) upstream or higher, unless the Line Rate at the **nbn**®



2. a service does not meet its Downstream Performance Threshold following connection;<sup>12</sup> or
3. a Service Fault (including where a service exceeds the specified dropout threshold in a 24-hour period) is not rectified within the applicable Service Level.<sup>13</sup>

The purpose of these rebates is to ensure that customers receive the service ordered or are appropriately compensated where the service does not perform in accordance with its technical specification. **nbn** considers that these rebates are based on appropriate service quality metrics for copper services which, by their nature, are subject to varying levels of speed capability and line stability.

In determining the Benchmark Service Standards proposed for the First Regulatory Cycle, **nbn** assessed the costs of extending rebates to additional scenarios including rebates for any line that measures below 100% of PIR where the rebate would be equivalent to the price difference between the ordered speed tier and the next speed tier down for which 100% of the PIR could be met. The indicative estimate for implementing this rebate is approximately \$90 million per annum based on existing **nbn**<sup>®</sup> Ethernet pricing, increasing to approximately \$180 million based on the updated pricing introduced under the Variation.

There are two concerns that arise if **nbn** were to introduce a rebate that would incur costs of this magnitude. First, these costs would need to be reflected in increases to the price points for TC-4 Flat-Rate and TC-4 Bundled Offer services. This would be inconsistent with RSP views that **nbn** seeks to reduce/stabilise prices for **nbn**<sup>®</sup> Ethernet services, a core tenet of the Variation. Second, those costs would be more effectively directed to fibre upgrade initiatives, consistent with **nbn**'s overall network investment strategy. Further, providing a speed range is consistent with how copper-based services are typically priced in Australia and internationally.

#### 10.2.4 Price-quality link for specific speed tiers

In response to the proposed Benchmark Service Standards **nbn** shared in the July Discussion Paper, some RSPs have raised concerns that specific speed tiers are subject to a price increase under the Variation with no corresponding increase in service standards – in particular, the 50/20 Mbps speed tier. There are three key points to note in relation to this concern.

First, the changes to regulated prices under the Variation cannot be effectively assessed in isolation. **nbn** has proposed the price structure, price points, and price controls based on the **nbn**<sup>®</sup> Ethernet product as a whole, seeking to deliver benefits to end-users and RSPs while still allowing **nbn** the opportunity to recover its efficiently incurred costs. This requires a balancing of price points across all **nbn**<sup>®</sup> Ethernet speed tiers, and the price movement on the 50/20 Mbps must be considered in that context. Focusing on the price change of a particular speed tier and questioning the associated change in service quality for that speed tier ignores the trade-offs that have already been made across the product suite as a whole (e.g., foregone CVC revenue on higher speed tiers in the short term and on lower speed tiers in future).

Second, if the price-quality link was assessed according to isolated speed tiers, it would suggest that **nbn** should be lowering its service standard commitments in relation to those speed tiers where the maximum price is being

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Downstream Network Boundary in respect of the relevant Premises is not capable of achieving the provision of an AVC TC-4 bandwidth profile of 25 Mbps PIR (TC-4) downstream and five Mbps PIR (TC-4) upstream.

<sup>12</sup> See, section 16 of the WBA **nbn**<sup>®</sup> Ethernet - Service Levels Schedule. Where the Connection Assured Rate is available in **nbn**'s Service Qualification system at the time of ordering, the service must also fall below the Connection Assured Rate to be eligible for the rebate.

<sup>13</sup> See, section 8.5 of the WBA **nbn**<sup>®</sup> Ethernet - Service Levels Schedule.





effectively lowered compared to the current SAU. This is clearly an undesirable outcome. Rather, the evolution of prices must be viewed as a whole – i.e., taking into account the changes for all **nbn**<sup>®</sup> Ethernet speed tiers.

Third, **nbn** continues to price below its ABBRR and requires ARPU increases to get to a point where its revenue eventually reaches its ABBRR. This was an underlying principle of **nbn**'s initial pricing and the SAU accepted in 2013, which was premised on ARPU being initially driven by AVC revenue but growing over time through CVC revenue as usage of the network increased.<sup>14</sup> To require that price increases of a specific tier must be accompanied by corresponding increases in quality commitments would ignore the fact that **nbn**<sup>®</sup> Ethernet prices were introduced below cost in order to encourage early take-up, reduce any price shocks as end-users migrated from legacy networks, and to maximise efficient use of the network – while allowing for revenue growth over time as end-users placed greater value on the network.

Rather than viewing specific price movements as a price increase with no change in service quality, it is important to acknowledge that the new price points are a consequence of the introduction of TC-4 Flat Rate pricing (in response to RSP concerns regarding the long-term viability of usage charges). **nbn** has responded directly to sustained industry concerns by the proposed removal of TC-4 CVC charging on all services by July 2026 but, in doing so, must also ensure that it retains the opportunity to recover its efficiently incurred costs. This is important not only so that **nbn** can meet its mandate to operate as a standalone commercial entity, but also so that it can earn revenues sufficient to maintain and upgrade the network for the benefit of all end-users.

## 10.3 Benchmark Service Standards reporting commitments

### 10.3.1 WBA4 service level reports

In response to ACCC concerns that **nbn** should ensure service level, stop-the-clock and line rate reporting is protected, **nbn** has included these as part of the Benchmark Service Standards for the First Regulatory Cycle. A summary of the key reports that are captured in the Benchmark Service Standards is set out below:

1. **Performance Reporting:** **nbn** will continue to provide RSP reports that set out its performance against WBA service levels (consistent with section 18.1 of the **nbn**<sup>®</sup> Ethernet - Service Levels Schedule today).
2. **Supplementary Service Level Reporting:** **nbn** will continue to provide Supplementary Service Level Reports that provide further detail regarding its performance against WBA service levels, including the Aggregated Report, Stop-the-Clock Report and WBA Performance Reporting Line Level data (consistent with section 9.3.1 of the WBA Operations Manual today).
3. **NBN Co Wireless Network Performance Reporting:** **nbn** will continue to provide Wireless Performance Reports regarding the performance of cells and transmission backhaul links (consistent with section 9.3.2 of the WBA Operations Manual today).
4. **Line Rate and Information Rate Reporting:** **nbn** will continue to provide daily Line rate and information rate reports for FTTB, FTTN and FTTC services (consistent with section 9.3.3 of the WBA Operations Manual today).

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<sup>14</sup> NBN Co, *Supporting Submission NBN Co Special Access Undertaking*, 28 September 2012, p. 100:

<https://www.accc.gov.au/system/files/Supporting%20Submission%20-%20NBN%20Co%20Special%20Access%20Undertaking.pdf>.



5. **Utilisation Management Commitment Reporting:** nbn will introduce reporting in relation to shared network resources that exceed the Utilisation Threshold discussed (see section 10.5.4 below).

This operational reporting goes beyond what nbn considers should be the focus of service levels within the SAU (ensuring a price-quality link is established and maintained). Given the need for flexibility around operational processes and data, operational reporting commitments are best addressed through the WBA, rather than being embedded under the SAU where any change to the reporting commitments will take longer to effect. However, nbn has included these particular reports in the Benchmark Service Standards to provide the ACCC and RSPs with enhanced confidence that this reporting will be maintained given the value placed on this by RSPs and the ACCC.

### 10.3.2 Commitment to continued operational improvements outside SAU

While nbn understands the need to provide RSPs with appropriate information to support RSP interactions with customers and has included the operational reporting commitments discussed in 10.3.1 as part of the Benchmark Service Standards, further enhancements in this area are best addressed through PDF consultation and commercial negotiation rather than through embedding new operational requirements under the SAU.

Under the existing SAU framework, nbn has continued to develop enhancements to operational systems to support RSPs in ensuring that customers receive the service that they pay for. The various operational and reporting enhancements that nbn has introduced include:

- **Site Qualification (SQ) Estimated Speed (Layer 2 Estimated Line Rate upstream and downstream):** This functionality is available by performing a site qualification for a location in respect of available nbn products (and is typically utilised by RSPs at the point of sale). It provides an estimate of the performance capability of the network for a FTTN, FTTB or FTTC location for RSPs. An estimation is needed for these copper-based networks as nbn cannot definitively determine performance capability on individual links of such a network while it is not delivering an active service.
- **Dynamic Site Qualification (DSQ):** This functionality utilises an interpolation of 21 days of observed service performance data once a service has been activated, which enables nbn to update the SQ estimates for the relevant downstream and upstream achievable line rate at that location. The observed line rate data is translated into the new DSQ estimated speed range, which replaces the minimum and maximum SQ estimated speed range values otherwise provided.
- **Actual Layer 1 Data Rate Downstream/Upstream (FTTN/FTTB/FTTC), and Attainable Layer 1 Data Rate Downstream/Upstream (FTTN/FTTB, not relevant for FTTC):** This functionality is available via the nbn<sup>®</sup> Test & Diagnostics Platforms. It was built to enable RSPs to investigate performance and assure nbn<sup>®</sup> services. The functionality can be used by RSPs to extract performance data for each of their active FTTN/FTTB/FTTC services. For FTTN and FTTB, the Line State Diagnostics (LSD) and Line Quality Diagnostics (LQD) tests retrieve the latest line rate information for a service. For FTTC, the DPU port status test enables this information to be retrieved. When initially introduced, this test enabled the RSP to test whether a service achieved the maximum rate for the 25-50/5-20 Mbps or 25-100/5-40 Mbps speed tiers. In March 2019 the test was enhanced to report on the actual line rates achieved.
- **Service Health Summary FTTN/FTTB/FTTC:** nbn's Service Health Summary Tool provides an improved and simplified interface via the nbn Service Portal and B2B Access via application programming interfaces (APIs) for retrieving service health information for a given service. This includes the relevant line rate information for FTTN, FTTB and FTTC services.



- **Weekly FTTN/FTTB/FTTC Speed Reports (per RSP):** nbn provides a weekly speed report to each RSP onboarded to acquire FTTB, FTTN and FTTC services. The report contains all the RSPs' services in operation. This report contains summary information of the Layer 1 speeds that each FTTN and FTTB service is achieving on the nbn® network measured for each service. This provides RSPs with an ongoing summary of the performance of their services without the need to query the nbn Test and Diagnostics or SQ platforms where the information is also available.
- **Enhanced Weekly FTTN/FTTB Service Reports (per RSP):** This report provides RSPs with an enhanced version of the weekly line rate reporting. This includes additional fields, including the seven-day rolling average of the downstream and upstream attainable line rates for each service as well as new fields that estimate the percentage of the theoretical optimal or maximum information rate for the provisioned speed tier range achieved by the service based on the downstream seven-day rolling average attainable net data rate. For example, a 25-100/5-40 Mbps service achieving an average attainable net data rate of 80 Mbps in the downstream would be reported as achieving approximately 80% of the maximum information rate for the provisioned speed tier.
- **FTTN/FTTB/FTTC Service Health Reporting:** In June 2020, nbn made available the line rate information from the weekly line rate reporting in the new strategic Service Health Reporting framework. This enabled RSPs to move out of the historical file sharing portal and consume the information in modernised interfaces, including via APIs if desired, enabling improved integration of the report data into RSP systems and processes. The reports also made the data available daily rather than weekly, with RSPs able to retrieve up to 30 days of historical records. In April 2021, nbn introduced the rolling seven-day average actual line rates downstream and upstream for FTTC Service Health Reporting.
- **RSP Live Chat:** In September 2021, nbn introduced live chat for RSPs to interact with nbn, enabling greater responsiveness and CX for RSPs and end-users.
- **Complex Addressing:** nbn has improved address search functionality that mitigates address search errors, which has reduced fallout and incorrect truck rolls which can lead to activation delay.
- **Additional reports in Customer Centre:** nbn has introduced additional reporting in Customer Centre to provide RSPs with insights into key information, including gaming data, plan matching reports, service health reports and data usage trends.

The above list is only a subset of the operational processes that nbn has introduced (under the existing SAU and WBA) in order to support RSP interactions with end-users, and overall customer experience.

nbn maintains that the Variation should not be used to embed additional commitments in relation to operational support systems and processes. These systems and processes are dynamic and are continually updated to keep pace with evolving RSP demands. However, the SAU contains commitments about ordering and assurance systems (the NBN Co Platform Interfacing Service), and RSPs are protected from changes that would remove or negatively impact existing service portal and B2B functionality through the existing PDF consultation requirements and product withdrawal requirements under the SAU.



## 10.4 Transition of CVC TC-4 from CIR to PIR

The suite of service standards described in section 10.2 are intended to reflect existing service standards on which **nbn** provides **nbn**<sup>®</sup> Ethernet. These service standards (e.g., activations, assurance, appointments, peak speeds, network availability) are essentially unaffected by the evolving product and pricing construct, and it is against this existing baseline that **nbn** has determined the proposed prices and price controls under this Variation. There is, however, a quality criterion that requires re-evaluation as a result of the evolution in the product and pricing construct – capacity on the network.

Under the changes captured in the Variation, CVC TC-4 will be provisioned on a PIR basis (excluding CVC TC-4 for Satellite which will remain on CIR). This change is needed for the implementation of NNI overbooking (as described in section 10.4.2) which delivers traffic management efficiencies for RSPs and will help maximise the benefits of utilisation-based billing (discussed in section 10.4.1).

### 10.4.1 Zero-rating CVC for TC-4 Flat Rate Offers and introduction of utilisation-based billing

As discussed in chapter 7 of Part B of this Submission, **nbn** has addressed RSP needs for long-term pricing certainty through the introduction of TC-4 Flat-Rate Offers and TC-4 Bundled Offers, and the introduction of utilisation-based billing for TC-4 Bundled Offers. With utilisation-based billing, overage for TC-4 Bundled Offers will be charged based on the capacity utilised by the TC-4 Bundled Offers rather than CVC capacity that is provisioned. This provides a benefit by enabling the same CVCs to be used by RSPs for all (non-satellite) TC-4 services regardless of whether they are supplied under TC-4 Flat-Rate Offers or TC-4 Bundled Offers. RSPs do not have to specify how much capacity is being provisioned for TC-4 Flat-Rate Offers and TC-4 Bundled Offers to enable different billing treatment. Instead, for billing purposes **nbn** will only measure capacity utilised by TC-4 Bundled Offers.

RSPs will continue to be responsible for ordering CVC in relation to all **nbn**<sup>®</sup> Ethernet services, including TC-4 Flat-Rate Offers. Retaining CVC as a product and network construct provides RSPs choice on how they wish to manage their network. RSPs will have the choice of managing CVC bandwidth traffic as per today (actively forecast and provision CVC on a regular basis), or instead RSPs may prefer to 'set and forget' CVC at the maximum bandwidth available and minimise CVC management and AVC grooming between CVCs (with the latter option significantly reducing RSPs' needs to actively forecast and manage CVC provisioning). In addition to reducing operational resourcing for CVC management, this is expected to reduce RSP costs through removing the potential that RSPs will pay for unused capacity provisioned to meet unpredictable, unforeseen demand where the RSP has taken advantage of the TC-4 Flat-Rate Offers.

### 10.4.2 Overbooking of CVC TC-4 on NNI Group and V-NNI capacity

In order to maximise the benefits of TC-4 Bundled Offers, TC-4 Flat-Rate Offers, and utilisation-based billing, and to promote efficient use of the network, **nbn** has proposed introducing the ability for RSPs to over-provision aggregate CVC TC-4 bandwidth such that the sum of the TC-4 CVC bandwidth may exceed capacity of the NNI. This will increase the potential for more efficient use of the RSP network connectivity to the **nbn**<sup>®</sup> network, and reduce the need for RSPs to order additional NNI unless aggregate end-user utilisation requires an increase in NNI capacity.

This is shown in Figure C1 below. Today, total CVC bandwidth cannot exceed capacity of the associated NNI Group. For example, an RSP may connect 10 CVCs of one Gbps each to a 10G NNI as the combined CVC total is equivalent to the capacity of the NNI. This may result in inefficiencies as the RSP maintains headroom for peak utilisation in each CVC and also cannot take advantage of multiplexing of traffic across CVCs through the NNI. For example, a CVC with low utilisation at a given moment cannot share capacity with CVCs operating at full bandwidth on an NNI.

Under the amended construct, the total bandwidth of all TC-4 CVCs connecting to an NNI may exceed the capacity of that NNI Group or V-NNI. The expected benefit to RSPs is enabling more control of experience, optimising the use of existing NNI capacity and potentially reducing the need for AVC migrations between CVCs for grooming purposes, thereby reducing RSP costs. While there may be RSP-specific factors that lead RSPs to not overbook TC-4 CVCs on an NNI (e.g., systems changes), **nbn** views enabling the capability to overbook as an important benefit accompanying the TC-4 Flat-Rate Offers and TC-4 Bundled Offers that are committed to in the Variation. **nbn** will consult in more detail regarding the implementation of TC-4 CVC Overbooking on NNI as part of the WBA5 Consultation.

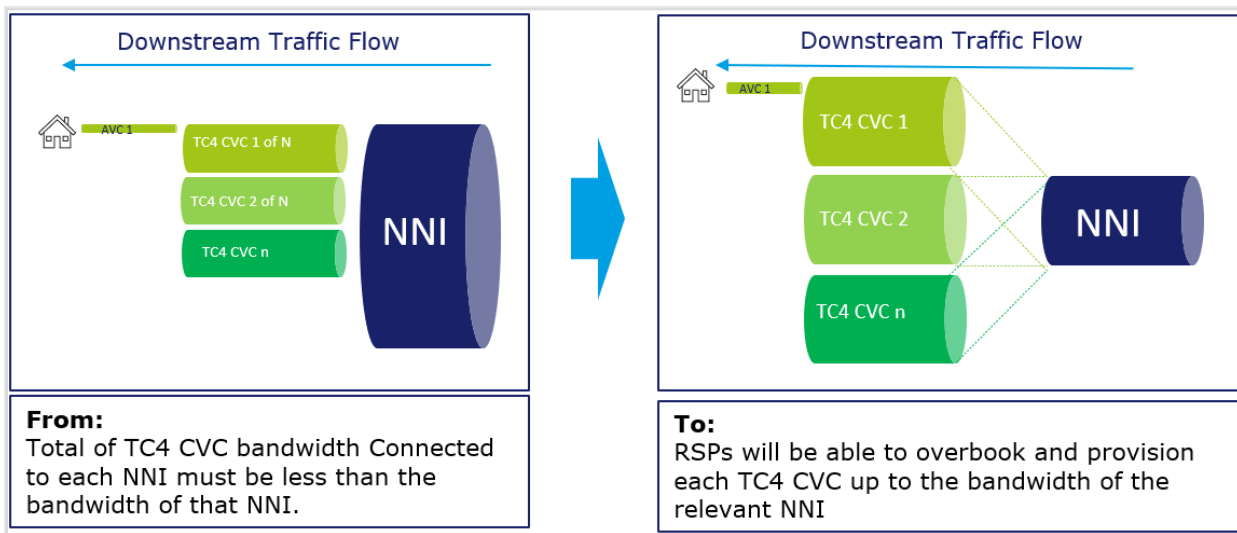


Figure C1. CVC to NNI bandwidth mapping, before and after overbooking of CVC TC-4 on an NNI

### 10.4.3 Response to industry feedback

In feedback to the March Variation, a concern was raised regarding changing CVC TC-4 from CIR to PIR - with the view that it could allow **nbn** to congest the CVC network.

As outlined above, the transition of CVC TC-4 to be delivered as PIR is a consequence of the change to overbooking of TC-4 CVC on NNI, which enables efficiencies for the connection between RSPs and **nbn**, and maximises the benefits of utilisation-based billing – through reducing the need for additional NNIs. For example, with utilisation-based billing it will be possible for CVC sizes to increase significantly as RSPs no longer need to purchase ‘just enough’ bandwidth to control their costs. RSPs will have the opportunity to use much larger CVCs, using the CVC only for scaling the AVCs into the NNI. To support these larger CVCs and enable overbooking of the NNI for efficiency, CVC TC-4 capacity must be shared with other CVCs across the NNI and hence must be PIR. This change to CVC TC-4 is included in the Variation and **nbn** proposes to make consequential changes to the WBA as part of a package of changes to implement the Variation upon its acceptance.



**nbn**'s view is that the concern raised in relation to the potential for **nbn** to congest the network is addressed through **nbn**'s network utilisation management commitment (discussed in section 10.5 below). The potential contention point as a result of the change to CVC TC-4 from CIR to PIR is the underlying capacity of the **nbn** transit network. It is therefore important that the capacity of the transit links continues to accommodate potential usage demands on the network, without creating capacity commitments that would generate inefficient investment in the network. The quality commitment described in section 10.5 ensures that **nbn** will continue to manage and augment the network to provide sufficient capacity in the delivery of services notwithstanding TC-4 CVC being supplied on a PIR basis.

Note that CVC TC-4 for satellite is excluded from these changes and will continue to be provisioned as CIR.

## 10.5 Network utilisation management commitment

The network management practices implemented by **nbn** to date have allowed **nbn** to deliver a world-class network with negligible network congestion, even under the 35%+ increase in traffic experienced during COVID-19 lockdowns in 2020 and 2021. This is evidenced by congestion figures that are reported under **nbn**'s Monthly Progress Report, which show that over the 12-month period from 1 January 2020 approximately 0.0637% of premises on the fixed line network may have experienced some degree of congestion unrelated to RSP decisions of CVC provisioning, a figure that is reduced to 0.0068% over the 12-month period from 1 January 2021, and to 0% over the eight-month period from 1 January 2022.<sup>15</sup>

The impact on **nbn**'s transit links of the transition to TC-4 Flat-Rate pricing, utilisation-based billing and overbooking of TC-4 CVC on NNI is difficult to accurately predict, but it is critical the SAU establishes an appropriate service quality metric that:

- **provides confidence in the ongoing capacity of the network:** the service quality commitment should ensure that RSPs and end-users continue to have access to a service that meets customer expectations. The commitment should provide appropriate incentive for **nbn** to continue augmenting capacity in the network to address increasing demand on the network;
- **avoids inefficient investment in the network:** while ensuring there is appropriate headroom in the transit network, it is important that the service quality commitment does not require capacity augmentation before it is reasonably required. This could lead to inefficient capex spend if **nbn** is obliged to increase transit capacity too early or in response to infrequent or unreasonable use of the network; and
- **operates at an appropriate level of the network:** the SAU should contain a service quality commitment that is effective but not overly prescriptive in relation to service performance. Service offerings evolve over time, and it would be counterproductive for the SAU to lock in the specifics of these offerings, potentially inhibiting changes that could be in the interests of customers and the industry more broadly. In the future, to the extent that **nbn**'s proposed changes removed functionality or features of an existing service offering, the product withdrawal provisions of the SAU provide an essential protection for RSPs and end-users.

To achieve this **nbn** has established the utilisation management commitment set out in section 10.5.1 below. **nbn** considers that this quality commitment strikes the appropriate balance of providing RSPs and end-users with confidence in minimal congestion on the **nbn**<sup>®</sup> network, avoiding inefficient investment, and operating at a sufficiently high level to allow **nbn**<sup>®</sup> Ethernet to evolve in response to industry and end-user needs over time.

<sup>15</sup> See: <https://www.nbnco.com.au/corporate-information/about-nbn-co/updates/dashboard-october-2022> (accessed 1 December 2022).



## 10.5.1 Utilisation management commitment

In recognition of the importance to RSPs and end-users of the reliability and scalability of the **nbn**<sup>®</sup> network, particularly with the introduction of TC-4 Flat-Rate Offers, and utilisation-based billing for CVC TC-4, **nbn** will introduce new commitments in the SAU requiring **nbn** to take corrective measures where utilisation of its shared network resources exceeds a specified threshold. Specifically, these commitments will apply where utilisation of certain shared network resources in the transit backhaul network exceeds 90% for 30 minutes or more on three separate days in a 30-day period.

**nbn** also commits in the SAU to produce regular reporting regarding **nbn**'s network augmentation activities to give RSPs confidence that **nbn** is continuing to invest in the **nbn**<sup>®</sup> network, and to introduce additional systems reporting related to the utilisation management commitment if there is a demonstrable need for this in future.

The Benchmark Service Standards include a utilisation management commitment in relation to the transit backhaul component of the **nbn**<sup>®</sup> network.<sup>16</sup> Under the Variation the utilisation commitment will apply to the following shared network resources within the transit backhaul component of the fixed line and fixed wireless networks:

- **NBN Co Fibre Network and NBN Co FTTC Network:** Network between the POI and the optical line terminator.
- **NBN Co FTTB Network and NBN Co FTTN Network:** Network between the POI and the access aggregation switch.
- **NBN Co HFC Network:** Network between the POI and the cable modem termination system.
- **NBN Co Wireless Network:** Network between the POI and the combined packet gateway.

To avoid doubt, the references to the POI above refer to the I-NNI component of the Aggregation Node (located in the POI) as depicted in Figure C2 below.

Under the utilisation management commitment, if utilisation of a shared network resource exceeds a 90% Utilisation Threshold (according to the calculation methodology set out in section 10.5.2.1), **nbn** must within 15 Business Days return the shared network resource to below the Utilisation Threshold, subject to certain exclusions (e.g., that network use is inconsistent with the WBA or one-off network events such as fail-over to a reduced capacity secondary link). The 90% threshold is not intended to function as the business-as-usual trigger for **nbn** to commence augmentation on all shared network elements. Rather, **nbn** will continue to monitor and manage shared network resources with the aim of ensuring they do not exceed the 90% threshold. However, the utilisation commitment will operate to ensure that augmentation occurs within an appropriate timeframe in the event that this threshold is exceeded.

This commitment will be accompanied by reporting on shared network resources set out in section 10.5.4.

**nbn** considers that the utilisation commitment ensures a level of performance that strikes an appropriate balance between efficient use of the **nbn**<sup>®</sup> network and efficient investment in the network.

<sup>16</sup> The WBA also makes commitments regarding these components of the network, in section 15.4 of the **nbn**<sup>®</sup> Ethernet Service Levels Schedule and discussed in section 10.5.2.1. The WBA commitment will be aligned with the SAU utilisation management commitment following acceptance of the Variation.

## 10.5.2 Utilisation metric focused on transit network

As noted above, the inclusion of a utilisation metric within the SAU is a consequence of the transition in the pricing construct to include TC-4 Flat-Rate Offers and the change in the nature of TC-4 CVC from CIR to PIR. As CVC is a function of the transit network, it is appropriate that the utilisation metric is specific to this part of the network – identified in Figure C2 below.

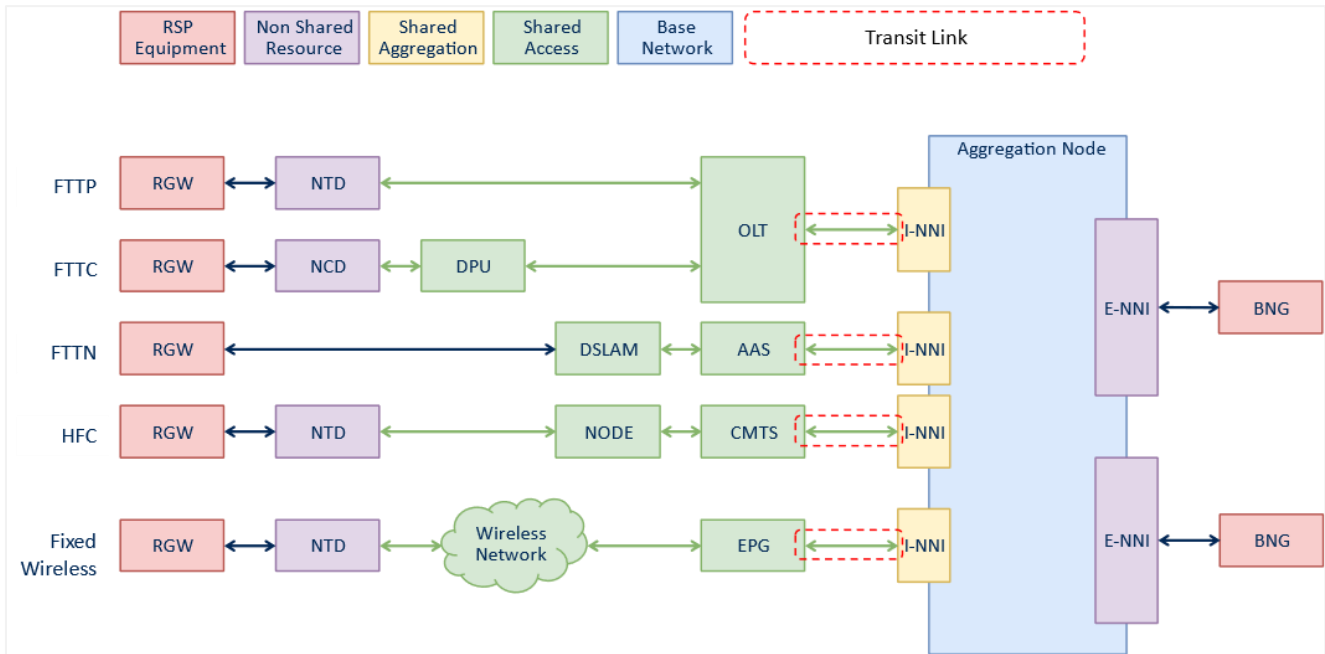


Figure C2. Transit network

In its industry roundtable summary released in June 2021, the ACCC noted that “aspects of technical quality have been controlled by access seekers via CVC and NNI purchase decisions. This includes the busy hour speed and other performance characteristics that access seekers can provide to their customers”.<sup>17</sup> This interpretation of the role of CVC, as an RSP-controlled determinant of service quality, is an accurate characterisation. The amount of CVC provisioned by RSPs in a given CSA will impact the bandwidth available to each service in that CSA.

As noted, CVC will still be ordered by RSPs under the existing operational process and therefore RSPs will still control the level of CVC available to their customers in a particular CSA. However, as CVC TC-4 will no longer be provisioned on a CIR basis, there will be an enhanced focus on the NNI capacity provisioned by the RSP and the capacity **nbn** provides at this part of the network. If the transit links or shared network resources identified in section 10.5.1 are provisioned with sufficient capacity, the transition of higher speed tiers to TC-4 Flat-Rate Offers and transition of CVC TC-4 to PIR will not result in a degradation in the performance of these services, assuming the NNI has been provisioned with sufficient capacity.

### 10.5.2.1 Measuring utilisation

**nbn** will measure utilisation of a shared network resource based on the average utilisation in consecutive 30-minute periods, as shown in Figure C3. A shared network resource will be considered to have exceeded the 90% Utilisation Threshold if the 30-minute average utilisation exceeds 90% on at least three separate days within a rolling 30-day period.

<sup>17</sup> ACCC, ACCC Industry Roundtable on regulatory arrangements under NBN Co’s Special Access Undertaking, June 2021, p. 5: [https://www.accc.gov.au/system/files/Public%20summary%20of%20NBN%20roundtable%20discussion\\_0.pdf](https://www.accc.gov.au/system/files/Public%20summary%20of%20NBN%20roundtable%20discussion_0.pdf).



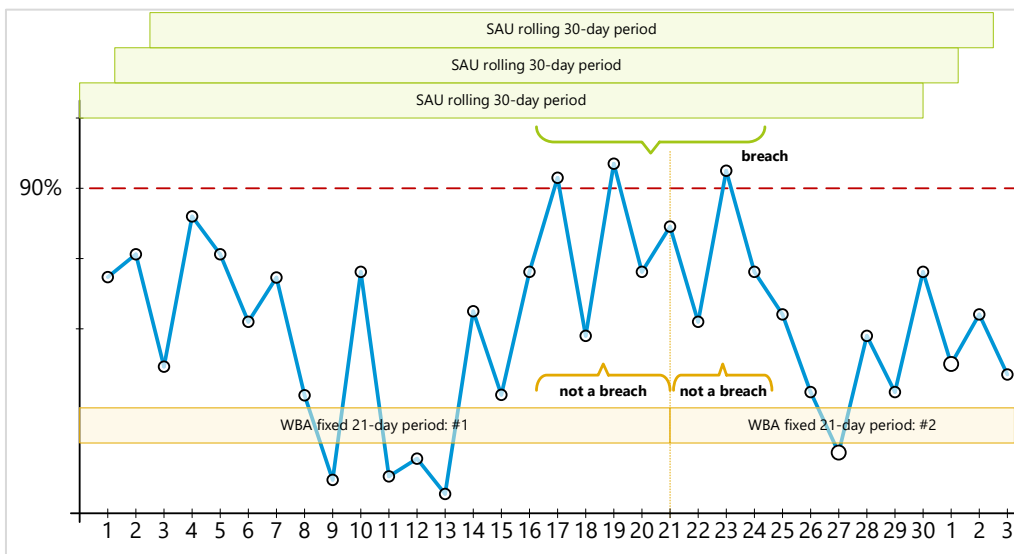


Figure C3. Utilisation measurements

When compared with the method for measuring against the existing Utilisation Threshold in WBA4, measuring utilisation based on these rolling periods provides a more comprehensive view of utilisation events that could cause potential congestion on the network. While the WBA Utilisation Threshold is lower at 70% (discussed further in section 10.5.3 below) that calculation is based on a fixed 21-day window. The Variation offers the following improvements:

- **nbn** is widening the measurement window from 21 days to 30 days, which will increase the scope of events that may constitute potential congestion on the network; and
- where the first or first two events of utilisation exceeding the Utilisation Threshold occur at the end of the fixed 21-day period under the WBA, these cannot be combined with events in the subsequent 21-day period to trigger the relevant performance objective. By applying a rolling window, as the new SAU utilisation commitment does, the equivalent scenario would trigger augmentation requirements (subject to any applicable exceptions) as long as the first event was within 30 days of the third event. Again, this increases the number of events (where the Utilisation Threshold is exceeded) that may cumulatively constitute congestion on the network.

While the March Variation proposed a Utilisation Threshold of 95% based on a 15-minute window, **nbn** has received feedback from industry indicating that this 95% threshold is too high – particularly in comparison to the 70% threshold in the WBA today.<sup>18</sup> **nbn** has therefore reviewed whether it is possible to lower the Utilisation Threshold for the First Regulatory Cycle. In order to provide a truer comparison that responds to RSP feedback, **nbn** has reverted to a 30-minute measurement. This aligns with the current utilisation measurement in WBA4 which measures “if a Shared Network Resource is being or has been utilised for a continuous period of 30 minutes or more on 3 or more separate occasions during any fixed 21 day period...”<sup>19</sup>

<sup>18</sup> Telstra Corporation Limited, *Response to the Proposed Variation to the NBN Co Special Access Undertaking*, 20 July 2022: <https://www.accc.gov.au/system/files/Submission%20-%20Telstra%20-%20Public%20-%20NBN%20Co%20SAU%20Variation%20March%202022%20-%202020%20July%202022.pdf>; TPG Telecom, *Proposed variation to the NBN Co Special Access undertaking*, July 2022: <https://www.accc.gov.au/system/files/Submission%20-%20TPG%20-%20Public%20-%20NBN%20Co%20SAU%20Variation%20March%202022%20-%202022%20July%202022.pdf>; Optus, *Submission in response to ACCC Consultation Paper – Proposed variation to the NBN Co Special Access Undertaking*, July 2022: <https://www.accc.gov.au/system/files/Submission%20-%20Optus%20-%20Public%20-%20NBN%20Co%20SAU%20Variation%20March%202022%20-%202025%20July%202022.pdf>.

<sup>19</sup> Section 15.4(b)(i) of the WBA **nbn**® Ethernet - Service Levels Schedule.



Finally, **nbn** appreciates that while managing transit networks to a Utilisation Threshold (network-centric) is appropriate with the introduction of TC-4 Flat-Rate Offers, adopting a service-centric measure in the future may provide RSPs and end-users with increased certainty of their service performance. While **nbn** is not in a position to offer a service level (AVC) performance framework at present, **nbn** intends to consult with the industry at a later stage (after WBA5 has come into effect) to define and gauge the industry's interest in a service level (AVC) performance framework to replace the network-centric approach that will be introduced under the Variation if accepted.

### 10.5.3 Determining the Utilisation Threshold

Determining the appropriate Utilisation Threshold is critical to ensuring that quality of service and customer experience is maintained while avoiding inefficient investment in the network from capacity upgrades triggered too early. Implementing a threshold of 90% is based on: (a) the historical performance and experience of the **nbn**<sup>®</sup> network; (b) **nbn** testing of Layer 3 performance; (c) international standards established by the Metro Ethernet Forum; and (d) comparison with the New Zealand market.

#### 10.5.3.1 Historical performance and experience of the **nbn**<sup>®</sup> network

Since **nbn** launched its **nbn**<sup>®</sup> Ethernet service in 2011, **nbn** has committed under the WBA to upgrading shared network resources when utilisation exceeded 70%.<sup>20</sup> This upgrade threshold was implemented during the early stages of the **nbn**<sup>®</sup> network roll-out when:

- migration onto the network was more dynamic and involved greater variation in the number of services being added to a particular CSA in a given week or month;
- network demand and usage patterns were significantly less predictable, as demonstrated by the significant increase in demand on the network generated by video on demand services; and
- the size of transit links was smaller. As transit links have increased to a standard of 10 Gbps, the impact of a spike in traffic is less pronounced than on historically smaller links. That is, today's larger transit links can run at a higher Utilisation Threshold as the available capacity on a 10 Gbps link running at 90% utilisation is one Gbps vs. a one Gbps link running at 90% utilisation that would only have 100 Mbps capacity available.

A 70% threshold was not based on the performance impacts that may occur at that level. Rather, it was implemented as a highly precautionary measure in the event that mass migration, combined with evolving usage patterns and the historical size of transit links, led to the number of services in a particular CSA escalating without **nbn** having sufficient time to respond to address the potential impact on capacity.

This 70% threshold may still provide a useful leading indication of network utilisation that **nbn** should continue to consider internally for capacity planning, but as migration onto the network has stabilised, it is unlikely that new services attached to a particular shared network resource would be activated at such an accelerated volume to require that **nbn** ensure no shared network resource exceeded 70%. Rather, implementing this Utilisation Threshold under the SAU, particularly in conjunction with the more representative measurement windows described in section 10.5.2.1, would embed a threshold that would lock in long-term unnecessary network augmentation and cost.

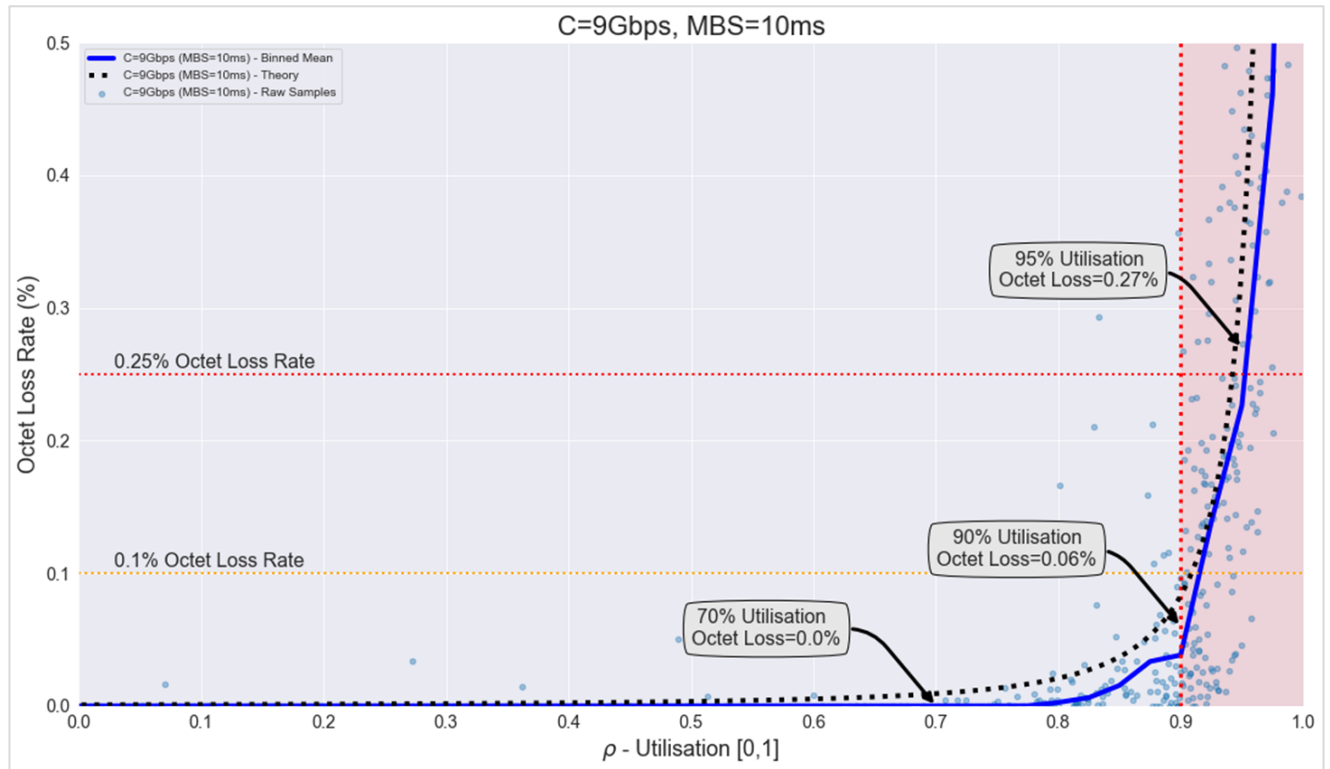
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<sup>20</sup> Section 15.4(b) of the WBA **nbn**<sup>®</sup> Ethernet - Service Levels Schedule.



### 10.5.3.2 nbn testing of Layer 3 performance

In order to understand the likely real-world impacts of a 90% and 95% Utilisation Threshold, **nbn** has undertaken Layer 3 testing that demonstrates the impacts of utilisation levels on end-user performance. The results of this testing are demonstrated in the graph below:



**Figure C4. nbn Testing of Layer 3 Performance**

Octet or frame loss rates are good lagging indicators of network congestion. For example, some variants of TCP will interpret a lost frame as a signal that the network is becoming congested and will reduce their transmission rates in an effort to reduce network utilisation. Figure C4 shows a relationship between utilisation and octet loss rate taken from lab testing performed by **nbn**. To perform this testing, TCP load with exponentially distributed job-sizes and interarrival times was generated and utilisation and octet loss rates measured on an inline network element (switch).

The results presented here are indicative of **nbn**'s current network configuration and show that below 90% utilisation, octet loss-rate is kept sufficiently small (< 0.1%, which is the MEF-23.2 recommended threshold for HD-Video). Beyond 95% utilisation the octet loss rate starts to rapidly increase.

This testing was performed on a nine Gbps link (due to load-generator constraints). Performance on a 10 Gbps link would be marginally better (due to statistical multiplexing gains) and performance would continue to improve if capacity increased.

Figure C4 clearly demonstrates that acceptable performance between 90% to 95% utilisation is achievable.



### 10.5.3.3 Metro Ethernet Forum

The MEF-23.2 Standard, provides some guidance on what frame loss applications can tolerate (e.g., interactive video: 1%, STD/HD video: 0.1%).<sup>21</sup> This is at least in the same order of magnitude as the frame loss Chorus observed on its network over the 90-95% utilisation point.<sup>22</sup> Today applications like Netflix are using all kinds of innovative approaches to operate under even worse conditions. While **nbn** would endeavour to avoid such conditions becoming persistent in its network, it demonstrates that should they occur on rare occasions where demand from multiple end-users is at exactly the same sub-second time interval, impact on the end-user will not be severe. It is only when utilisation persistently exceeds 95% that frame loss becomes sufficiently large to disrupt most of the modern applications used by the majority of end-users on the network.

### 10.5.3.4 Comparison with New Zealand

In its December 2021 price-quality determination, the NZCC mandated that the Chorus network is subject to a 90% maximum port utilisation threshold. While there are key points of distinction (Chorus uses a smaller measurement window for port utilisation but allows a tolerance of 0.125% of ports that can exceed the utilisation threshold), the Chorus network provides a useful comparison to the proposed utilisation management commitment **nbn** will implement under the Variation. Both are intended to ensure that utilisation does not exceed a point that results in significant degradation of end-user performance.

When considering the recent price-quality regulation established for Chorus and comparison to **nbn**'s utilisation commitment, it is also essential to acknowledge the evolving product and pricing construct underlying **nbn**'s Variation, the impacts of which will not be known for certain until the changes have been implemented and tested over a period of time.

As noted above, **nbn** will continue to utilise leading triggers to identify where shared network resources should be augmented, with the intention to avoid resources exceeding the threshold. The SAU commitment then provides a safeguard as to the steps **nbn** must take in the instance that a resource passes this threshold.

## 10.5.4 Utilisation management reporting

To provide RSPs with enhanced transparency of network utilisation, the utilisation management commitment will be accompanied by:

### 1. Monthly Utilisation Report:

This monthly report will provide the end-user with an overview of those Shared Network Resources that exceeded the Utilisation Threshold including:

- information identifying the Shared Network Resource;
- potentially affected services supplied by **nbn** to that end-user; and
- the estimated date by which that Shared Network Resource will no longer exceed the Utilisation Threshold.

This report will also include the number of Shared Network Resources that exceeded the Utilisation Threshold in the immediately preceding monthly report and are no longer exceeding the Utilisation Threshold.

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<sup>21</sup> Metro Ethernet Forum, *Implementation Agreement MEF 23.2, Carrier Ethernet Class of Service – Phase 3*, August 2016.

<sup>22</sup> Chorus, *Congestion Free Networks - Technical White Paper*, 2016, p. 11.



## 2. Quarterly augmentation report:

**nbn** will also provide quarterly reporting on augmentation activity undertaken in the preceding three-month period, to provide increased transparency regarding continued investment in network capacity and performance.

**nbn** appreciates the feedback from RSPs in relation to having a closer-to-real-time view of congestion on the network. **nbn** considers it is pre-emptive to incur substantial cost in IT changes to provide near-real-time visibility of network utilisation, particularly as **nbn**'s augmentation plans are intended to ensure that **nbn** does not reach the Utilisation Threshold and the threshold operates as a backstop. If **nbn** were to invest in this systems change now, it is expected that **nbn** would be reporting zero occurrences for the foreseeable future, representing an inefficient investment that could need to be accounted for in **nbn**'s prices.

However, if the Utilisation Threshold was triggered in future, and a significant number of customers were impacted, **nbn** is aligned with RSPs that it would be important that RSPs have visibility in order to provide appropriate operational support to customers. On this basis, the SAU provides that if utilisation on the network results in more than 1% of services on the fixed line network of customers being impacted by Shared Network Resources exceeding the Utilisation Threshold over a three-month period, **nbn** will introduce reporting in its Service Health Summary Tool to provide RSPs with visibility of network utilisation to support customer interactions.<sup>23</sup> **nbn** believes this trigger for the introduction of Service Health Summary Tool reporting strikes an appropriate balance between efficient investment, supporting RSP operations and ensuring the best possible customer experience on the network.

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<sup>23</sup> Variation, Schedule 4A, Attachment I, cl 16.4(c) (Benchmark Service Standards for First Regulatory Cycle).



# 11 Service level reporting and transparency

The fundamental role of any network performance reporting commitment is to demonstrate an appropriate minimum level of performance on the network is maintained.

**nbn** acknowledges the views of the ACCC and industry in relation to the proposed network performance reporting comments in the March Variation and the preference for a more consolidated set of reporting requirements, potentially determined via a Record Keeping Requirement.

**nbn** has removed the network performance reporting commitments set out in the March Variation, and is committed to working with the ACCC and RSPs on the appropriate transparency metrics that would form part of any potential Record Keeping Requirement.

Reporting on the **nbn**<sup>®</sup> network and service performance at a network level has been a key focus of industry engagement on the Variation. **nbn** already provides extensive reporting to RSPs regarding performance against WBA service levels, and public reporting regarding key performance metrics on the **nbn** website. RSPs and the ACCC have proposed that additional reporting commitments – outside the WBA – should be introduced to ensure the performance of the network is maintained and/or improved over time.

In response to these concerns, **nbn** proposed in its March Variation that the SAU:

- introduce reports on network capability, outages and recurring faults provided to the ACCC on a six-monthly basis; and
- commit **nbn** to maintaining existing monthly reports that **nbn** provides to RSPs or via **nbn**'s website in relation to congestion, network availability, and connection and assurance performance.

The ACCC and certain stakeholders have since suggested that **nbn** should be subject to a more comprehensive set of reporting commitments than those proposed and in a more consolidated mechanism. While **nbn**'s reporting commitments in the March Variation sought to leverage existing reporting commitments and processes (so as to avoid duplicative and overlapping RSP and ACCC reporting processes), **nbn** acknowledges the concern raised and ACCC comments that it is considering whether network performance reporting would be better addressed through a Record Keeping Requirement.

On that basis, **nbn** has removed the network performance reporting commitments set out in section 1H.6 of the March Variation, and is committed to working with the ACCC and RSPs on the appropriate transparency metrics that would form any potential Record Keeping Requirement. In settling the appropriate reporting framework, it is important that any proposed Record Keeping Requirement does not lead to duplicative and inefficient reporting commitments (noting the service level and operational reporting commitments included in the Benchmark Service Standards), and that competing networks are subject to equivalent transparency to ensure that RSPs and end-users have an appropriate baseline for comparison of network quality.



## 11.1 Objective of network performance reporting commitments

In determining what network reporting commitments should be included in a Record Keeping Requirement, it is essential that the underlying purpose of those commitments is clear. The fundamental role of any network performance reporting commitment is to demonstrate an appropriate minimum level of performance on the network is maintained. Regulatory commitments to report on network performance are intended to protect RSPs and end-users from any commercial incentive to reduce maintenance costs or investment in network upgrades, resulting in reduced network quality. It promotes the LTIE for the ACCC and RSPs to have visibility over appropriate network performance measurements as a check that investment to maintain quality (which will need to be recovered through pricing) is effective in maintaining network performance.

On this basis, **nbn** considers the following network performance indicators are relevant to demonstrating the **nbn**<sup>®</sup> network continues to meet a minimum level of performance:

- ability of the network to support designated speeds;
- capacity of the **nbn**<sup>®</sup> network to support the volume of services supplied (i.e., potential congestion on the network);
- volume and impact of intentional outages;
- availability of the **nbn**<sup>®</sup> network;
- performance of **nbn** in connecting services;
- performance of **nbn** in assuring services; and
- volume of services experiencing recurring faults.

In determining appropriate reporting on these network performance indicators, it is important that enhanced transparency reflects the existing commitments and performance of the **nbn**<sup>®</sup> network. While **nbn** continually works with RSPs to improve customer experience, embedding performance commitments above those that exist in the SAU and current WBA will drive additional cost into **nbn**.

## 11.2 Network performance reporting commitments for consideration

**nbn** considers that the following metrics would provide an appropriate reporting baseline in respect of **nbn**<sup>®</sup> Ethernet:

1. **Network capability:** The number and percentage of premises in **nbn**'s fixed line network capable of achieving specified speeds (i.e., 50 Mbps, 100 Mbps, one Gbps).
2. **Network congestion:** Potential congestion experienced on the **nbn**<sup>®</sup> network. This includes:
  - average network bandwidth congestion (potential congestion experienced on the network as a result of CVC or NNI provisioned by RSPs);
  - fixed line network congestion (potential congestion experienced on the fixed line network other than as a result of CVC-related network bandwidth congestion);



- fixed wireless busy hour cell performance (the percentage of cells with a monthly busy hour cell performance of six Mbps or more); and
  - fixed wireless busy hour backhaul performance (the percentage of cells connected to a backhaul transmission link with a 28-day busy hour packet loss of less than 0.25%).
3. **Intentional outages:** Reporting on the number of intentional outages (planned and emergency), including the number of services impacted, the percentage of planned outages that met notification requirements, and the percentage of planned outages restored within the scheduled maintenance window.
  4. **Network Availability:** nbn provides monthly reporting to RSPs in relation to its performance against Network Availability performance objectives contained in the WBA. This is intended to reflect the reliability of the nbn<sup>®</sup> network by measuring, as unavailable time, the time during which ordered products supplied across the nbn<sup>®</sup> network experience total loss of connectivity (with separate calculations reported for the Satellite network). The performance objectives exclude interruptions to connectivity due to the following circumstances, which do not reflect the reliability of the nbn<sup>®</sup> network:
    - interruptions to connectivity that do not reflect the resilience of the nbn<sup>®</sup> network, such as planned outages and emergency outages; and
    - failures that occur due to factors outside of nbn's control such as force majeure events.
  5. **Performance of nbn in connecting services:** nbn provides monthly reporting in relation to the connection of services through both monthly service level reporting provided to RSPs and transparency metrics published on its public website. Monthly service level reporting provides a view of nbn's performance against the various nbn<sup>®</sup> Ethernet activation service levels in the WBA. The public website provides reporting in relation to:
    - right first-time installations (the percentage of homes and businesses that have their nbn<sup>®</sup> equipment installed without additional work from nbn the first time the installation is attempted); and
    - faults after connection completed (the percentage of faults on the nbn<sup>®</sup> network per month excluding faults within 10 Business Days of the connection).
  6. **Performance of nbn in assuring services:** nbn provides monthly reporting to RSPs in relation to its performance against the Service Fault Rectification and End User Incident rectification performance objectives in the WBA.
  7. **Recurring faults:** A key additional metric considered by nbn and RSPs as part of SAU engagement has been the number of recurring faults on the nbn<sup>®</sup> network. nbn proposes that reporting on instances where nbn<sup>®</sup> Ethernet product experiences three or more end-user faults in a 60-day period or any four or more end-user faults affecting a single ordered product in a 12-month period could provide an appropriate measure of network performance for consideration in a Record Keeping Requirement.





## 12 Carry over Module 1 commitments and Accounting Separation

**nbn** commits to extend non-price-related commitments currently set out only in Module 1 (together with any amendments to those commitments) relating to dispute resolution; Product Development Forum arrangements; closure, relocation and new POIs; provisions relating to what activities comprise a Standard Installation; and the maximum term of SFAAs.

In addition, **nbn** commits in the Variation to a set of accounting separation and transparency arrangements that will be developed and implemented under the ACCC's oversight.

### 12.1 Carry over Module 1 commitments

**nbn** will extend the following commitments currently set out only in Module 1 of the SAU (together with any amendments to those commitments):

1. **Dispute management provisions:** **nbn** is carrying forward the SAU dispute resolution measures which applied during the Initial Regulatory Period into Module 2. These measures cater for **nbn's** regulatory obligations, particularly its non-discrimination obligations. They are also similar to arrangements in other regulated settings (e.g., the Telstra Structural Separation Undertaking). The SAU confers powers on the ACCC to approve the appointment of a Resolution Advisor and the members of a pool of adjudicators, as well as their terms and any proposed termination. These measures ensure that the dispute resolution process operates independently and robustly.

Under the Variation, only minor adjustments will be made during the remainder of the Initial Regulatory Period and Module 2. These adjustments reflect feedback from RSPs and comprise:

- permitting **nbn** to appoint an additional Resolution Advisor or additional Nominated Person in respect of an existing Resolution Advisor where necessary, and after notifying the ACCC,<sup>24</sup>
  - clarifying that a Resolution Advisor may be a body corporate;
  - permitting **nbn** to appoint new Pool members after the establishment of the initial Pool at such times as **nbn** reasonably considers that to be required; and
  - permitting the Resolution Advisor to appoint Panel Members from outside the Pool, provided it is necessary to do so, in accordance with the Dispute Resolution Rules and notified to the ACCC and **nbn**.
2. **Product development Forum arrangements:** For all technologies, **nbn** commits to continuing its existing Product Development Forum process commitments into Module 2, with only minor changes to remove the Product Ideas Register. **nbn** understands the Product Ideas Register to be of limited benefit to the industry.
  3. **Closure, relocation and establishment of Points of Interconnection:** Under Module 2, **nbn** commits to carry over the obligations to provide RSPs with 12 months' notice of the establishment, relocation or closure of a POI. Given the established nature of **nbn's** POIs, **nbn** considers it is not necessary to carry the Point of Interconnect Plan commitment over to Module 2.

<sup>24</sup> A Nominated Person is a responsible individual within a Resolution Advisor that is a body corporate.



4. **Provisions relating to what activities comprise a Standard Installation across each access technology:** The definitions of what constitute a standard and non-standard installation for each access technology are relevant to the price commitments set out in the SAU. As the Variation maintains price commitments with respect to standard and non-standard installations under Module 2, it is appropriate that the descriptions of these activities are also carried over to Module 2. As noted in relation to the MTM drafting, the SAU incorporates the descriptions of standard installations and non-standard installations for the MTM and satellite access technologies.
5. **Maximum term of SFAA:** Under the Variation, **nbn** is committing to a maximum term for SFAAs both for the First Regulatory Cycle and beyond. The current SAU regulatory framework provides that, during the Initial Regulatory Period, any SFAAs published by **nbn** must include an expiry date of no longer than two years (although this does not preclude **nbn** publishing an SFAA which includes the option of extending the term of an access agreement based on that SFAA beyond two years by agreement). The two-year period was designed to balance providing certainty to RSPs and **nbn** over the terms of supply for a set period, and ensuring that access agreements (picking up the terms of the SFAA) would not continue for so long that they exclude the regulatory oversight and recourse contemplated by Part XIC of the CCA.

In practice, however, two years has proven too short a period. Negotiating an access agreement requires significant time and resource commitments from both RSPs and **nbn**. Consequently, most access agreements have been extended beyond their initial two-year term to three years or more by agreement between RSPs and **nbn**, an option which the existing SAU commitment expressly permits. Furthermore, **nbn**'s current regulatory framework provides that, from 1 July 2023, under the SAU, **nbn** will move to Regulatory Cycles of between three to five years. That framework does not include a similar commitment regarding the expiry date of SFAAs published after 1 July 2023.

**nbn** recognises that a maximum SFAA term commitment gives RSPs certainty that they will have an ongoing opportunity to negotiate access agreements with **nbn** at regular intervals, allowing such access agreements to change and reflect the prevailing industry and market conditions at the time of supply. In that context, and to align with the shift in **nbn**'s regulatory framework from 1 July 2023, **nbn** proposes to extend this commitment with amendments such that:

- for the First Regulatory Cycle in the Subsequent Regulatory Period (which will be for a period of three years), the published SFAA will specify an expiry date that results in a term that is, measured from the commencement date of the SFAA, no longer than the duration of the Regulatory Cycle plus three months; and
- for each subsequent Regulatory Cycle in the Subsequent Regulatory Period, the published SFAA will specify an expiry date that results in a term that is, measured from the commencement date of the SFAA, no longer than the duration of the Regulatory Cycle.

The additional three-month buffer beyond the end of the First Regulatory Cycle allows time for RSPs and **nbn** to consider the updated regulatory settings for the new Regulatory Cycle (eg. Benchmark Service Standards) and then, factoring in those new settings, to negotiate new access agreement terms that **nbn** will reflect in the next SFAA.



There are four key reasons that support **nbn**'s proposed updates to the maximum SFAA term commitments in the SAU (three of which **nbn** has detailed further in supporting documentation for the March Variation):<sup>25</sup>

- **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;
- a two-year maximum SFAA term typically 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;
- 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; and
- the introduction of the Benchmark Service Standards in the SAU provides further impetus for alignment of maximum SFAA terms with the duration of each Regulatory Cycle. There is a potential 'reset' of Benchmark Service Standards that happens as part of an RMD and, given **nbn** will have an obligation to include in its SFAA service standards no less favourable to RSPs than those in the Benchmark Service Standards, it is appropriate that **nbn** and RSPs have clarity on the regulatory benchmarks before agreeing the service standards that will be included in a revised SFAA.

The updated maximum SFAA term commitment appropriately balances the efficiency and certainty of commercial negotiations with an ongoing commitment to the regulatory oversight created by the ACCC's ability to periodically enquire into the ongoing appropriateness of terms of supply for declared services and consider whether there is a need for regulatory intervention in the form of an Access Determination or Binding Rule of Conduct.

## 12.2 Accounting Separation

In the Variation, **nbn** commits to a set of accounting separation and transparency arrangements that will be developed and implemented, subject to ACCC consultation and approval, with ongoing ACCC oversight. These arrangements provide information to the ACCC at a product/service level on the split of costs and revenues between Core Regulated Services and Competitive Services. There are four main elements to the arrangements.

First, **nbn** must develop Proposed Accounting Procedures in consultation with the ACCC and submit these to the ACCC by 31 March 2024. These Proposed Accounting Procedures must set out:

- procedures for establishing and maintaining consolidated and separate accounts for each of the following products and services:
  - TC-1 services on **nbn**'s fixed line and fixed wireless networks;
  - TC-1 services on **nbn**'s Satellite network;
  - TC-2 services on **nbn**'s fixed line networks;
  - TC-4 services on **nbn**'s fixed line and fixed wireless networks;
  - TC-4 services on **nbn**'s Satellite network;

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<sup>25</sup> Further detail on the first three reasons is set out in section 2.8 of **nbn**'s response to the ACCC's consultation paper on the March Variation.



- Sky Muster Plus services;
  - NNI services;
  - Enterprise Ethernet (this is proposed to be an initial 'Competitive Service' under the SAU);
  - Business Satellite Services (this is proposed to be an initial 'Competitive Service' under the SAU); and
  - Satellite Mobility for Large Commercial Passenger Aircraft (this is proposed to be an initial 'Competitive Service' under the SAU).
- arrangements for:
    - scope, form and timing of any reporting by **nbn** to the ACCC; and
    - the scope and timing of any external assurance;
  - a methodology for the allocation of costs which is consistent with the Cost Allocation Principle and the Cost Allocation Manual; and
  - a methodology for the allocation of revenues.

Second, the ACCC may, by notifying **nbn**, determine Approved Accounting Procedures within three months of **nbn** submitting the Proposed Accounting Procedures, and the ACCC may extend that timeframe by up to two months at a time. The ACCC may determine the Approved Accounting Procedures in the form proposed by **nbn** or a form which incorporates reasonable changes to those proposed by **nbn**.

Third, **nbn** must implement the Approved Accounting Procedures (for the products and services described above) on and from 31 December 2024. **nbn** may request an extension to that date and the ACCC can accept or reject that request. The ACCC may, separately, also extend the date by up to 60 Business Days at a time.

Fourth, the Approved Accounting Procedures may be changed through a process that starts with:

- the ACCC directing **nbn** to submit (within two months) changes to the Approved Accounting Procedures (e.g., to account for other products or services); or
- **nbn** submitting its own proposed changes to the ACCC.

The ACCC will then follow the same process and timing as for determining the initial set of Approved Accounting Arrangements. Subject to any extensions, **nbn** must implement the updated set of Approved Accounting Arrangements within two months after the ACCC's determination.