NBNCo
Bringing broadband to life

Supporting Submission NBN Co Special Access Undertaking

20 December 2011

NBN Co Limited (ACN 136 533 741) and NBN Tasmania Limited (ACN 138 338 271)

Supporting Submission, Special Access Undertaking

20 December 2011

Environment

NBN Co asks that you consider the environment before printing this document.

Contents

Abbreviations and Acronyms

Throughout this submission, capitalised terms have the same meaning as in the Dictionary set out in Schedule 1 of the SAU.

ABBRR	Annual Building Block Revenue Requirement
ABG	Australian Broadband Guarantee
ACCC	Australian Competition and Consumer Commission.
ADSL 2+	Asymmetric Digital Subscriber Line 2+
AER	Australian Energy Regulator
AG-EVC	aggregation ethernet virtual circuits
ALA	active line access
ANAO	Australian National Audit Office
ANs	aggregation nodes
ARPU	average revenue per User
ARTC	Australian Rail Track Corporation
AVC	Access Virtual Circuit
BAO	Basic Access Offer
capex	Capital Expenditure
CCA	*Competition and Consumer Act 2010*
CIP	Construction in Progress
CIR	committed information rate.
CPI	Consumer Price Index
CP	communications provider

CSA	Connectivity Serving Area
CSP	Carriage Service Provider
CVC	Connectivity Virtual Circuit
DSL	Digital Subscriber Line
DSLAM	Digital Subscriber Line Access Multiplexer
ESA	exchange serving area
FANOC Decision	ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007
FAN	Fibre Access Node
FDH	Fibre Distribution Hub
FOI Act	*Freedom of Information Act 1982*
FSA	fibre serving area
FTTN	Fibre-to-the-Node
FTTP	Fibre-to-the-Premises
GBAB	Government Businesses Advice Branch
GBE	Government Business Enterprise
GBE Guidelines	Commonwealth Government Business Enterprise – Governance and Oversight Guidelines. Copy can be accessed at: http://www.finance.gov.au/publications/governance-arrangements/index.html
Gbps	Gigabits per second
GEA-FTTP	Generic Ethernet Access over Fibre to the Premises
GPON	Gigabit passive optical network.
GST	Goods and Services Tax
ICRA	Initial Cost Recovery Account

IPS	Information Publication Scheme
IPTV	Internet Protocol television
Kbps	Kilobits per second
LSS	Line Sharing Service
LTIE	Long-term interests of end-users
LTRCM	Long term revenue constraint methodology
Mbps	Megabits per second.
NBN	National Broadband Network
NBN Access Bill	*Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2011*
NBN Companies Act	*National Broadband Network Companies Act 2011*
NDRs	Network Design Rules
NGA	Next Generation Access
NNI	Network-Network Interface
NTD	Network Termination Device
OLT	Optical Line Terminal
opex	Operating Expenditure
OSS/BSS	Operational Support System/Business Support System
PDF	Product Development Forum
PIR	peak information rate
PSTN	Public Switched Telephone Network
POI	point of Interconnect
QP-EVPL	Qualifying Persons Ethernet Virtual Private Line
RAB	Regulatory Asset Base

SAOs	standard access obligations
SAU	special access undertaking
SCI	Statement of Corporate Intent
SFAA	standard form of access agreement
SIP	Session Initiation Protocol
SIO	services in operation
TC	traffic classes
TDM	Time Division Multiplexing
TNSPs	transmission network service providers
Tribunal	Australian Competition Tribunal
ULLS	Unconditioned Local Loop Service
UNI	User Network Interface
UNI-D	User Network Interface-Data
UNI-V	User Network Interface -Voice
UNWP	uniform national wholesale pricing
UPS	Uninterruptable Power Supply
VOIP	Voice over Internet Protocol
VULA	Virtual Unbundled Local Access
WACC	weighted average cost of capital
WBA	Wholesale Broadband Agreement
WDM	Wavelength Division Multiplexing

Overview

- NBN Co has lodged a Special Access Undertaking (SAU) in respect of its NBN Access Service that sets out, for the first 30 years of NBN Co's operations to June 2040, the service description and certain price and non-price terms and conditions of access.
- NBN Co submits that the SAU satisfies the relevant statutory criteria and should be accepted by the ACCC.

Objectives and background

- NBN Co has been directed by the Government to develop the NBN to provide a layer 2 wholesale bitstream service to achieve a particular coverage, speed and technology mix, to apply a uniform national wholesale pricing (UNWP) approach and to operate as a commercial entity.
- The NBN is now a practical reality in the Australian telecommunications industry and it has been NBN Co's consistently expressed intention to lodge a SAU, and to operate using both a SAU (if accepted) and a Standard Form of Access Agreement (SFAA) as permitted by NBN Co's access regime.
- NBN Co has developed the SAU with two objectives in mind:
  - to provide an appropriate degree of certainty to Access Seekers, their End Users and NBN Co about the access services being offered, and how the price and non-price terms and conditions of access (including the framework for long term cost recovery) will be regulated over the short, medium and long term; and
  - to provide the long term framework reasonably necessary to achieve uniform national pricing of eligible services supplied by NBN Co to Access Seekers.
- As compared to an alternative that may rely on future access determinations by the ACCC, the SAU is the preferable regulatory mechanism because it can:
  - provide long term regulatory certainty earlier and with more consistency than may be possible via the alternative; and
  - be more procedurally efficient than the alternative.
- NBN Co has lodged the SAU following a 2 year process of engagement with industry stakeholders and the ACCC in relation to products, price and non-price terms and conditions and a range of technical and operational matters. As part of this process, NBN Co has also received and considered feedback provided in response to the 28 July 2011 SAU discussion paper.

Legislative framework for assessment of the SAU

- Subsection 152CBD(2) of the *Competition and Consumer Act 2010* (CCA) provides that the ACCC must not accept a SAU unless the ACCC is satisfied that:
  - the terms and conditions of the SAU are consistent with Category B standard access obligations (SAOs) in section 152AXB;
  - the terms and conditions of the SAU are reasonable; and
  - the SAU is consistent with any Ministerial pricing determinations.
- However, in accordance with subsections 152CBD(5A) and (5C) of the CCA, the ACCC must not reject the undertaking for a reason that concerns:
  - price-related terms and conditions, or
  - a refusal to permit interconnection at a location that is not a listed POI, or
  - a refusal to unbundle the supply of designated access services (being an access virtual circuit (AVC) service or a connectivity virtual circuit (CVC) service; or a network-network interface (NNI) service; or a user network interface (UNI) service; or a voice telephony facilitation service),

  where the relevant price-related terms and conditions or refusals are reasonably necessary to achieve uniform national pricing of eligible services supplied by a NBN corporation to service providers and utilities.

Design of the SAU

- The SAU is comprised of three elements: service description; price-related terms and conditions; and non-price related terms and conditions.
- Consistent with the objectives of regulatory certainty and UNWP, the high level design of the SAU includes:
  - a 30 year term with a mid-term review;
  - broad coverage of NBN Co services;
  - explicit interaction with the Wholesale Broadband Agreement (WBA); and
  - utilisation of a series of largely self- executing rules, but with specific powers conferred on the ACCC.
- Structurally, the SAU consists of a main body and 12 schedules, and represents an integrated package of commitments.

Service description

- NBN Co has developed the NBN Access Service to give effect to the key directions from the Government, in its role as shareholder, to:
  - connect 93 per cent of Australia homes, schools and businesses with fibre-to-the premises technology with speeds up to 100Mbps, with the remaining premises to be served by a combination of next generation fixed wireless and satellite technologies with peak speeds of at least 12Mbps; and
  - supply open and non-discriminatory access to wholesale services, at the lowest levels in the network stack necessary to promote efficient and effective retail level competition, via Layer 2 bitstream services.
- The SAU defines NBN Co's commitment to supply the NBN Access Service through the use of Product Components (AVC, CVC, UNI and NNI), which cannot be withdrawn by NBN Co.
- This approach is consistent with approaches endorsed by the ACCC, overseas regulators and industry and facilitates NBN Co's overall SAU objective of setting up a long term framework to achieve UNWP of eligible services supplied by NBN Co to Customers.
- NBN Co's use of Product Components promotes competition by providing flexibility for Access Seekers on how they configure services offered to End Users.
- The requirement to acquire all Product Components is appropriate for sound technical and operational reasons, and it is also supported by approaches taken in other jurisdictions.
- The NBN Access Service is consistent with the requirements that the ACCC has previously indicated would be necessary for a layer 2 broadband service to promote the long-term interests of end-users.

Price-related terms and conditions

- NBN Co has developed a package of price-related terms and conditions that is intended to:
  - provide the long term framework necessary for UNWP;
  - provide the opportunity for recovery of prudently incurred costs over time;
  - encourage the economically efficient take up and usage of NBN Co's products; and
  - strike a balance between pricing certainty for Access Seekers and pricing flexibility for NBN Co, having regard to the need to account for evolving technology, applications and demand.

- The price-related terms and conditions meet these objectives through the interaction of:
  - initial pricing, fixed for 5 years, for a set of basic products that compares favourably to wholesale costs of supply on legacy networks (including for voice only services), are uniform across NBN Co's fibre, wireless and satellite access networks to the greatest extent possible, and serve to anchor the prices of higher speed and functionality products;
  - an individual price increase limit of CPI/2 that applies on an annual basis with no carry forward to subsequent years to each of NBN Co's Product Components, Product Features and Ancillary Services (NBN Co can set the initial prices for new Product Components, Product Features and Ancillary Services, and can request ACCC approval for an exception to the CPI/2 annual price increase limit subject to satisfying certain criteria); and
  - a Long Term Revenue Constraint Methodology, supported by a set of prudency commitments, that constrains NBN Co over time to recovering no more than its prudently incurred costs of supply (noting that this constraint will not directly affect product pricing in the short to medium term because of the extent of initial cost under-recovery).
- NBN Co submits that these price-related terms and conditions appropriately meet the needs of Access Seekers, their End Users and NBN Co.

Non-price related terms and conditions

- The SAU covers a range of non-price related terms and conditions.
  - Term of the SAU – 30 years, to deliver regulatory certainty and stability to NBN Co and Access Seekers by committing to key principles, parameters, methodologies and processes associated with delivering services over that period.
  - Interaction with the WBA – the SAU does not exhaustively cover all non-price terms and conditions which will be included in the WBA, but it does cover those which NBN Co anticipates will be of key importance to its Customers. The SAU also contains commitments in relation to changes to the WBA over time.
  - Regulatory recourse – the SAU confers powers and functions on the ACCC (using subsection 152CBA(10A) of the CCA) to create a transparent and efficient mechanism which can be used by an Access Seeker or NBN Co where agreement cannot be reached in respect of non-price terms and conditions not covered by the SAU or price-related terms and conditions (where pricing is announced by NBN Co after the SAU Commencement Date).

- Product development and withdrawal – the SAU sets out the processes that NBN Co will follow in developing and withdrawing products over time;
- Dispute management rules – the SAU includes the key principles for dispute management so that NBN Co and Customers have certainty of access to a stable dispute resolution process.
- Other non-price terms and conditions – a range of other non-price terms and conditions are included in the SAU. These are expressed so as to be principles-based, product-neutral, and non-exhaustive.
- Review and variation of the SAU – a number of aspects of the SAU are subject to review: Customer engagement every 5 years; and prudency arrangements, Weighted Average Cost of Capital (WACC) and potentially a number of other matters prior to privatisation (and in any event around mid-way through the SAU term).

▪ NBN Co submits that these non-price related terms and conditions appropriately meet the needs of Access Seekers, their End Users and NBN Co.

Reasonableness of the SAU

▪ NBN Co has identified a number of price-related terms and conditions in the SAU that are reasonably necessary for achieving uniform national pricing.

▪ In accordance with subsection 152CBD(5A) of the CCA, NBN Co submits that the ACCC cannot reject the SAU for a reason related to these terms and conditions of the SAU (because they are reasonably necessary to achieve uniform national pricing).

▪ In addition to supporting the achievement of uniform national pricing, the terms and conditions of the SAU promote the long-term interests of end-users, by promoting competition, achieving any-to-any connectivity and encouraging efficient investment in and use of infrastructure as compared to the counterfactual of having terms of access set out via an access determination and/or SFAAs alone. NBN Co submits that the regulatory certainty provided by the SAU strikes an appropriate balance between the legitimate interests of NBN Co and Access Seekers using the NBN Access Service.

▪ NBN Co accordingly submits that the ACCC should be satisfied that the terms and conditions in the SAU are reasonable (in accordance with the statutory criteria set out in section 152AH of the CCA).

Part A – SAU Context

1 Introduction

NBN Co has lodged a SAU in respect of its NBN Access Service that sets out, for the first 30 years of NBN Co's operations to June 2040, the service description and certain price and non-price terms and conditions of access.

The SAU is intended to achieve an appropriate degree of regulatory certainty for Access Seekers, their End Users, and NBN Co over the short, medium and long term, and also provide the framework reasonably necessary to achieve UNWP.

NBN Co submits that the SAU satisfies the relevant statutory criteria and should be accepted by the ACCC.

This submission is organised in three parts, addressing the context, content and assessment of the SAU:

- Part A – SAU Context
  - objectives and background for the SAU – section 2;
  - legislative framework for the ACCC's assessment – section 3;
- Part B – SAU Content
  - design of the SAU – section 4;
  - service description – section 5;
  - price-related terms and conditions – section 6;
  - non-price related terms and conditions – section 7;
- Part C – SAU Assessment
  - reasonableness of the SAU – section 8; and
  - compliance with legislative requirements – section 9.

In preparing this submission, NBN Co has sought to address all relevant issues in as comprehensive a manner as possible. While noting that the ACCC may request further information from NBN Co at any time throughout its assessment process, NBN Co may also lodge further submissions, expert reports and other information if it considers this may be useful. A number of expert reports are currently being prepared on NBN Co's behalf and will be lodged with the ACCC once final.

2 Objectives and background

Key points

- NBN Co has been directed by the Government to develop the NBN to provide a layer 2 wholesale bitstream service, to achieve a particular coverage, speed and technology mix and also to apply a UNWP approach and to operate as a commercial entity.
- The NBN is now a practical reality in the Australian telecommunications industry and, it has been NBN Co's consistently expressed intention to lodge a SAU, and to operate using both a SAU (if accepted) and a SFAA as permitted by NBN Co's access regime.
- NBN Co has developed the SAU with two objectives in mind:
  - to provide an appropriate degree of certainty to Access Seekers, their End Users and NBN Co about the access services being offered, and how the price and non-price terms and conditions of access (including the framework for long term cost recovery) will be regulated over the short, medium and long term; and
  - to provide the long term framework reasonably necessary to achieve UNWP of eligible services supplied by NBN Co to Access Seekers.
- As compared to an alternative that may rely on future access determinations by the ACCC, the SAU is the preferable regulatory mechanism because it can:
  - provide long term regulatory certainty earlier and with more consistency than may be possible via the alternative; and
  - be more procedurally efficient than the alternative.
- NBN Co has developed the SAU following a 2 year process of engagement with industry stakeholders and the ACCC in relation to products, price and non-price terms and conditions and a range of technical and operational matters. As part of this process, NBN Co has also received and considered feedback provided in response to the 28 July 2011 SAU discussion paper.

2.1 Objectives of the SAU

NBN Co has been directed by the Government to develop the NBN to provide a layer 2 wholesale bitstream service, to achieve a particular coverage, speed and technology mix and also to apply a UNWP approach.

NBN Co has lodged the SAU with the following two objectives in mind.

- To provide an appropriate degree of certainty to Access Seekers, their End Users and NBN Co about the access services being offered, and how the price and non-price terms and conditions of access (including the framework for long term cost recovery) will be regulated over the short, medium and long term. Nevertheless, such certainty has to be balanced with an appropriate degree of flexibility to account for evolving technology, applications and demand.

- To put in place a long term framework to achieve UNWP of eligible services supplied by NBN Co to service providers and utilities – NBN Co has been asked by the Government (in its role as shareholder) to pursue such a pricing approach, and recent legislative changes make specific provision for this (see section 6). As a practical matter, NBN Co considers that the framework needs to be long term to account not just for the significantly higher average costs of providing services in rural and remote areas, but also the extent to which initial deployment and operating costs are incurred in advance of migration to the new network, and the expectation that average willingness to pay for NBN access services will rise over time as new applications and services are developed. This means that NBN Co needs an extended period of operations before it could recoup those costs that were initially unrecovered.

Although these objectives could in theory be achieved via ACCC declarations and access determinations, in practice the SAU is the preferable regulatory mechanism because it can:

- provide long term regulatory certainty earlier and with more consistency than may be possible via the alternative (through actual ex ante acceptance of the SAU rather than potential ex post declaration and access determination processes); and

- be more procedurally efficient than the alternative (by placing the onus on NBN Co to propose an appropriate service description and terms and conditions of access, which it is best placed to do, given NBN Co's role as the builder of the NBN and its commercial relationships with Access Seekers).

2.2 Current status of the NBN

The NBN is a long term project that is intended to meet the changing needs of Australian residential and business end-users over a period of several decades. This is reflected in the direction given by the Government to NBN Co in December 2010:

> *The Government expects that NBN Co will design, build and operate a new NBN to provide access to high speed broadband to all Australian premises. The Government's objective for NBN Co is to connect 93 per cent of Australian homes, schools and businesses with fibre-to-the-premises technology providing broadband speeds of up to 100 megabits per second, with a minimum fibre coverage obligation of 90 per cent of Australian premises.*

> *All remaining premises will be served by a combination of next generation fixed wireless and satellite technologies providing peak speeds of at least 12 megabits per second.*[1]

No longer just policy, the NBN is now practical reality in the Australian telecommunications industry. This is evident in the fact that NBN Co has:

- commenced its nationwide construction program that will eventually see the NBN offering coverage to every one of Australia's 13 million premises (as will exist by 2021);
    - with the recent signing of construction contracts covering South Australia and the Northern Territory, NBN Co has now established a program of construction works to deploy a new fixed access network to every state and territory of Australia;
    - over the 12 months to September 2012, design and construction will commence in areas covering close to 500,000 premises, with full national deployment to be completed over 10 years;
- signed definitive agreements with Telstra and an agreement with Optus, relating amongst other things to migration from legacy networks to the NBN;
- commenced billing of Access Seekers under trial agreements, with product pricing as announced in December 2010[2] that is consistent with that underlying the SAU; and
- published the WBA, offered for an initial 12 month term pending ACCC's consideration of the SAU – this will replace the existing trial agreements.

Although the ongoing development of the NBN does not depend upon acceptance of a SAU, it has been NBN Co's consistently expressed intention to lodge a SAU and to operate using both a SAU (if accepted) and a SFAA as permitted by NBN Co's access regime. Consequently, while the outcomes of the regulatory process will clearly have implications for the terms and conditions on which access is subsequently offered, NBN Co will continue to develop the NBN in accordance with the Government's expectations of coverage, speed and technology mix, and will do so subject to a number of well established Government and Parliamentary oversight mechanisms.

2.3 Prior consultation with industry

NBN Co has developed the SAU following a two year engagement process with industry stakeholders in relation to products, price and non-price terms, contractual arrangements and a range of technical and operational matters. This engagement process commenced within months of NBN Co's formation, with the release in December 2009 of its first Product Consultation Paper and has continued since then, incorporating public fora, discussion

---

[1] Statement of Expectations, 17 December 2010, p.1.

[2] NBN Co, *Wholesale Access Service, Product and Pricing Overview for Access Seekers*, December 2010.

papers inviting written feedback and face to face meetings between NBN Co staff and Access Seekers.

This consultative process has helped significantly in shaping the product and access arrangements that NBN Co has now crystallised in the SAU and its initial WBA. Customer engagement processes are built into the structure of these documents to ensure that the positive outcomes generated by this approach to date can continue to occur.

Building on the activities in prior years, consultation during 2011 has included:

- direct consultation with Service Providers to collect their product requirements and develop/refine each NBN Co offering;
- two series of public workshops in both Sydney and Melbourne, held in April and July 2011, on the WBA – in parallel, NBN Co has engaged in direct discussions with individual Access Seekers about specific terms and conditions. Commencing in 2010, this has resulted in 5 draft versions of the WBA for industry to provide feedback on;
- consultation with Service Providers around their specific product requirements relating to the NBN Co business, Multicast and Facilities Access products;
- two series of Customer Collaboration Fora, held in February and November 2011, where NBN Co presented detailed product, construction, operations and on-boarding updates in each of the five major capital cities;
- multiple presentations to Communications Alliance and its members around, for example, product technology, Multicast and Facilities Access; and
- dedicated customer 'deep dives' on the User Network Interface – Voice (UNI-V) telephony feature set.

NBN Co has also started conducting 'Customer Focused Design' analysis of the Service Provider and End User experience with those NBN Co products that are already operating in the market. This involves NBN Co working closely with Service Providers and End Users to collect feedback and insights, which will allow NBN Co to further improve products, processes and the overall customer experience. Customer Focused Design analysis has recently been undertaken for the first fibre products release (launched April 2011) and is currently underway for the first satellite product release (launched July 2011). NBN Co intends to do this with each product that is released.

In addition to the consultation on its products, pricing and wholesale agreements, NBN Co has also engaged in direct consultation with industry on the development of its SAU. This took the form of industry workshops in July 2011, together with the release of a Discussion Paper which outlined the key design features of the SAU at that time. As a result, NBN Co received responses from six Access Seekers, and provided the opportunity for face to face meetings between Access Seekers and NBN Co to discuss issues that were raised.

Recognising that NBN Co only presented an overview of the proposed SAU rather than the detailed drafting of the SAU, respondents concentrated on a number of key elements that they saw as central to the operation of the SAU. In summary, the elements highlighted were:

- the operation of the Regulatory Asset Base (RAB) and Initial Cost Recovery Account (ICRA);
- the term of the undertaking;
- interaction of the SAU with the WBA;
- the nature and operation of the price control commitments, including the price shock mechanism;
- price level and structure (including CVC pricing);
- WACC;
- prudency of investment; and
- non-price commitments.

In response to this initial feedback from industry, as well as NBN Co's ongoing engagement with the ACCC on the development of its SAU, NBN Co has modified and simplified its originally proposed SAU approach to (amongst other things):

- introduce a significant mid-term review and reset of the SAU at around the time of privatisation (in any event the review must commence by 1 July 2027) to address concerns that the arrangements in the SAU may need to be re-addressed at that time;
- strengthen the linkages between the WBA and SAU, so that the WBA will always be consistent with any accepted SAU;
- provide a substantial 'regulatory recourse' role for the ACCC when Access Seekers and NBN Co cannot reach agreement on terms of access;
- significantly simplify and streamline the price control arrangements, so that all products would be subject to an individual annual price change no more than CPI/2, with the previously proposed "price shock" mechanism withdrawn;
- simplify the approach to WACC, so that it allows NBN Co to achieve its Corporate Plan objectives and deliver a return above the long term bond rate; and
- significantly expand the set of non-price commitments included in the SAU, to provide additional certainty to industry in relation to the evolution of contractual terms in the WBA over the term of the SAU.

NBN Co had intended to engage in additional industry consultation on the SAU prior to lodging it with the ACCC. However, given the significant changes made to the SAU design since the release of the July discussion paper, the understandable desire of industry participants to have visibility of the SAU at the time of publication of the WBA and NBN Co's desire to have a SAU in place as soon as feasible, NBN Co has instead decided to lodge the SAU now.

2.4 Prior consultation with the ACCC

In addition to the consultation with industry described in the previous section, NBN Co has been engaged in ongoing discussions with the ACCC in relation to the development of the SAU over the past two years. This has assisted NBN Co in the preparation of the SAU, but NBN Co acknowledges that this ongoing consultation does not imply any particular endorsement by the ACCC of the SAU as lodged. Before deciding whether to accept the SAU, the ACCC will conduct a consultation process. That consultation process will provide industry with the opportunity to respond to the SAU as a package of commitments with a clear interaction with the WBA.

However, NBN Co does note that the ACCC has provided some key considerations which it believes should be taken into account by NBN Co in developing its access arrangements (covering both the SAU and WBA). NBN Co described these considerations in its July discussion paper on the SAU, and these are reproduced below as they provide important context for the SAU.

- *Prices for NBN Co's services should be set such that, over time, NBN Co is able to earn sufficient revenues to enable it to recover the prudent and efficient costs it incurs in the long run in providing the services (including a reasonable rate of return), and no more.*
- *Pricing arrangements should provide a reasonable degree of regulatory certainty for both NBN Co and Access Seekers, such that NBN Co's profitability and ability to finance the project are not unduly impacted and Access Seekers have sufficient certainty in order for them to make efficient investment decisions in respect to downstream markets. This will necessitate defined review points at which the ACCC makes decisions about certain elements of any price or revenue constraints (for example, the appropriate cost of capital), as is standard practice in other regulated industries.*
- *The regulatory framework should provide NBN Co with incentives to invest in new services and new infrastructure in a prudent and efficient manner.*
- *The regulated rate of return should reflect the risks associated with the regulated assets in question, including the risks imposed (or alleviated) by the regulatory regime itself.*
- *The regulatory access framework should allow sufficient pricing flexibility to accommodate changing circumstances, but should include scope for periodic*

and independent review to ensure that prices are not set above a reasonable level.

- *Importantly, Access Seekers should not be subject to barriers imposed by exiting access agreements if they wish to respond to regulatory events, such as the making by the ACCC of a binding rule of conduct or access determination, or the acceptance of a SAU.*

- *An independent and fair process should be available to both NBN Co and Access Seekers for the resolution of disputes that arise in relation to the terms and conditions on which services are provided.*

- *The arrangements should include appropriate incentives for NBN Co's compliance with the terms on which it proposes to offer services. In particular, the penalties or liabilities resulting from non-compliance should be sufficient to act as an effective deterrent.*

- *Regarding changes to terms and conditions over time, for terms which describe fundamental relationships between the parties, there should not be a power that allows unilateral amendments by NBN Co. Such changes should require agreement between NBN Co and Access Seekers. All changes should be made with sufficient notice for consultation (notice periods may vary depending on the nature of the change) and consideration of responses by NBN Co in good faith.*

- *Terms and conditions relating to network upgrades and modifications should contain procedures that minimise disruptions to End Users, including provision of adequate notice periods for planned modifications and procedures for minimising disruption in the case of emergencies or unforseen events.*

- *There should be practical and transparent procedures for consulting with Access Seekers and other affected stakeholders in relation to the development, introduction and withdrawal of NBN products and in considering network upgrades and modifications.*

- *Arrangements for access to buildings, shelters and facilities for interconnecting with the NBN, including in the event of capacity constraints, should be specified, and be at a minimum similar to those which currently exist and are based on industry standards, the Telecommunications Act 1997 and the Facilities Access Code.*

- *Billing and invoicing procedures should be reliable and ensure accurate and timely notification to Access Seekers, provide practical payment processes, and include mechanisms for resolving billing disputes in a fair and timely manner.*

- *There should not be blanket obligations to provide security or credit information before access can be given, as this may impede the Access Seeker's ability to readily compete in the market. Such steps should only be taken where necessary, such as for a new Access Seeker or one with a history of poor creditworthiness.*

NBN Co has sought to structure its SAU and WBA in a way that facilitates the outcomes that have been identified by the ACCC. In addition, the wider context in which NBN Co operates, which is described in earlier parts of this section, has also been considered by NBN Co in seeking to develop a SAU that best addresses and balances the interests of Access Seekers, their End Users and NBN Co.

3 Legislative framework for assessing the SAU

Key points

- Subsection 152CBD(2) of the CCA requires that the ACCC must not accept a SAU unless the ACCC is satisfied that:
  - the terms and conditions of the SAU are consistent with Category B SAOs in section 152AXB;
  - the terms and conditions of the SAU are reasonable; and
  - the SAU is consistent with any Ministerial pricing determinations.
- However, in accordance with subsection 152CBD(5A) and (5C) of the CCA, the ACCC must not reject the undertaking for a reason that concerns:
  - price-related terms and conditions, or
  - a refusal to permit interconnection at a location that is not a listed POI, or
  - a refusal to unbundle the supply of designated access services (being an AVC service; or a CVC service; or a NNI service; or a UNI service; or a voice telephony facilitation service),

  where the relevant price-related terms and conditions or refusals are reasonably necessary to achieve uniform national pricing of eligible services supplied by a NBN corporation to service providers and utilities.

3.1 Consistency with Category B SAOs

Subparagraph 152CBD(2)(b)(i) of the CCA requires the ACCC to be satisfied that the terms and conditions set out in the SAU would be consistent with Category B SAOs, to the extent that those obligations would apply to a NBN corporation in relation to the service, as if the service were treated as an active declared service under subsections 152AL(8A), 152AL(8D) or 152AL(8E).

Broadly, the Category B SAOs under section 152AXB of the CCA impose:

- a requirement for a NBN corporation to supply a declared service on request to a service provider in order that the service provider can provide Carriage Services and/or Content Services[3];
- a requirement for a NBN corporation to permit interconnection to telecommunications facilities it owns or controls, if requested to do so by a service

[3] This requirement is subject to a number of exception including protection of the reasonably anticipated usage of a service provider who already has access to the declared service, protection of the reasonably anticipated usage of a NBN corporation and protection to service providers who have contractual rights to obtain a sufficient level of access. Subsections 152AXB(2) and (3) of the CCA

provider, for the purpose of enabling the service provider to be supplied with declared services in order that the service provider can provide Carriage Services and/or Content Services[4]; and

- a requirement for a NBN corporation that supplies a declared service by means of conditional-access customer equipment to supply on request any related service that is necessary to enable a service provider to supply its relevant retail service and/or Content Services by means of the declared service and using the equipment[5].

The requirements for a NBN corporation to comply with Category B SAOs are subject to a number of exceptions including where the NBN corporation considers (on reasonable grounds), that:

- the Access Seeker would fail to materially comply with the terms and conditions on which the NBN corporation complies, or is reasonably likely to comply.[6] The CCA provides a non-exhaustive list of examples of exceptions including evidence that an Access Seeker is not credit worthy and repeated failures by an Access Seeker to comply with the terms and conditions on which the same or similar Access Seekers have been provided[7]; or
- the Access Seeker would not protect the integrity of a telecommunications network or the safety of individuals working on, or using services supplied by means of, a telecommunications network or a facility.[8]

Further, for the purposes of assessing consistency with SAOs, the ACCC must not consider:

- price-related terms and conditions, or
- a refusal to permit interconnection at a location that is not a listed POI, or
- a refusal to unbundle the supply of designated access services (being an AVC service; or a CVC service; or a NNI service; or a UNI service; or a voice telephony facilitation service),

where the relevant price-related terms and conditions or refusal are reasonably necessary to achieve uniform national pricing of eligible services supplied by the NBN corporation to service providers and utilities.[9] This exception relating to uniform national pricing is discussed in detail below at section 3.4.

---

[4] Subsection 152AXB(4) of the CCA
[5] Subsection 152AXB(5) of the CCA. 'Conditional-access customer equipment' is defined in section 152AC of the CCA. The definition is intended to capture any customer equipment that: consists of or incorporates a conditional access system that allows a service provider to determine whether an end user is able to receive a particular service; and is intended for use in connection with the supply of a content service or is of a particular kind of equipment that is specified in the regulations.
[6] Paragraph 152AXB(6)(a) of the CCA
[7] Subsection 152AXB(7) of the CCA
[8] Paragraph 152AXB(6)(b) of the CCA
[9] Subsections 152CBD(5A) and (5C) of the CCA

3.2 Assessment of reasonableness

Under subparagraph 152CBD(2)(b)(ii) of the CCA, the ACCC cannot accept a SAU submitted by a NBN corporation unless it is satisfied that the terms and conditions specified are reasonable.

In its 2007 draft decision on the assessment of FANOC's SAU in relation to the Broadband Access Service (FANOC Decision), the ACCC noted that it does not determine reasonableness in a vacuum and that the terms and conditions of the SAU are always referrable to the objectives of Part XIC set out in section 152AB[10] and the reasonableness criteria under section 152AH[11] of the CCA.

In determining whether terms and conditions are "reasonable", regard must be had to the following matters[12]:

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

These matters do not limit the matters to which the ACCC may have regard to in considering reasonableness.[13]

The ACCC noted in the FANOC Decision that in order to have 'regard' to particular matters, it is required to take the matters in section 152AH of the CCA into account and give weight to them as fundamental elements in making its determination.[14]

The ACCC also noted that it is required to determine whether the terms and conditions of an undertaking are reasonable, not whether they are the best possible terms and conditions or whether they could be improved. This approach is supported by the Australian Competition

[10] The object of Part XIC of the CCA is to promote the LTIE of carriage services or of services provided by means of carriage service.
[11] Subsections 152AH(1) and (2) of the CCA
[12] Subsection 152AH(1) of the CCA
[13] Subsection 152AH(2) of the CCA
[14] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.21

Tribunal (the Tribunal), which in the context of assessing reasonableness of Telstra's pricing methodology in *Telstra Corporation Limited [2006] ACompT 4* noted that:[15]

> *In this analysis we are limiting ourselves to asking whether Telstra's charge term and its cost allocation method is reasonable having regard to the statutory matters. We are not concerned to enquire whether any other price term or cost allocation method is more reasonable.*

The ACCC has also outlined that it is the terms and conditions of the SAU as a whole that must be taken into account in assessing reasonableness of the SAU. [16]

In relation to price terms and conditions, the ACCC has noted that there is no one correct figure in determining reasonable costs as this will entail matters of judgement. However the ACCC's assessment will entail determining whether the submitting party's method or approach to calculating its costs is reasonable having regard to the statutory criteria.[17]

Further, the ACCC has noted that reasonableness is not determined by reference to what would exist if the undertaking was not accepted. In this sense, there is no "with and without" test in applying the reasonableness test. It may be appropriate to apply the test to individual criteria (for example, the promotion of the LTIE – see discussion in section 3.2.1 below) or in specific circumstances to assist in the assessment, but ultimately, the reasonableness test is applied as a stand-alone test.[18]

The ACCC has indicated that the 'with and without' test should only be applied in having regard to those criteria where it facilitates (as opposed to determines) the ACCC's analysis in determining the overall reasonableness of the terms and conditions.[19]

The elements involved in assessing reasonableness are discussed further below:

3.2.1 Promotion of long-term interests of end-users (LTIE)

In considering whether terms and conditions of a SAU promote the LTIE, regard must be had only to the extent to which the terms and conditions achieve the following objectives:

- promoting competition in markets for listed services;
- achieving any-to-any connectivity in relation to carriage services that involve communication between end-users; and
- encouraging the economically efficient use of, and the economically efficient investment in: (i) the infrastructure by which listed services are supplied; and (ii) any

---

[15] *Telstra Corporation Limited [2006] ACompT 4 at* [150]. See also *Seven Networks Limited (No 4)* (2005) ATPR 42-056 at [119].

[16] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.31

[17] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.22

[18] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.31

[19] ACCC, *Final Decision: Assessment of Foxtel's Special Access Undertaking in relation to the Digital Set Top Unit Service, March 2007,* p.122

other infrastructure by which listed services are, or are likely to become, capable of being supplied.

The Tribunal has discussed the meaning of LTIE and clarified the definitions of the following terms:

- "*end-users*": should be interpreted to include actual and potential customers; and
- "*interest*": should be interpreted in the sense that end-users would obtain lower prices, increased quality of service and increased diversity and scope in product offerings; and
- "*long-term*": should be interpreted to mean the period over which the full effects of the Tribunal's decision will be felt.20

In its decision in *Application by Chime Communications Pty Ltd (No 2) [2009] ACompT 2 (27 May 2009)***,** the Tribunal stated that the assessment of the LTIE involves a comparison between the factual and counter factual scenarios, i.e. a future with or without test. The Tribunal noted:[21]

> *The task of deciding what is likely to happen in the future is not simply a matter of guesswork. Logically the first step is to examine the existing state of affairs as regards the three objectives: promoting competition, achieving any-to-any connectivity and encouraging economic efficiencies.*

The Tribunal referred to the earlier Tribunal decision in *Re Seven Network Limited (No 4) (2004) 187 FLR 373.* In that decision, the Tribunal stated:[22]

> *a degree of satisfaction is reached by applying the future with and the future without test, that is to say we compare the future situation with the exemption orders having been made with the future situation without the exemption orders having been made. We then ask the question which situation is in the [long-term interests of end-users].*

i *Promotion of competition*

In considering whether competition will be promoted, subsections 152AB(4) and 152AB(5) of the CCA provide that in determining the extent to which a particular thing is likely to result in the achievement of the promotion of competition, regard must be had to the extent to which the thing will remove obstacles to end-users of listed services gaining access to listed services.

This consideration does not however limit matters to which regard may be had in considering the promotion of competition.

[20] *Seven Network Limited (No 4) [2004] ACompT 11 at [120]*
[21] *Application by Chime Communications Pty Ltd (No 2) [2009] ACompT 2 (27 May 2009)pp.12-14*
[22] *Seven Network Limited (No 4) [2004] ACompT 11 at [119]*

The ACCC has also expressed the view that the key issue in determining whether a regulatory decision will promote competition is whether the decision will assist in establishing conditions by which an improvement in competition will be likely to occur.[23]

This view reflects the view of the Tribunal in *Re Sydney International Airport*, which stated:[24]

> *The Tribunal does not consider that the notion of "promoting" competition in s 44H(4)(a) requires it to be satisfied that there would be an advance in competition in the sense that competition would be increased. Rather, the Tribunal considers that the notion of "promoting" competition in s 44H(4)(a) involves the idea of creating the conditions or environment for improving competition from what it would be otherwise. That is to say, the opportunities and environment for competition given declaration, will be better than they would be without declaration.*

ii Achieving any-to-any connectivity

The ACCC has noted that the objective of any-to-any-connectivity is particularly relevant when considering services that involve communications between end-users, and has stated that this criterion will be given less weight compared to the other objectives when considering other types of services (such as carriage services that are inputs to an end-to-end service or distribution services such as the carriage of pay television).[25]

iii Encouraging economically efficient use of, and economically efficient investment in, infrastructure

The ACCC has previously noted that the phrase ‘economically efficient use of, and economically efficient investment in, infrastructure’ requires considering three components of efficiency*:*

- productive efficiency – this is achieved where individual firms produce the goods and services that they offer at least cost;
- allocative efficiency – this is achieved where the prices of resources reflect their underlying costs so that resources are allocated to their highest valued uses (i.e. those that provided the greatest benefit relative to costs);
- dynamic efficiency – this reflects the need for industries to make timely changes to technology and products in response to changes in consumer tastes and in productive opportunities.

In looking at the question of whether a particular measure results in economically efficient use of and investment in infrastructure, subsection 152AB(6) of the CCA provides that regard must be had to the following:

- whether it is, or is likely to become, technically feasible for the services to be supplied and charged for, having regard to:

[23] ACCC, *Assessment of FANOC’s Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.33
[24] *Re Sydney International Airport [2000] ACompT 1 (1 March 2000)*, paragraph 106
[25] ACCC, *ACCC advice to Government on NBN POIs,* November 2010, p.82

- the technology that is in use, available or likely to become available; and
- whether the costs that would be involved in supplying, and charging for, the services are reasonable or likely to become reasonable; and
- the effects, or likely effects, that supplying, and charging for, the services would have on the operation or performance of telecommunications networks;

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

The above factors do not limit the matters to which regard may be had in considering whether a term or condition results in encouraging the economically efficient use of, and economically efficient investment in, infrastructure.

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

3.2.2 Legitimate business interests

A Carrier's 'legitimate business interests' are confined to what is regarded as allowable and appropriate when negotiating access to its infrastructure. In *Re Telstra Corporation Ltd,* the Tribunal stated that[26]:

> *... In the context of section 152AH (1)(b), the expression connotes something which is allowable and appropriate when negotiating access to the carrier's infrastructure. When looked at through the prism of a charge term and condition of access and its relationship to a carrier's cost structure, it is a reference to the interest of a carrier in recovering the costs of its infrastructure and its operating costs and obtaining a normal return on its capital.*

The ACCC has also outlined that the criterion requires an assessment of the broader commercial interests of the service provider in conducting its own business affairs. An access provider should not be unduly compromised in the conduct of its own legitimate business interests simply because it has an obligation to provide access to its service. By way of example the ACCC noted that an access provider must be able to make appropriate decisions about modifications and upgrades to its network or set appropriate requirements for billing and the payment of accounts. Generally, an access provider is entitled to have some

[26] *Re Telstra Corporation Limited (ACN 051 775 556) [2006] ACompT 4 (2 June 2006)*

legitimate control over its relationship with an Access Seeker to the extent reasonably required to protect its business concerns.[27]

3.2.3 Interests of persons who have rights to use the declared services

The ACCC has stated that it is the interest of all Access Seekers that will be relevant. In the FANOC Decision the ACCC noted:[28]

> *In respect of the interests of persons who may wish to use the service in question in the event that the service is declared, the ACCC's focus is not on any one particular Access Seeker but all potential Access Seekers who may seek to use the service.*

The ACCC's approach to considering interests of persons who have the right to use the declared service involved ensuring that an Access Seeker is able to compete in the supply of service in a dependant market based on cost and quality of its service relative to its competitors, rather than about ensuring that an Access Seeker is able to conduct a profitable business.

3.2.4 Direct costs of providing access to the declared service

In making its final access determinations for fixed line services, the ACCC noted that the term 'direct costs of providing access to a declared service includes those costs incurred (or caused) by the provision of access. Further the ACCC considered that the use of the term 'direct costs', allowed for consideration to be given to a contribution to indirect costs. The ACCC noted that this view had also been confirmed by the Tribunal.[29]

3.2.5 Safety and reliability

The ACCC has noted that the objective of this criterion is to ensure that the access prices that are the subject of a SAU do not lead to arrangements between parties that will result in or encourage the unsafe or unreliable operation of a carriage service.[30]

In examining this criterion in the context of an ordinary access undertaking submitted by Telstra, the Tribunal noted that a service provider will have sufficient incentive to ensure the safe and reliable operation of carriage services, telecommunications networks or facilities, so as long as it receives sufficient revenue to cover the costs of ensuring safe and reliable operations. The Tribunal equated 'sufficient revenue' with a price for the service that enabled recovery of efficient costs inclusive of a normal return on investment.[31]

The ACCC noted that a Carrier or Carriage Service Provider (CSP) will generally seek to have in place operations and procedures designed to ensure the integrity of a network or facility

---

[27] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.38

[28] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.39

[29] ACCC, *Final Decision: Inquiry to make final access determinations for the declared fixed line service,* July 2011, p.22; *Application by Optus Mobile Pty Limited and Optus Networks Pty Limited [2006] ACompT 8 at [137].*

[30] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service draft decision*, December 2007, p.40

[31] *Telstra Corporation Ltd (No 3) [2007]* ACompT 3 at 277

is not harmed. As such the ACCC will consider whether any non-price terms and conditions, purportedly in relation to the safe operation of a network, are not used as a barrier to effective access. [32]

3.2.6 Economically efficient operation of the network

The ACCC had indicated that the concept of 'economically efficient operation' does not limit the considerations to networks and facilities operated by the access provider, but would include those operated by others, including service provided by Access Seekers.[33]

In examining this criterion, the Tribunal has noted:

> *The factors that are likely to encourage the economically efficient use of, and the economically efficient investment in, the infrastructure … are similar to those factors which are likely to lead to the economically efficient operation of a carriage service, a telecommunications network or a facility.*[34]

3.3 Consistency with any Ministerial pricing determinations

Division 6 of Part XIC provides that the Minister can make a written determination setting out principles dealing with price or a method of ascertaining a price relating to the SAOs. Subsection 152CI(1) of the CCA provides that if a provision of an access undertaking is inconsistent with any Ministerial pricing determination, the provision will have no effect to the extent of that inconsistency.

The Minister has not made a pricing determination in relation to the NBN Access Service.

3.4 Consideration of uniform national pricing in assessing SAU

3.4.1 Price-related terms and conditions reasonably necessary to achieve uniform national pricing

Subsection 152CBD(5A) of the CCA prevents the ACCC from rejecting a SAU for a reason that concerns price-related terms and conditions that are reasonably necessary to achieve uniform national pricing of eligible services supplied by NBN Co. Such a price-related term or condition would be excluded from the ACCC's consideration of whether the terms and conditions of the SAU are consistent with Category B SAOs and are reasonable.

The supplementary Explanatory Memorandum to the *Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2011* (NBN Access Bill) provides:

> *…subsection 152CBD(5A) prevents the ACCC from rejecting a special access undertaking if that undertaking contains price-related terms and conditions (within the meaning of s151DA), which are attributable to cross-subsidisation and the extent of such cross-subsidisation is no greater than is reasonably necessary. This*

[32] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service draft decision*, December 2007, p.40

[33] ACCC, *Assessment of Telstra's ULLS monthly charge undertaking - final decision*, August 2006, p 24.

[34] *Telstra Corporation Ltd (No 3) [2007]* ACompT 3 at 279

> *amendment ensures that the ACCC cannot reject a special access undertaking for a reason that concerns cross-subsidisation.*[35]

The CCA provides that uniform national pricing is achieved if the price-related terms and conditions on which NBN Co supplies, or offers to supply, the eligible service to service providers and utilities are the same throughout Australia.[36]

Section 151DA of the CCA defines price-related terms and conditions as terms and conditions relating to price or a method of ascertaining price.

3.4.2 Terms and conditions in the SAU relating to authorised refusal

Subsection 152CBD(5C) of the CCA prevents the ACCC from rejecting the SAU for a reason that concerns a refusal authorised under subsections 151DA(2) and (3) of the CCA for the purposes of subsection 51(1) of the CCA.[37]

- Subsection 151DA(2) sets out authorised conduct relating to POIs . The provision authorises NBN Co to refuse to permit interconnection to its facilities that are not identified in the listed POIs38 provided that the refusal is reasonably necessary to achieve uniform national pricing of services supplied by a NBN corporation.
- Subsection 151DA(3) sets out authorised conduct relating to bundling of designated access services provided by NBN Co. The provision authorises NBN Co to refuse to supply or refuse to offer the supply a designated access service to a service provider unless the service provider agrees to acquire one or more other designated access services from NBN Co, provided the refusal is reasonably necessary to achieve uniform national pricing of services supplied by a NBN corporation. Designated access service is defined in subsection 151DA(8) to cover any of the following Carriage Services; an AVC service, a CVC service, a NNI service, a UNI service and a voice telephony facilitation service.

If subsection 151DA(2) or (3) applies, the ACCC is also required to disregard the relevant price-related terms and conditions in considering whether the terms and conditions of the SAU are consistent with Category B SAOs and are reasonable.

[35] Supplementary Explanatory Memorandum, NBN Access Bill, p.15
[36] Section 151DA(5) of the CCA
[37] Section 51 of the CCA provides that, in determining whether a person has contravened Part IV of the CCA, certain matters must be disregarded, including anything specified in, and specifically authorised by, an Act.
[38] Subsection 151DB of the CCA requires the ACCC to publish a list of POIs. The authorisation relates to refusal to supply at facilities not on the ACCC's list of POIs.

3.5 Assessment of specified conduct in the SAU

3.5.1 Specified conduct in relation to access to the declared service

Subsection 152CBA(3B) provides for a NBN corporation to outline in the SAU that it will engage in specified conduct in relation to access to the declared service and will do so on such terms and conditions as are specified in the SAU. This subsection enables a NBN corporation to undertake obligations relating to access to the service that are additional to the obligations contained in the Category B SAOs in section 152AXB.

If such conduct is specified in the SAU[39], then in accordance with paragraph 152CBD(2)(ca)of the CCA, the ACCC cannot accept the SAU unless it is satisfied that the conduct specified will promote the LTIE and the terms and conditions are reasonable.

3.5.2 Specified conduct in relation to a listed activity

Subsection 152CBA(3C) provides for a NBN corporation to outline in the SAU that it will engage in specified conduct in relation a number of activities listed in the section. The activities specified are:[40]

- developing a new eligible service (within the meaning of section 152AL of the CCA); or
- enhancing a declared service; or
- extending or enhancing the capability of a facility or telecommunications network by means of which a declared service is, or is to be, supplied; or
- planning for a facility or telecommunications network by means of which a declared service is, or is to be, supplied; or
- an activity that is preparatory to the supply of a declared service; or
- an activity that is ancillary or incidental to the supply of a declared service; or
- giving information to service providers about any of the above activities.

If such conduct is specified in the SAU, then in accordance with paragraph 152CBD(2)(cb) of the CCA the ACCC cannot accept the SAU unless it is satisfied that the conduct specified will promote the LTIE of carriage services or of services supplied by means of carriage services.

3.6 Other relevant legislative provisions – NBN Co's non-discrimination obligations

Subsection 152AXC(1) of the CCA states that a NBN corporation must not 'discriminate between Access Seekers' in complying with its Category B SAOs. There are, however, limited circumstances in which discrimination in the supply of services is expressly permitted. This includes where NBN Co has reasonable grounds to believe that an Access Seeker would fail,

[39] NBN Co has covered this aspect of the legislation framework for completeness, even though no such conduct is actually specified in the SAU.
[40] Paragraphs 152CBA(3C)(a)-(g) of the CCA

to a material extent, to comply with the terms and conditions on which NBN Co complies, or on which NBN Co is reasonably likely to comply, with the relevant obligation.[41] Examples of such circumstances include where an Access Seeker is not creditworthy or has repeatedly failed to comply with the terms and conditions on which the same or similar access has been provided.[42]

For example, one of the key objectives of the Dispute Management Rules is to ensure that NBN Co is capable of complying with its statutory non-discrimination obligations. The need for a special process to deal with Industry Relevant Disputes arises because it is likely that matters at issue in a dispute between NBN Co and one Customer will have an impact on other Customers. Accordingly, NBN Co has included in the SAU a special dispute resolution process in which multiple parties can become involved in one dispute with NBN Co.

In addition, subsection 152AXD(1) of the CCA prohibits NBN Co from discriminating between Access Seekers in the carrying on of activities related to the supply of declared services.

The relevant ‘related activities’ are:

- developing a new eligible service;
- enhancing a declared service;
- extending or enhancing the capability of a facility or telecommunications network by means of which a declared service is, or is to be, supplied;
- planning for a facility or telecommunications network by means of which a declared service is, or is to be, supplied;
- an activity that is preparatory to the supply of a declared service;
- an activity that is ancillary or incidental to the supply of a declared service; and
- giving information to service providers about any of the above activities.

Section 152CJH of the CCA requires the ACCC, as soon as practicable after the commencement of the section, to publish on its website explanatory material relating to the non-discrimination provisions.

Relevantly the Explanatory Memorandum to the NBN Access Bill states that the ACCC would refer to its explanatory material when assessing a SAU.[43] The ACCC released draft non-discrimination guidelines on 13 December 2011.[44]

[41] Subsection 152AXC(2) of the CCA
[42] Subsection 152AXC(3) of the CCA
[43] Revised Explanatory Memorandum to the NBN Access Bill, p. 148
[44] Submissions on the draft guidelines are sought by 3 February 2012.

Part B – SAU Content

4 Design of the SAU

Key points

- The SAU is comprised of three broad elements: service description; price-related terms and conditions; and non-price related terms and conditions.
- Consistent with the objectives of regulatory certainty and UNWP, the high level design of the SAU includes:
  - a 30 year term with a mid-term review;
  - broad coverage of NBN Co services;
  - explicit interaction with the WBA; and
  - utilisation of a series of largely self-executing rules, but with some discrete powers conferred on the ACCC.
- Structurally, the SAU consists of a main body and 12 schedules, and represents an integrated package of commitments.

4.1 Key SAU Features

The SAU is comprised of three elements:

- service description (see section 5);
- price-related terms and conditions (see section 6); and
- non-price related terms and conditions (see section 7).

In approaching the design of the SAU, NBN Co has had regard to the context for the SAU (as discussed in the preceding sections), in particular the objectives of providing: an appropriate degree of regulatory certainty to Access Seekers, their End Users and NBN Co; and the long-term framework reasonably necessary to achieve UNWP.

At a high level, this has led to NBN Co designing the SAU with:

- a term that covers the 30 years of NBN Co's Corporate Plan to June 2040 (referred to throughout this submission as a "30 year term"), but with a mid-term review in the lead up towards privatisation of NBN Co. The review will cover the approach to the prudency of capital expenditure and operating expenditure (including the potential use of incentive based mechanisms) and the approach to setting the WACC. This review may be widened by NBN Co to include a range of other matters (as it is not possible for NBN Co to determine, with certainty, now which other matters should be reviewed);

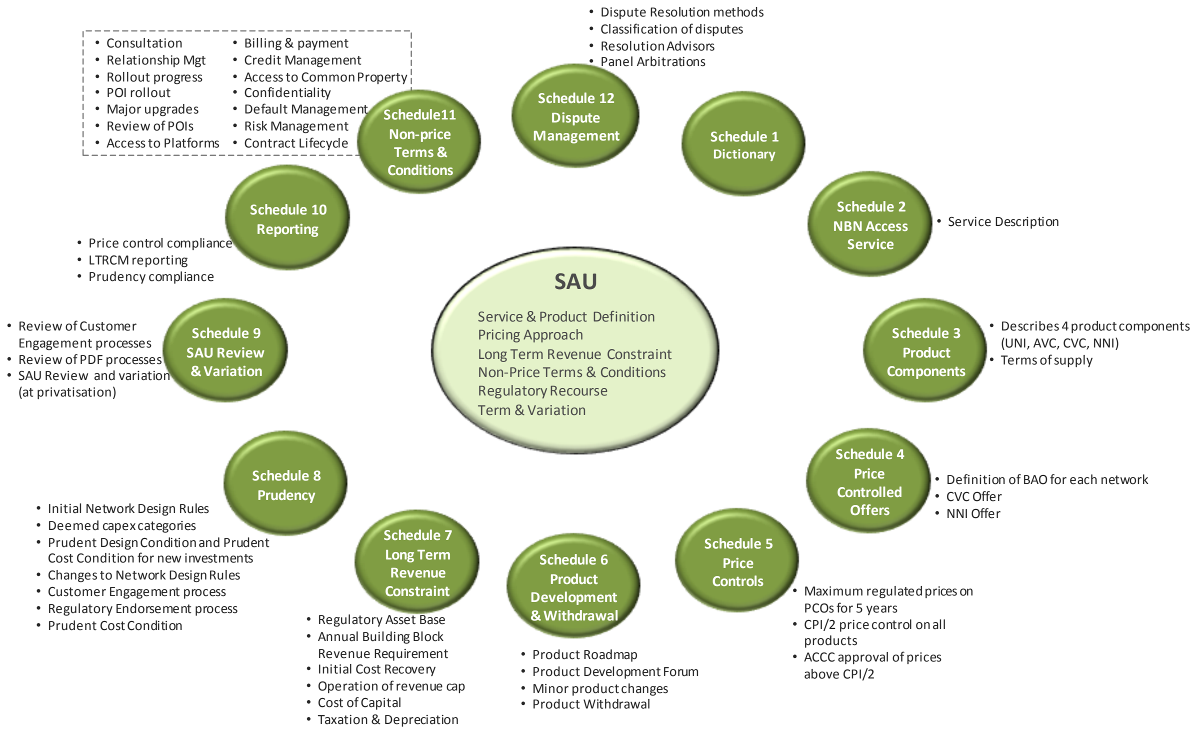
- broad coverage of NBN Co services – all of NBN Co's Product Components, Product Features and Ancillary Services are covered by the SAU;
- explicit linkage to the WBA, noting that the SAU provides that:
    - Access Seekers may elect whether to have their individual Access Agreements aligned with any accepted SAU; and
    - if NBN Co proceeds with a unilateral change to an Access Agreement following consultation with the Customer, and the ACCC makes either an interim access determination or a binding rule of conduct relating to that change prior to it coming into effect, then NBN Co may only implement the change in a manner consistent with that interim access determination or binding rule of conduct;
- a reliance on a series of largely self-executing rules – these will be considered by the ACCC as part of its decision to accept or reject the SAU and the ACCC will monitor compliance with the rules over the SAU's term;
- a discrete set of powers conferred on the ACCC, including in relation to:
    - a 'regulatory recourse' role when Access Seekers and NBN Co cannot reach agreement on terms of access;
    - assessing a proposal from NBN Co for any price changes above the CPI/2 price increase limit;
    - resolving disputes between NBN Co and its Customers in relation to the prudency of proposed network changes;
    - endorsing proposed network changes put to it by NBN Co;
    - reviewing NBN Co's customer engagement process and Product Development Forum (PDF) processes every 5 years, and requesting a variation to those arrangements;
    - assessing variations to the SAU proposed by NBN Co following the mid-term review; and
    - approving the opening, closing or relocation of POIs.

4.2 Structure of the SAU

The SAU itself consists of a short core body that contains the key terms of the SAU, with the detailed commitments being contained in 12 schedules. As shown in Figure 4.1 below, each schedule covers a discrete set of commitments.

The schedules cannot and do not operate in isolation from each other. Instead, commitments made in one schedule interact with and support commitments in others, even where there is no explicit linkage in the SAU drafting.

Figure 4.1: Overview of key components of the SAU



5 Service description

Key points

- NBN Co has developed the NBN Access Service to give effect to the key directions from the Government, in its role as shareholder, to:
  - connect 93 per cent of Australian homes, schools and businesses with fibre-to-the premises technology with speeds up to 100Mbps, with the remaining premises to be served by a combination of next generation fixed wireless and satellite technologies with peak speeds of at least 12Mbps; and
  - supply open and non-discriminatory access to wholesale services, at the lowest levels in the network stack necessary to promote efficient and effective retail level competition, via Layer 2 bitstream services.
- The SAU defines NBN Co's commitment to supply the NBN Access Service through the use of Product Components (AVC, CVC, UNI and NNI), which cannot be withdrawn by NBN Co.
- This approach is consistent with approaches endorsed by the ACCC, overseas regulators and industry and facilitates NBN Co's overall SAU objective of setting up a long term framework to achieve UNWP of eligible services supplied by NBN Co to Customers.
- NBN Co's use of Product Components promotes competition by providing flexibility for Access Seekers on how they configure services offered to End Users.
- The requirement to acquire all Product Components is appropriate for sound technical and operational reasons, and it is also supported by approaches taken in other jurisdictions.
- The NBN Access Service is consistent with the requirements that the ACCC has previously indicated would be necessary for a layer 2 broadband service to promote the LTIE.

5.1 Development of the NBN Access Service

The NBN Access Service has been developed in the context of key directions provided by Government, in its role as shareholder, to:

- connect 93 per cent of Australian homes, schools and businesses with fibre-to-the premises technology providing broadband speeds of at least 100Mbps, with the remaining premises to be served by a combination of next generation fixed wireless and satellite technologies at peak speeds of at least 12Mbps; [45] and
- supply open and equivalent access to wholesale services, at the lowest levels in the network stack necessary to promote efficient and effective retail level competition, via Layer 2 bitstream services. [46]

In adopting the recommendation in the NBN Implementation Study that active services at Layer 2 provide the best means of levelling the retail playing field in the short term, the Government enacted provisions in the *Telecommunications Act 1997* setting out an obligation on owners of certain telecommunications networks that are capable of supplying superfast carriage services, to supply a Layer 2 bitstream service.[47]

The Revised Explanatory Memorandum to the NBN Access Bill noted that these measures were designed to ensure that other providers of superfast broadband networks in Australia can provide to consumers outcomes similar to those available on the NBN and ensure that NBN Co operates on a more level regulatory playing field to assist it to achieve the range of objectives for which it has been established.[48]

Recent amendments made to the CCA via the NBN Access Bill also require the ACCC to declare a Layer 2 bitstream service as soon as practicable after the commencement of the relevant subsection.[49] The ACCC released a discussion paper on the service description of the layer 2 bitstream service description in August 2011 and issued a draft final report in November 2011. The ACCC has not yet made a declaration.

5.2 NBN Access Service is a Layer 2 wholesale bitstream service

In the context of the broader objectives of the SAU and the specific context noted in section 5.1, NBN Co intends to offer wholesale access to the NBN by means of a Layer 2 wholesale bitstream service supplied over NBN Co's fibre, satellite and wireless networks (NBN Access

---

[45] Statement of Expectations from shareholder Ministers, 17 December 2010, p.1
[46] Statement of Expectations from shareholder Ministers, 17 December 2010, p.2
[47] Part 7, *Telecommunications Act 1997*
[48] Revised Explanatory Memorandum to NBN Access Bill, p.14
[49] Subsections 152AL(3C) and (3D) of the CCA will require (upon their commencement) the ACCC to declare a Layer 2 bitstream service applying only to services supplied using a designed superfast telecommunications network. Under section 152AGA of the CCA (yet to commence), a designated superfast telecommunications network includes a telecommunications network (except the NBN) used, or proposed to be used, to supply one or more Layer 2 bitstream services, and used, or proposed to be used to supply a superfast carriage service, to residential or small business customers, provided that the network came into existence after 1 January 2011 or is upgraded after that time and as a result becomes capable of supplying a superfast carriage service.

Service). This section addresses some of the benefits and features of the service description that NBN Co has adopted in addressing the direction from Government (described in section 5.1).

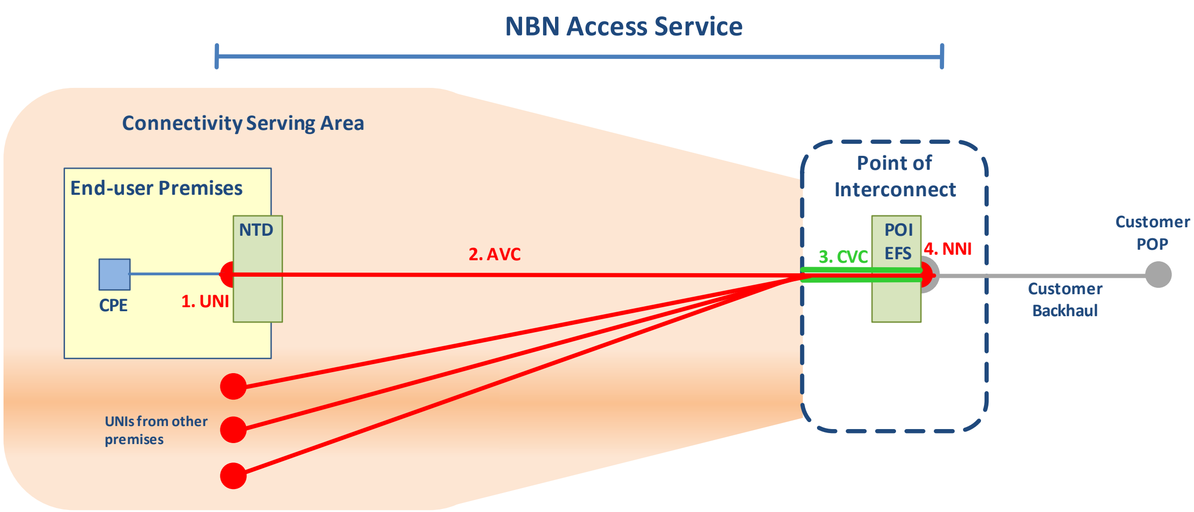
The NBN Access Service represents an 'end to end' service on the NBN and provides the basis for an Access Seeker to supply Carriage Services or Content Services, such as voice telephony, high-speed broadband services, IPTV services and a range of other next generation services (e.g. e-health and telemedicine, high quality video conferencing, etc).

The NBN Access Service will be supplied initially through four Product Components, which are the same across each NBN access network (with some minor differences due to the different technical capabilities of each network). The initial four Product Components are:

- User Network Interface (UNI);
- Access Virtual Circuit (AVC);
- Connectivity Virtual Circuit (CVC); and
- Network-Network Interface (NNI).

Figure 5.1 presents a simplified schematic description of the NBN Access Service and its delivery via the four Product Components. A detailed discussion of this approach is at section 5.3.

Figure 5.1: Schematic description of NBN Access Service and Product Components



If the SAU comes into operation, the NBN Access Service will become a declared service for the purposes of section 152AL(8E) of the CCA, with NBN Co being required to comply with category B SAOs in respect of that declared service. NBN Co also intends to supply Ancillary Services[50], which do not form part of the NBN Access Service. However the underlying assets supporting the provision of the Ancillary Services form part of the Relevant Assets, the

[50] Schedule 1 of the SAU defines Ancillary Services as including the Facilities Access Service, the Systems Interfacing Service and any other product or service developed by NBN Co from time to time that is ancillary to the supply of the Product Components and associated Product Features.

revenues earned by NBN Co in relation to the Ancillary Services will form part of the revenues considered under the SAU, and price and non-price commitments relating to Ancillary Services will be made in the SAU. NBN Co considers that detailed terms and conditions of access relating to Ancillary Services are most appropriately dealt with in the WBA.[51]

5.2.1 Functional description

The NBN Access Service is described functionally in Schedule 2 of the SAU as follows:

> *The NBN Access Service is a Layer 2 service supplied on the NBN Co Network between and including:*
>
> *(a) a User Network Interface on a Network Termination Device; and*
>
> *(b) the Network-Network Interface at the Point of Interconnect associated with the relevant Network Termination Device,*
>
> *for the purpose of enabling an Access Seeker (or another Service Provider that is a customer of an Access Seeker) to supply Carriage Service or Content Services.*

A functional approach to describing the NBN Access Service, which is to be declared for the purposes of section 152AL(8E), is consistent with the approach adopted by the ACCC when it declares services under Part XIC of the CCA. As stated by the ACCC:

> *Wherever possible, the Commission's preference is to specify services in functional, rather than technology-specific, terms. In the Commission's view this minimises any distortionary effects of declaration in terms of technological and innovative developments. It also leaves the access provider with flexibility to determine the most efficient way of supplying the service and gives greater flexibility to the Access Seeker in terms of the service that can be provided within the ambit of the declared service.*[52]

5.2.2 End-to-end and technology neutral service

The NBN Access Service is a Layer 2 wholesale bitstream service provided by NBN Co over the NBN Co Networks between and including:

- a UNI on a Network Termination Device (NTD) – this is the port on the device installed at each End User premises into which an End User may plug certain devices, such as a telephone, Residential Gateway or TV; and
- the NNI at the POI associated with the relevant NTD – this is the demarcation point between the NBN and the Access Seeker's backhaul infrastructure.

---

[51] Ancillary Services are intended to become declared services pursuant section 152ALA(8D) of the CCA.

[52] ACCC, Declaration of local telecommunications services. A report on the declaration of an unconditioned local loop service, local PSTN originating and terminating services, and a local carriage service under Part XIC of the *Trade Practices Act 1974*, July 1999, p. 8

The NBN Access Service is technologically neutral and is intended to capture services supplied by NBN Co over the fibre, wireless and satellite platforms (including any interim satellite solutions that are implemented) and is intended to remain relevant over the life of the SAU.

A technology-neutral approach has been considered appropriate by the ACCC in its consideration of service descriptions in the past.

As the ACCC noted in the 2006 Fixed Services Review[53]:

> *Regulation in a technology neutral and service neutral way is required to ensure that, in a convergent environment, regulation does not prevent the emergence of new services due to distortions created by access services being defined in a technology or service specific manner.*

NBN Co submits that a technologically neutral approach is also reasonably necessary to facilitate the objective of the SAU in providing a long term framework necessary for UNWP, by facilitating a degree of cross-subsidisation between the various platforms.

In particular, a SAU that covers fibre, wireless and satellite services facilitates a degree of cross-subsidisation across the three technology platforms to allow NBN Co to recover potential losses from its proposed wireless and satellite operations from its fibre operations (which are expected to become profitable over time).[54] Given that it is unlikely that NBN Co will be able to recover the costs of its wireless and satellite operations on a standalone basis, the SAU service description covers all three technology platforms as a means of addressing its UNWP objectives.

NBN Co submits that a technology neutral approach is also key to providing a consistent product and systems experience to Access Seekers across all geographical areas. This facilitates the ability of Access Seekers to address wider markets than may have been the case with a technology-specific service description.

5.2.3 Ethernet-based service

The NBN Access Service will be delivered using Ethernet technology. Ethernet is the default delivery technology and de-facto standard for Layer 2 wholesale fibre products and it has been prescribed and recommended by a number of standards bodies including the Broadband Forum and the Metro Ethernet Forum[55].

[53] ACCC, *A strategic review of the regulation of fixed network services, ACCC position paper*, June 2006, p.76

[54] The CCA explicitly recognises NBN Co's objectives relating to Uniform National Wholesale Pricing by incorporating provisions (subsections 152CBD(5A) and (5C)) that ensure the ACCC cannot reject a SAU for a reason that concerns cross-subsidisation. Explanatory Memorandum, NBN Access Bill, p.15

[55] http://www.broadband-forum.org/, http://www.metroethernetforum.org

Ethernet technology is also endorsed by overseas regulators as the preferred Layer 2 broadband access technology because. As NBN Co has previously noted, the reasons for this include that Ethernet technology:[56]

- supports Retail Service Provider (RSP) service differentiation as a result of a ubiquitous interface that is neutral to higher layers;
- facilitates competition and choice as it is able to support multiple services and RSPs on the same physical interface, when necessary;
- offers flexible and potentially substantial bandwidth, as required;
- supports layer 2 service segregation and grades of Quality of Service (QoS);
- offers transparency required to identify and manage faults by NBN Co and RSPs independently; and
- offers competitive equipment pricing as a result of broad adoption, with prices continuing to decline as a result of experience curve effects.

In particular Ofcom has stated[57]:

> *Regardless of the physical location at which the competitive operator takes them, active inputs are likely to offer some form of wholesale electronic line access product. Ethernet increasingly appears to be a viable and beneficial technology on which to base such future products. The ubiquity and simplicity of Ethernet as a networking technology has led to huge equipment volumes and subsequently low costs. Also, as 'Carrier Ethernet' standards are being developed, features required for major telecoms operators to use the technology in their large core networks are being added. These new variants are designed to overcome the limitations of standard Ethernet which make it problematic to run with large numbers of customers and different services. As a result, Ethernet may be a promising basis on which future active input products could be developed to offer more flexibility and scope for innovation than today.*

5.2.4 Layer 2 service

NBN Co's objective, as directed by the Government, is to occupy the lowest practical layer in the technology stack in order to provide Access Seekers with the maximum ability to innovate and differentiate their services, so as to promote efficient and effective retail level competition, via a layer 2 bitstream service[58]

NBN Co will supply the NBN Co Access Service (and the Product Components) over the 'active layer' of the NBN Co Network (i.e. at Layer 2). NBN Co's expectation is that other

[56] NBN Co consultation paper: proposed wholesale fibre bitstream products, December 2009, p.12
[57] Ofcom, *Future Broadband Policy approach to next generation access*, September 2007, p. 51.
[58] The Statement of Expectations from shareholder Ministers, 17 December 2010, p.2: requires NBN Co to operate, "at the lowest level in the network stack necessary to promote efficient and effective retail level competition, via Layer 2 bitstream services"

players will step into the "space" above Layer 2, to aggregate and wholesale Layer 3 and other services to smaller Service Providers. NBN Co does not currently intend to supply passive products to Access Seekers. There is also currently no industry support for passive products from NBN Co, as discussed in NBN Co's response to industry submissions on its fibre access service.[59]

The NBN Co Network will have some limited Layer 3 awareness (for example, to allow the provision of multicast or voice services). Layer 3 is also inherent in the technology NBN Co is using to implement its interim satellite solution but this is only a temporary measure, specifically implemented to meet the requirements of the Government's Statement of Expectations[60].

Ofcom noted the relevance of an active Layer 2 approach in next generation access (NGA) networks stating[61]:

> *...the net benefit of passive input based competition over the active alternative may reduce under next generation access. This is partly because the relative static costs of passive based competition may be higher than today, and partly because the relative benefits in terms of scope for innovation it offers over active competition may be lower as the prospects for innovation from competition based on active inputs improves.*

The provision of a Layer 2 service on its fibre network means that NBN Co will own active equipment in all fibre nodes and at the End User premises served, to 'light' the fibre. However, Access Seekers will also need to install equipment to interact with and move data around the network and translate the Layer 2 bitstream service into meaningful End User applications such as broadband Internet, voice and video.

By analogy with today's Digital Subscriber Line (DSL) broadband environment, the service provided by NBN Co lies in between an Unconditioned Local Loop Service (ULLS) and a retail service. It also lies at a lower level than typical wholesale DSL services in Australia, which could be characterised as "Layer 2.5" services, provided via Layer 2 tunnelling protocols. The NBN Co service thus lowers barriers to entry across the market (by being higher in the technology stack than ULLS), while still providing scope for substantial product innovation and differentiation

Likewise, the provision of a Layer 2 service on its wireless and satellite networks means that NBN Co will own active equipment in these networks (e.g. the wireless base stations and satellites), as well as at the End User premises. While the physical networks used to deliver the Layer 2 services differ, NBN Co has configured its networks to deliver consistent logical Layer 2 services across all three technologies.

---

[59] NBN Co response to industry submissions – proposed wholesale fibre bitstream products, March 2010, p.12.

[60] "*In the interim, the Government expects NBN Co to explore options to bring forward a suitable satellite solution to ensure the availability of improved satellite broadband services for regional Australia, eventually replacing the existing Australian Government Australian Broadband Guarantee program*." Statement of Expectations from shareholder Ministers, 17 December 2010, p.4

[61] Ofcom, *Future Broadband Policy approach to next generation access*, September 2007, p. 50.

While NBN Co is responsible for determining the features and functionality associated with active Layer 2 products, such as download and upload speeds and increments, this functionality will be provided in a manner that gives Access Seekers considerable scope to innovate and control key aspects of the retail product design.

NBN Co's Layer 2 product component construct will support a broad range of services and applications in line with the Access Seeker's business requirements. Ofcom has identified service agnostic access as a key characteristic for the virtual unbundled local access (VULA) service delivered by BT in its NGA network noting:

> *We consider that VULA, like LLU, should be a generic access product. That is, it should provide service agnostic connectivity, replicating one of the key features of LLU.*[62]

Further, as active products do not require the same level of investment at a localised level by Access Seekers and can support interconnection at locations that are further back in the network (i.e. a higher degree of aggregation), active products provide a considerably lower barrier to entry than passive products.

To deliver the long term 12Mbps Layer 2 services at the volumes and capacities required to service 3% of the population over satellite requires NBN Co to design, build and launch its own satellites. Given the long lead times to undertake these activities, the Government, in the Statement of Expectations, requested NBN to find an interim replacement for the Australian Broadband Guarantee (ABG) program by the 1st July 2011 and provide this interim service till the long term satellite service was launched.[63]

NBN Co was only able to source a managed Layer 3 service to deliver this interim solution, but as far as possible has sought to implement the interim satellite product in a manner consistent with the Product Component approach adopted for NBN Co's other networks. While not meeting the long-term speed objectives of the satellite solution, this interim solution (capable of supplying downlink speeds of 6Mbps) is significantly superior to the then-current ABG threshold speed of 1Mbps, and hence appropriate in the circumstances.

While the SAU has not been given in respect of the Layer 3 interim satellite service, as the SAU is a "whole of business" undertaking, it provides for all costs associated with all of NBN Co's networks, including the interim satellite solution, to be included in the regulatory asset base, to the extent that those costs are prudently incurred. Likewise all revenue and operating expenses associated with the interim satellite solution will be included in the calculation of the long term revenue constraint.

[62] Ofcom, *Review of the wholesale local access market statement on market definition, market power determinations and remedies*, 7 October 2010, p 126.

[63] The Statement of Expectations from shareholder Ministers, 17 December 2010, p.4

5.3 NBN Access Service supplied by Product Components

As outlined above, the NBN Access Service will be supplied initially through four bundled Product Components; the UNI, AVC, CVC and NNI. This section discusses these Product Components in detail and details NBN Co's rationale for supplying the NBN Access Service via Product Components.

5.3.1 User-Network Interface (UNI)

The UNI is the physical interface on the NTD at an End User's premises and represents the network boundary on the End User side. The UNI allows the End User to connect various devices, such as a telephone handset, PC, TV, etc.

On the NBN Co fibre, wireless and long-term satellite networks, an End User may receive services from multiple Access Seekers simultaneously. On the interim satellite service, only a single UNI will be available on each NTD, meaning that only one Access Seeker can supply services to an End User at a point in time.

An Access Seeker is able to deliver multiple services (for example, triple play) through a single UNI, or alternatively may elect to use multiple UNIs. A UNI is uniquely allocated to an Access Seeker.

Further, on the fibre network, two types of UNIs are provided:

- User Network Interface-Data (UNI-D) – Four independent 10/100/1000BaseT Ethernet interfaces are provided for data service delivery. Optionally, optical 1000BaseSX and 1000BaseLX Ethernet Interfaces are available.

- User Network Interface-Voice (UNI-V)– Two independent analogue telephony interfaces will be provided (one UNI-V will initially be available, with the second one becoming available in mid 2012). This interface will utilise Session Initiation Protocol (SIP) for media signalling and can be integrated with an existing Access Seeker SIP soft switch infrastructure. Access Seekers can use the UNI-V to provide a migration path from traditional PSTN- based telephony services.

In the case of the NBN wireless and satellite networks, only the UNI-D is currently supported, which can also be used by Access Seekers to supply voice services using VOIP technology.

5.3.2 Access Virtual Circuit (AVC)

The AVC provides logical connectivity between a UNI at the End User's premises and the NNI. The AVC is specific to each UNI and provides the bandwidth and associated class of service to the relevant UNI that has been ordered by the End-User or which is otherwise required to deliver the relevant application or content (e.g. IPTV services).

Each Access Seeker wishing to deliver a service to a given End-User must order one or more AVCs. Multiple AVCs can be mapped to a single UNI-D but a UNI cannot be shared by multiple Access Seekers.

AVC bandwidth is defined by four Class of Service traffic classes (TC) offering committed information rate (CIR) and peak information rate (PIR). In the first release of fibre Product Component, there will be eight defined PIR combinations of downstream and upstream speeds based on “Best Efforts” TC_4.

Services offered over the NBN Access Service have the option to add incremental CIR bandwidth based on TC_1, TC_2 and TC_3 to support ‘just-in-time and real-time’ applications such as voice (TC_1) and interactive video (TC_2) and transactional data (TC_3). Initially, only TC_1 and TC_4 will be provided, with other traffic classes to follow in planned product releases.

5.3.3 Connectivity Virtual Circuit (CVC)

The CVC provides logical connectivity and aggregates traffic delivered over the various AVCs in the relevant Connectivity Serving Area (CSA).

The CVC is dimensioned by the Access Seeker according to their End User capacity requirements and overall retail value proposition, including the quality of service they wish to provide. Access Seekers can dimension the CVCs differently based on applications and market requirements and as a result, enable the Access Seeker to control and manage the overall service experience to the End User.

Access Seekers may implement multiple CVCs in order to create a differentiated experience for particular End User segments such as residential or business.

Like the AVC, the CVC consists of four Class of Service traffic classes. Access Seekers dimension the CVC based on the capacity requirements of each traffic class being aggregated i.e. TC_4 on an AVC can only be mapped into TC_4 on the CVC.

All traffic on the CVC is CIR. This provides a high degree of predictability of Access Seeker traffic performance within the NBN Co Network. Each traffic class on the CVC needs to be specifically dimensioned as there is no “bursting” between different traffic classes on the CVC.

5.3.4 Network-Network Interface (NNI)

The NNI forms the physical interface between the NBN Co Network and the Access Seeker’s network at each POI. The NNI supports all CVC types and is common between long-term satellite, wireless and fibre access services.

The NNI consists of two components: the NNI Bearer which is the physical interface and the NNI Group which is a logical group of physical interfaces. The NNI supports a number of physical and logical options that allow Access Seekers to tailor the interface to their needs, and hence allows different competitive models to be established.

Interface Types

Each NNI Bearer operates at either 1 Gbps or 10 Gbps and is available with either a short range (10 km) or, in a later release, a long range (40 km) optical interface.

Redundancy Modes

Two redundancy modes will be offered: Single Chassis; and Chassis Diverse. Each NNI Bearer is configured as a member of a NNI Group using IEEE802.3ax link aggregation. A NNI Group can comprise up to eight NNI Bearers which can operate in load-sharing mode. If one of the physical links in the NNI Group goes down, its load will be transferred to the remaining links in the Group and the NNI Group will continue to function, although at a reduced aggregate capacity.

In Single Chassis mode, all NNI Bearers are located on the same chassis.

In Chassis Diverse mode, NNI Bearers within a Group are configured in pairs across two chassis, one of which is active while the other is in stand-by. If one chassis becomes inoperable, the traffic is automatically switched to the stand-by. Since the NNI Bearers are always configured in pairs, there will be no loss of capacity.

5.3.5 Product features

While the Product Components are intended to reflect the key building blocks of an end-to-end service on the NBN, Product Features denote the aspects of each Product Component that are selectable and configurable by an Access Seeker (such as downlink speeds and classes of service).

For example, NBN Co's entry level Product Component will be an AVC with a TC_4 downlink speed of 12 Mbps and uplink speed on 1 Mbps as Product Features of the AVC.

5.3.6 Product components approach promotes competition

The component-based product construct is designed to give Access Seekers the flexibility to configure capacity and features on the NBN as if it were the Access Seeker's own network.

Such an approach provides Access Seekers with a higher degree of flexibility in how they configure their services and will allow Access Seekers to control key elements of the End User experience, such as the dimensioning of aggregation links and classes of service. This approach, in conjunction with the ability to select additional features, such as improved service levels, protected infrastructure and specialist video features will permit Access Seekers to construct services for different types of End Users in line with their chosen business models, and to compete in the market on the basis of these retail product attributes.

Importantly, NBN Co's product offering is in step with, and at the leading edge of, international wholesale-only product offerings. For example, the Product Components are broadly consistent with Active Line Access (ALA) product offerings being made available by wholesale-only operators in other jurisdictions, most notably Nucleus Connect in Singapore.

In the context of VULA, Ofcom noted that:[64]

> *The most effective way to support the development of downstream competition is to provide significant scope for alternative providers to innovate and differentiate in how they package and deliver services.*
>
> *We consider that the benefits of VULA would be greater if it was provided as a 'raw' product which provides CP's with significant flexibility over their own networks and the services that they could deliver to End Users. This would replicate many of the features associated with LLU.*

Further, Ofcom noted that control of access was an important characteristic in relation to the VULA: [65]:

> *Given the aim of realising competition benefits by allowing CPs maximum flexibility in their ability to offer differentiated products to consumers it is necessary for VULA to provide a high degree of access control to the interconnecting CP.*
>
> *CPs would need freedom of control in order to provide different types of services and, potentially, also vary the QoS parameters in delivering those services to enable them to effectively compete with other providers.*

NBN Co submits that its Product Components approach also provides for transparency of product design.

Importantly, none of these basic building block Product Components may be withdrawn by NBN Co during the term of the SAU, thus providing Access Seekers with a high degree of certainty about the products that may be acquired for them to provide services to End Users over the long term.

5.3.7 Requirement to acquire each Product Component

While each of the Product Components comprising the UNI, AVC, CVC and NNI are separately described as Product Components, a Customer is required to acquire each of the Product Components itself to provide an end-to-end service to an End User.

The requirement to acquire each of the Product Components is appropriate for the following reasons.

- Technical requirements: All four Product Components are required for NBN Co to deliver the NBN Access Service to a Customer. For example, without an NNI, a Customer cannot connect to the NBN and therefore receive a NBN Access Service. Without the UNI, the AVC has nothing to terminate on at the End User premises and the End User could not utilise the service. Without the AVC there is no bandwidth

[64] Ofcom, Review of the wholesale local access market statement on market definition, market power determinations and remedies, 7 October 2010, p 125.
[65] Ibid.

profile/connection to the End User premises. The CVC facilitates the sharing of capacity on the NBN by multiple Access Seekers. Without the CVC defined by the Customer, NBN Co would need to either define the capacity at the NNI for all Customers without any visibility of the Customer's End Users, or define the capacity of the NNI to full line rate. Put another way, the CVC enables an Access Seeker to acquire and pay for just the capacity on the NNI that the Access Seeker requires.

- Operational requirements: Only a single Customer can operate a UNI despite multiple AVCs being able to be delivered to the single UNI. This allows NBN Co to more effectively and efficiently manage any service issues associated with a UNI. It also allows NBN Co to ensure that only valid combinations of services are able to be configured on the network.

The use of these Product Components to provide an end-to-end service is consistent with wholesale product designs internationally. As noted by Ofcom, ALA products – implementations of which include product offerings from Nucleus Connect (Singapore), BT/Openreach (UK) and others, albeit with regional variations – aim "to enable standardised, competitive wholesale active access to superfast broadband networks; a wholesale bitstream access which, unlike previous forms of bitstream, offers Communications Providers scope for innovation and retail product differentiation which is as close as possible to that allowable by passive infrastructure access" [66]. The component model effectively provides Access Seekers with a set of building blocks from which they can construct a bitstream service that meets their particular needs. It aims to mirror the same low-level construct that Service Providers are familiar with in the context of the ULLS, albeit supplied with an active service rather than a passive infrastructure link.

A key aspect of the current ULLS model is that Service Providers have full flexibility to dimension and contend their networks and DSLAMs to meet their business needs. At the most basic level, with a DSLAM, a Service Provider is able to contend the ULLS lines that they individually purchase into whatever sized uplink/downlink bandwidth they choose, to balance their cost base against their user experience targets. NBN Co's Product Components approach aligns with this capability, allowing Service Providers the full flexibility to select uplink/downlink bandwidth (i.e. CVC size) independently of the number and size of access lines (i.e. AVCs). This is the key requirement/feature underpinning Ofcom's statement that ALA is "unlike previous forms of bitstream" (which did not implement this basic flexibility).

Nucleus Connect implements the component model using product components analogous to those of NBN Co; being the Aggregation Ethernet Virtual Circuits (AG-EVC) as the CVC equivalent, the Qualifying Persons Ethernet Virtual Private Line (QP-EVPL) as the NNI, and Per-End User Connection as the AVC plus UNI. While Nucleus Connect chose not to offer the physical UNI as a selectable component, the key components of AVC and CVC remain independently selectable.

Openreach implements the product components approach in a less granular manner, but its approach is still analogous to the NBN Co Product Components. The UNI and AVC are offered

[66] Ofcom, *Ethernet Active Line Access: Updated Technical Requirements*, 3 March 2009

as a single product component within the Generic Ethernet Access over Fibre to the Premises (GEA-FTTP) product. Access Seekers must also purchase a Generic Ethernet Access Cablelink product component, this being analogous to the CVC. The Generic Ethernet Access Cablelink product component can only be purchased in granular bandwidths of 1Gbps, which match the NNI physical interface and hence make a separate NNI product component superfluous. Nucleus Connect and NBN Co have chosen to provide more granular offerings on their analogous components.

5.3.8 NBN Access Service meets ACCC minimum criteria for Layer 2 Bitstream Service

In the ACCC's draft FANOC Decision[67], the ACCC set out the minimum requirements that the ACCC considered were necessary to establish that a Layer 2 broadband service would be reasonable.

The ACCC stated that[68]:

> *... a bitstream access service with a service specification that addresses these minimum elements would be likely to provide Access Seekers with sufficient flexibility and control over the access service to allow any-to-any connectivity and enable Access Seekers to compete effectively and make appropriate decisions in relation to the efficient use of and investment in infrastructure. Therefore, the ACCC considers that such a service description would be likely to promote the LTIE.*

NBN Co submits that its NBN Access Service fulfils the minimum requirements that the ACCC has previously indicated would be necessary for a Layer 2 broadband service to promote the LTIE. NBN Co notes that these criteria were set out in the context of a fibre-to-the-node (FTTN) network where contention for example is a more significant issue than in fibre-to-the-premises (FTTP). Therefore, some of the issues raised by the ACCC are no longer relevant in a FTTP context where the standards of service are significantly superior to those which are capable over a FTTN network. While services offered over the NBN wireless and satellite networks do not have the same characteristics as those offered over the fibre network, they are broadly consistent with the ACCC's minimum criteria for Layer 2 bitstream services.

The manner in which the NBN Access Service meets the minimum criteria, and will thus promote competition in relevant markets and promote the LTIE (by providing Access Seekers with flexibility and control) is further detailed in Table 5.1. Criteria that are not relevant in the current context have also been noted.

---

[67] ACCC Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service draft decision December 2007 pp. 60 – 61.

[68] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007,p.61

Table 5.1:- Minimum requirements of a Layer 2 Broadband Service to promote the LTIE

ACCC criteria	NBN Access Service
A Layer 2 bitstream access service, which may be offered at a variety of rates but should include a product that is not throttled as well as a product that is symmetric to the extent the technology permits. Products (both consumer and business-grade) should be equally available to all Access Seekers on a non-discriminatory basis.	The NBN Access Service supports a variety of products at a variety of rates. NBN Co's Product and Pricing Paper sets out the range of rates that are currently possible. These reflect the capabilities of the different networks, and are available to all Access Seekers. All products will be available to all Access Seekers on a non-discriminatory basis in accordance with NBN Co's non discrimination obligations pursuant to the CCA (see section 3.6 for a discussion of the obligations). Consumer and business-grade products are also supported. NBN Co's business-grade products will be introduced in future product releases. NBN Co does not offer an "unthrottled" product, for a number of operational reasons. On the wireless and satellite networks, capacity management is important in ensuring that all End Users will have access to the 12Mbps downlink speeds that NBN Co is offering. On the fibre network, similar management of the shared network capacity is also important in ensuring consistent End User experience. The peak speeds that will be made available on the fibre network will also be at least an order of magnitude greater than that possible on the FTTN network considered by the ACCC in the FANOC proposal, and these speeds will be selectable by Access Seekers. NBN Co therefore submits that this criteria is not as important as in the FANOC scenario. NBN Co has undertaken not to withdraw for the duration of the Term, the UNI, AVC, CVC and NNI as described in schedule 3 (Product Components), Product Features comprising of the Basic Access Offer during the First Period and other withdrawals will be subject to processes set out n the SAU. This ensures the ongoing availability of the NBN Access Service in accordance with this criterion.

ACCC criteria	NBN Access Service
A service (whether the bitstream service or another service) that allows Access Seekers to provide a voice service.	The NBN Access Service supports a voice service through both by way of voice-over-broadband (using the UNI-D), as well as analogue voice services through the UNI-V for the fibre access network. A further description of voice capability is set out in section 5.3.1 above.
Points of interconnection as close to customers as is feasible and efficient, which in the first instance is likely to mean at or near existing local access switches and other points of interconnection for current ULLS and Line Sharing Service (LSS) products (it may have other points of interconnection as well).	NBN Co has worked with the ACCC to apply the Competition Criteria to derive a set of network planning rules (based on the Competition Criteria) and to develop a list of initial POI locations based on the application of the Competition Criteria and planning rules. Further information and description about the POI process is set out in section 7.5.11 below.
Interconnection protocols based on well accepted standards for broadband, voice and, if applicable, video which are sufficiently well described to allow Access Seekers to design and build their own interconnecting facilities.	The NBN Access Service supports the following interconnection protocol at the NNI: Ethernet IEEE802.1ad **References:** WBA Product Technical Specification Interim Satellite PTS
Arrangements for access to buildings, shelters and facilities for interconnection.	NBN Co will support a facilities access product. NBN Co has set out its plans in its Facilities Access product paper[69]. This paper outlines that NBN Co will offer facilities access on a similar basis to current arrangements and in accordance with the *Telecommunications Act 1997*.
Well described and appropriate protocols for how packets are to be prioritised and handled.	NBN Co has defined four traffic classes for Customers. The traffic classes are implemented across NBN Co's network. Access seekers can use these classes to manage their traffic across the NBN. The Interim Satellite Solution will provide TC_1 and TC_4 classes only. Wireless will have all four traffic classes available in future, but will initially only offer TC_1 and TC_4.
Well described and appropriate protocols for how congestion in shared network elements is to be handled.	NBN Co has industry standard quality of service mechanisms to provide fairness of resource allocation. The Access Seeker can manage congestion within their own CVCs.

[69] Overview of the NBN Co Facilities Access Product, July 2011. http://www.nbnco.com.au/assets/documents/facilities-access.pdf . More detailed Facilities Access information will be released shortly.

ACCC criteria	NBN Access Service
Equivalent treatment of Access Seekers in relation to quality of service parameters such as jitter, delay and packet loss.	NBN Co has defined four traffic classes for Customers. The traffic classes are implemented across NBN Co's network, without reference to specific Access Seekers. Initially, initially only the TC_1 and TC_4 traffic classes will be offered, with other traffic classes to be progressively introduced. All products will be available to all Access Seekers on a non-discriminatory basis in accordance with NBN Co's non discrimination obligations pursuant to the CCA.
Interaction by Access Seekers with operations support systems including: • visibility of provisioning, fault reporting and rectification and service assurance, and • control of own customer configuration and use of the Access Seeker's allocated part of the capacity.	In implementing entirely new systems designed in the context of a wholesale-only provider, NBN Co believes that its OSS/BSS systems will provide a superior experience compared to existing legacy fixed-line systems, and provide appropriate visibility and control for Access Seekers.
No barriers to multicasting and IPTV by Access Seekers.	The NBN Access Service supports multicast and IPTV services. NBN Co's multicast product for the fibre network is summarised in its Multicast Product Paper[70]. While interim satellite and wireless networks do not currently have multicast implemented, this is scoped in the Product Roadmap.
An appropriate process for amending service specifications in later periods as needed or desired.	The NBN Access Service has been designed to be 'future-proof'. NBN Co's PDF and Product Development Process support the introduction of new products by NBN Co over the term of the SAU.

[70] *Feature, Technology and Pricing Overview Paper for Multicast over Fibre*, August 2011, http://www.nbnco.com.au/assets/documents/multicast-product-prcing-overview-aug-11.pdf

6 Price-related terms and conditions

Key points

- NBN Co has developed a package of price-related terms and conditions that is intended to:
  - provide the long term framework necessary for UNWP;
  - provide the opportunity for recovery of prudently incurred costs over time;
  - encourage the economically efficient take up and usage of NBN Co's products; and
  - strike a balance between pricing certainty for Access Seekers and pricing flexibility for NBN Co, having regard to the need to account for evolving technology, applications and demand.
- The price-related terms and conditions meet these objectives through the interaction of:
  - initial pricing, fixed for 5 years, for a set of basic products that compares favourably to wholesale costs of supply on legacy networks (including for voice only services), are uniform across NBN Co's fibre, wireless and satellite access networks to the greatest extent possible, and serve to anchor the prices of higher speed and functionality products;
  - an individual price increase limit of CPI/2 that applies on an annual basis with no carry forward to subsequent years to each of NBN Co's Product Components, Product Features and Ancillary Services (NBN Co can set the initial prices for new Product Components, Product Features and Ancillary Services, and can request ACCC approval for an exception to the CPI/2 annual price increase limit subject to satisfying certain criteria); and
  - a Long Term Revenue Constraint Methodology, supported by a set of prudency commitments, that constrains NBN Co over time to recovering no more than its prudently incurred costs of supply (noting that this constraint will not directly affect product pricing in the short to medium term because of the extent of initial cost under-recovery).
- NBN Co submits that these price-related terms and conditions appropriately meet the needs of Access Seekers, their End Users and NBN Co.

6.1 Objectives

The price-related terms and conditions set out in the SAU are a reflection of the context in which the NBN is being built and operated, and are intended to achieve a number of objectives, including the following.

- Provide the long term framework reasonably necessary for UNWP, bearing in mind that:
  - the Government, in its role as shareholder, has directed NBN Co to "charge Access Seekers uniformly for services across its network for all technologies and for the basic service offering"[71]; and
  - this direction is supported by specific provisions in the CCA dealing with how uniform national pricing should be treated in the ACCC's assessment of a SAU (see discussion in section 3.4).
- Provide the opportunity for recovery of prudently incurred costs over time.
- Strike a balance between pricing certainty for Access Seekers and pricing flexibility for NBN Co, having regard to the need to account for evolving technology, applications and demand.
- Encourage the economically efficient take up and usage of NBN Co's products, including by:
  - encouraging early migration from legacy networks to the NBN once the NBN is available in a particular area (noting that in NBN fibre areas Telstra's copper access network will be run in parallel for 18 months under Telstra's Migration Plan);
  - minimising (to the extent reasonable over time) any incentive for End Users to abandon a fixed connection and switch to mobile only instead of migrating to (and staying on) the NBN;
  - encouraging Access Seekers (and in turn End Users) to experience the opportunities and benefits afforded by the NBN, with a view to developing a virtuous circle of investment in applications and patterns of use that will build willingness to pay over time; and
  - recognising that willingness to pay for different products and features will vary considerably between different market segments and over time, but that the costs of the NBN are subject to significant economies of scale and scope (resulting in the avoidable costs associated with serving a particular market segment, such as voice only services, or offering a particular product or feature, such as a particular access speed tier, being typically well below the relevant customer willingness to pay).

[71] Statement of Expectations from shareholder Ministers, 17 December 2010, p.7.

6.2 NBN Co's overarching pricing strategy

Consistent with the multiple objectives set out above, NBN Co's overarching pricing strategy involves setting prices for Product Components, Product Features and Ancillary Services that vary across the product suite and across time, but do not vary according to the network over which access is provided. This is consistent with the objective of UNWP, and necessarily means that prices are not reflective of the cost of the specific network over which access is actually provided. NBN Co considers that willingness to pay for its services will grow over time (supported by new applications and patterns of use) and NBN Co's Corporate Plan is based on this assumption.

As a consequence of this expectation, combined with the imperative of encouraging economically efficient take up and usage (necessarily taking as given the coverage and technology mix of the network), the key element of NBN Co's overarching pricing strategy is a two part pricing approach comprising an access component in the form of the AVC charge and a usage component in the form of the CVC charge. Average Revenue Per User (ARPU) will initially be driven mostly by AVC revenue, but over time it will be driven to a greater degree by CVC revenue as usage of the NBN increases.

The ongoing growth in network usage is based on the anticipated evolution of telecommunications from traditionally voice and email to a much broader service including high definition video, e-education, e-health and other new applications. This will lead to increased usage by the end-user and hence increased utility being derived from the NBN service. Overall, this is expected to result in an increasing ARPU even though the individual unit prices are expected to decrease. In particular, NBN Co's Corporate Plan assumes that the nominal unit price of CVC capacity will reduce over time, but that the revenue effect of such reductions will be more than offset by the ongoing growth in network usage.

This pricing strategy should allow NBN Co to balance, over time, the competing needs of maintaining high rates of take-up of the NBN (through affordable AVC prices) with high rates of usage of the NBN (through affordable CVC prices). Striking an effective balance, and having the flexibility to adjust it dynamically is very important for NBN Co, Access Seekers and their End Users given the extent of the economies of scale and scope associated with the NBN and also the need to account for evolving technology, applications and demand over the 30 year term of the SAU.

6.3 Approach to SAU price-related terms and conditions

Based on the objectives set out in section 6.1 and the overarching pricing strategy described in section 6.2, NBN Co's approach to the SAU's price-related terms and conditions combines price controls that operate at an individual Product Component, Product Feature and Ancillary Service level with long-term revenue controls that operate across all Product Components, Product Features and Ancillary Services. The price-related terms and conditions comprise the following elements.

- Price controlled offers – Maximum Regulated Prices, fixed until 30 June 2017, for a set of basic services that compares favourably to wholesale costs of supply on legacy networks (including for voice only services), are uniform across NBN Co's fibre, wireless and satellite access networks, and serve to anchor the prices of higher speed and functionality products.

- CPI/2 price control – An individual price increase limit of CPI/2 that applies on an annual basis (with no carry forward to subsequent years if not used) to each of NBN Co's Product components, Product Features and Ancillary Services.
    - NBN Co can request ACCC approval for an exception to this limit, with approval subject to satisfying certain criteria.
    - NBN Co can also set the initial prices for Product Components, Product Features and Ancillary Services, but once this occurs the individual price increase limit will apply[72]
- Long Term Revenue Constraint Methodology – the LTRCM constrains NBN Co to recover no more, over time, than its prudently incurred costs of supply.

These elements and their interaction as an overall package of price related terms and conditions are discussed further in the following sections.

6.4 Price controlled offers

6.4.1 Coverage of Price Controlled Offers

The Price Controlled Offers will cover:

- The Basic Access Offers (BAOs) – the 12/1 Mbps AVCs offered over the NBN Co fibre, wireless and satellite networks (there is one offer in respect of each network given that the technical capabilities of each network are different);
- the CVC Offer – all TC_4 symmetrical CVC capacity tiers; and
- the NNI Offer – specified NNI port configurations.

This scope for the Price Controlled Offers is designed to:

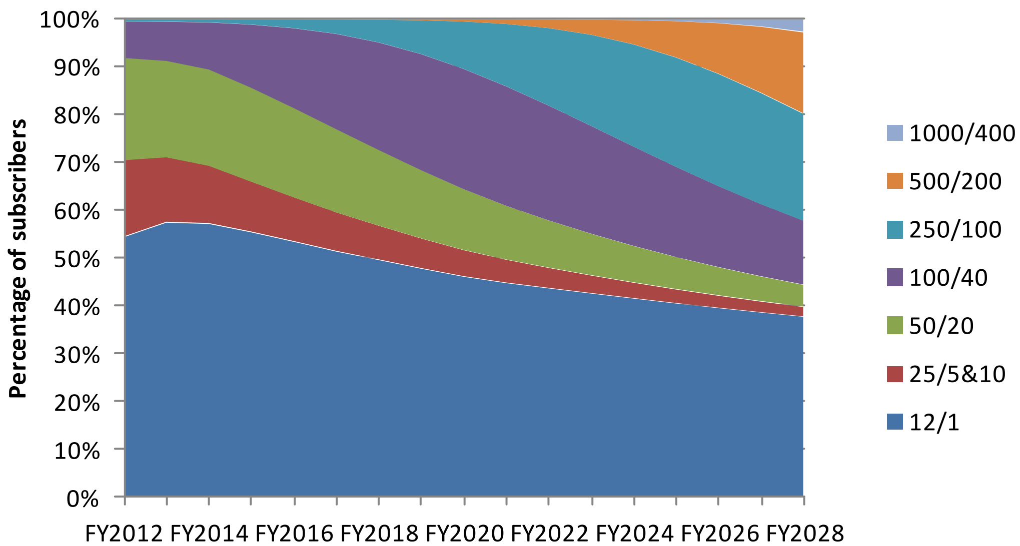
- provide price certainty to Access Seekers over the period to 30 June 2017 as they migrate voice only and entry level voice/broadband End Users to the NBN (forecast

[72] Given the methodology outlined in sections 6.3, 6.4 and 6.5, the SAU does not need to specify NBN Co's initial prices (other than for the Price Controlled Offers) for those Product Components, Product Features and Ancillary Services that have already been released. Fibre Product Release Broadband and Telephony was released in April 2011 and Satellite Product Release Broadband was released in July 2011. NBN Co does not seek ACCC approval for initial prices (already announced initial prices) when the ACCC is assessing the SAU or while the SAU is in operation (future initial prices). In respect of both product releases, the initial prices were subject to industry consultation, NBN Co is currently supplying Access Seekers with these services, and is billing for them also. As discussed further in relation to the Maximum Regulated Prices and the CPI/2 Price Controls, these initial prices will facilitate the transition from legacy networks to the NBN (because they will allow Access Seekers to serve their existing base of End Users at a wholesale cost of supply that compares favourably to that which they currently face) and will serve to anchor the prices for future product releases.

to cover approximately 50 per cent of residential AVC services in operation (SIOs) over the period to 30 June 2017, see Figure 6.1). For these market segments the price of the entry level AVC speed tier dominates the wholesale cost of supply, with CVC and NNI prices making only a small contribution;

- serve to anchor the prices of other Product Components and Product Features until the expiry of the Price Controlled Offers and then, in combination with the CPI/2 price control, for the duration of the SAU;
- provide price certainty via the CVC Offer to Access Seekers supplying market segments with higher speed/download requirements, in respect of which the CVC contributes a higher percentage of the wholesale cost of supply; and
- also provide price certainty via the NNI Offer, but this is largely a matter of completeness because the NNI makes only a relatively minor contribution to the average wholesale cost of supplying an End User (in commercially realistic situations).

Figure 6.1: Residential fibre subscriber split by AVC speed tiers



Source: NBN Co Corporate Plan, December 2010, Exhibit 9.12

6.4.2 Maximum regulated prices for Price Controlled Offers

The SAU sets out the Maximum Regulated Price that applies to the monthly recurring charge for each of the Price Controlled Offers until 30 June 2017:

- BAOs: $24.00 per SIO per month (across all access networks);
- CVC Offer: $20.00 per Mbps (CIR – TC_4 Data Transfer Rate) per month; and
- NNI Offer:

- Standard Ethernet Interface 1000baseLX-10 km range: $200 per month;
- Standard Ethernet Interface 10GbaseLR-10 km range: $400 per month.

These price points will facilitate the transition from legacy networks to the NBN because they will allow Access Seekers to serve their existing base of End Users at a wholesale cost of supply that compares favourably to that which they currently face (this includes serving voice-only End Users).[73]

Access seekers will also be able to take advantage of NBN Co plans (as announced on 9 August 2011) to rebate the wholesale charge for the first 150Mbps per month on the CVC until there are 30,000 premises passed in a CSA, which connects to a POI.

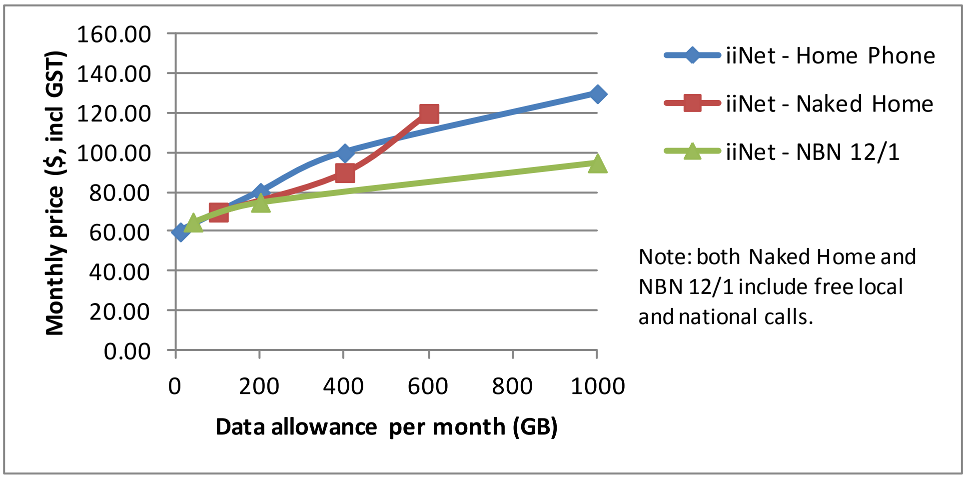
A key test of whether NBN Co's Price Controlled Offers have achieved their purpose is, however, the actual retail pricing released by service providers for their NBN-based services. At this stage, although only a limited number of service providers have released such pricing, the early indications are positive, with superior value services being offered at prices that are comparable to those on legacy networks.

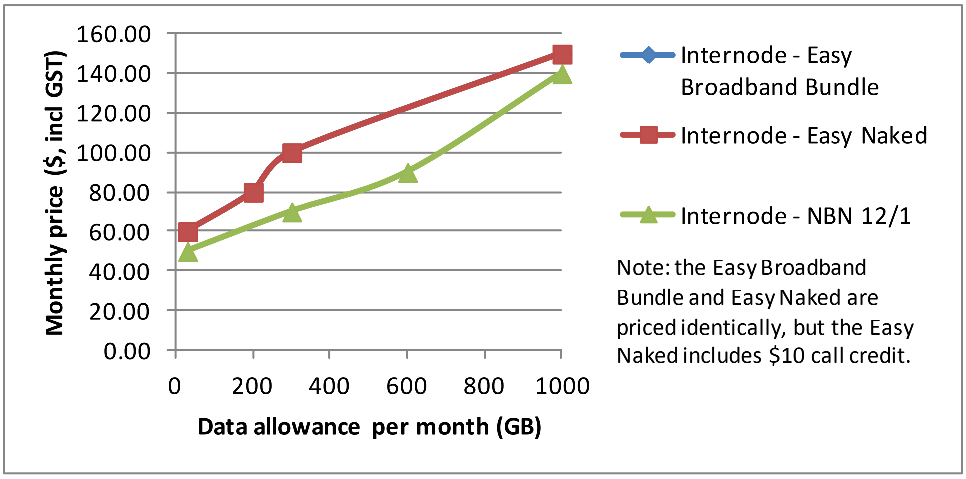
- The initial retail prices for 12/1Mbps bundled (voice and broadband) offers released by providers such as iiNet and Internode show a close connection between the prices of current ADSL2+ based offers and NBN based offers (see Figure 6.2). The pattern is similar for 25/5 Mbps offers from those providers, with the higher speed being offered for a $5 per month premium.
- Consistent with these observations, iiNet stated in its 21 September 2011 NBN – Investor Update[74] that its average cost per user would be 27 per cent lower on the NBN, with costs decreasing in respect of End Users that are currently on-net as well as those that are currently off-net.

[73] The SAU has been formulated on the assumption (also an assumption in the Corporate Plan) that the ACCC will make a final access determination in respect of the declared Domestic Transmission Capacity Service from 1 January 2012 (when the current interim access determination expires), that the ACCC will continue to monitor the currently exempted routes, and that the ACCC will act promptly to re-examine exemptions in the event that the terms and conditions on those routes are not aligned with the access determination for the regulated routes. Further, NBN Co assumes that if its Customers are unable to manage differences in transmission pricing across different regions, then further steps will be taken to achieve the Government's objectives in relation to UNWP.

[74] iiNet, NBN – Investor Update, 21 September 2011

Figure 6.2: Comparison of bundled ADSL2+ prices and NBN based 12/1 retail prices





Source: Company websites, accessed 28 November 2011

6.5 CPI/2 Price Control

In addition to the Price Controlled Offers that apply until 30 June 2017, the SAU includes an individual price increase limit of CPI/2 that applies to each of NBN Co's Product Components, Product Features and Ancillary Services and also to any ancillary charge applicable to those Product Components, Product Features or Ancillary Services) throughout the term of the SAU on an annual basis with no carry forward to subsequent years if not used. The CPI/2 Price Control provides certainty to Access Seekers and their End Users that all of NBN Co's prices will decrease in real terms in each year of the SAU term, subject only to limited exceptions.

- NBN Co can request ACCC for an exception to this limit, and approval is subject to satisfying certain criteria (see next section).
- NBN Co sets the initial prices for new Product Components, Product Features and Ancillary Services, but once this occurs the individual price increase limit will apply.

6.5.1 ACCC approval required for increases beyond CPI/2 Price Control

The SAU provides that NBN Co may request the approval of the ACCC to increase a price payable in respect of a Product Component, Product Feature or Ancillary Service by more than CPI/2. The ACCC is able to either accept or reject the request subject to specified criteria and within a specified decision making period (during which time the ACCC can run a consultation process).

NBN Co anticipates that one possible reason for making a request for an above CPI/2 price increase at some point in the future would be as part of a price rebalancing, which may involve some prices increasing and some prices decreasing to respond to changing usage patterns.

The ACCC must accept NBN Co's request if it is not inconsistent with:

- the LTIE criteria set out in section 152AB of the CCA; and
- any applicable law, regulation, Ministerial determinations or Government policy.

Expressed in this way, the criteria set an appropriately high threshold for gaining ACCC acceptance, but will enable price adjustments to be made where necessary to maximise the benefits to End Users having regard to the relevant circumstances at the time.

6.5.2 Limited flexibility in setting initial prices

With the exception of the Price Controlled Offers, the SAU proposes that NBN Co will have flexibility, subject to some limitations, in setting the initial prices for Product Components, Product Features and Ancillary Services (both at the time that the SAU commences, and over the term of the SAU as new Product Components, Product Features and Ancillary Services are introduced). Once such initial prices are set, the CPI/2 Price Control would then apply as described above.

The limitations that apply directly or indirectly to the setting of initial prices include:

- the Government's direction to NBN Co in relation to UNWP;
- the anchor effect of prices[75] established by:
    - the Price Controlled Offers;
    - Fibre Product Release Broadband and Telephony released April 2011 and Satellite Product Release Broadband released July 2011, both of which are already being supplied to Access Seekers (and billed for); and

[75] In the context of setting the initial price for a new Product Component, Product Feature or Ancillary Service, the relevant anchor price would relate to an existing alternative Product Component, Product Feature or Ancillary Service. It does not matter if the alternative is an imperfect substitute (such as being for a lower speed) provided that the cross price elasticity of demand between the new and existing products is sufficiently high.

  - other products, once released (for example, those on the Initial Product Roadmap);

- potential competition for some services from other wireless, satellite and (certain) fixed networks;
- the operation of the customer engagement processes, including the PDF processes; and
- the LTRCM.

NBN Co considers that these limitations are appropriate and sufficient constraints on the setting of initial prices, having regard to the fact that NBN Co has been established as a wholesale-only provider of Layer 2 access services and also that the legislative regime does not provide ACCC with a specific tariff approval role in respect to NBN Co's pricing. The SAU also includes a specific "anti-avoidance provision" that ensures NBN Co cannot withdraw products and introduce new products with similar features in order to circumvent or avoid the CPI/2 price control.

In addition, the SAU confers powers and functions on the ACCC for it to deal with circumstances in which NBN Co and Access Seekers cannot reach agreement on the terms of a WBA in relation to the setting of these initial prices. As discussed further in section 7.2, this "regulatory recourse" mechanism seeks to address concerns expressed by Access Seekers about the way in which NBN Co may set prices in future.

6.6 Long term revenue constraint methodology (LTRCM)

Under the LTRCM, NBN Co will be allowed the opportunity to recover its costs, inclusive of a regulatory cost of capital, but no more.

NBN Co's proposed approach is consistent with the "Building Block" revenue methodologies used by ACCC and other regulators in a range of industries (now including telecommunications) and also incorporates an Initial Cost Recovery Account (ICRA) mechanism, which recognises the timing difference between when costs are incurred to build and operate the NBN and when revenues are received, and is also supported by a number of regulatory precedents.

The ICRA mechanism, in combination with the long term of the SAU, is particularly significant in NBN Co's context because initial prices (which are then subject to the CPI/2 Price control for the remainder of the SAU) have been struck to facilitate migration from the legacy networks to the NBN rather than to achieve cost recovery at as fast a rate as possible. NBN Co anticipates that the ICRA will grow significantly for at least the next 10 years, and it will take a further extended period for these initial costs to be fully recovered.

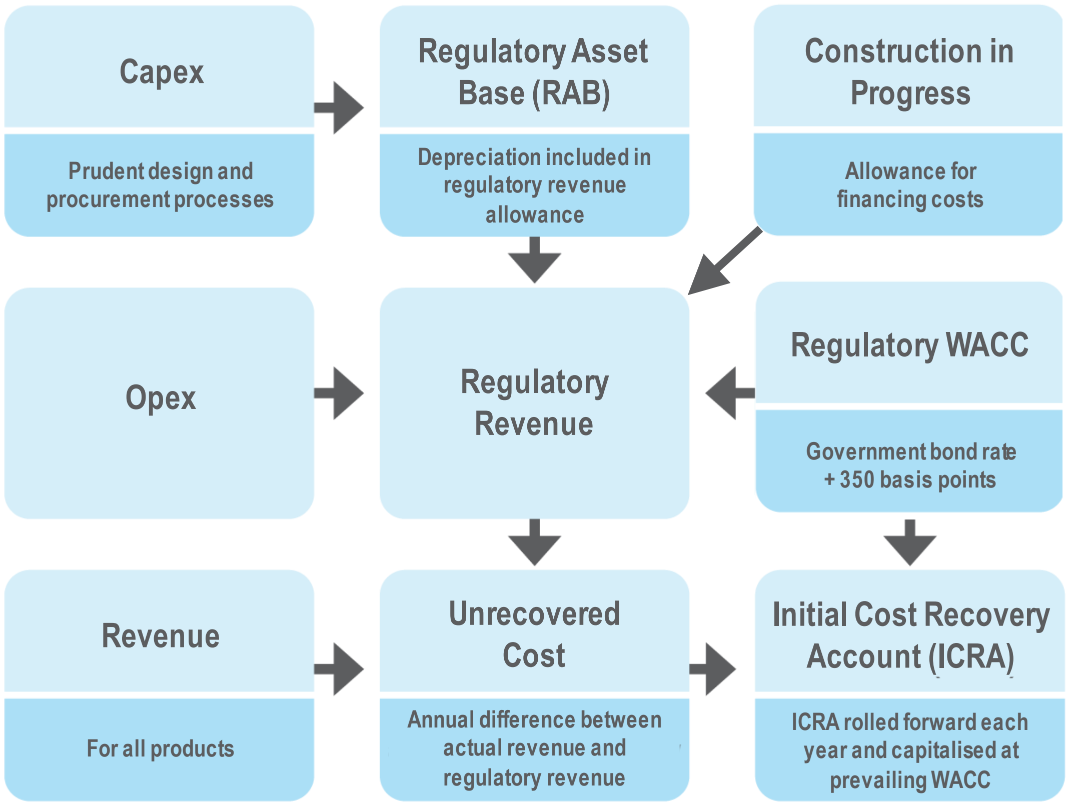
Given this, over the short to medium term the LTRCM will not provide the sort of constraint on annual revenues that is typical in other utility industries. However, NBN Co's proposed price controls (as outlined above) are designed to complement the revenue constraint by providing an appropriate level of pricing certainty to Access Seekers, with the revenue constraint providing longer term reassurance that revenues will not exceed NBN Co's underlying costs.

6.6.1 High level summary of LTRCM

Five key concepts underpin NBN Co's proposed LTRCM (as set out in Figure 6.3 below):

- NBN Co has a RAB comprised of its actual prudently incurred capital expenditure (capex). The RAB will be rolled forward each year, by adding new investments and deducting depreciation and disposals. While actual annual costs incurred are included in the RAB, this is only following satisfaction of the Prudent Design Condition and Prudent Cost Condition defined in Schedule 8 of the SAU (and described in Appendix A to this submission).
- There is an Annual Building Block Revenue Requirement (ABBRR), or regulatory revenue) calculated at the end of each year that represents a level of revenue that would allow NBN Co to earn a return on its RAB and cover its depreciation, actual operating expenditure (opex), net taxation expenses and the cost of financing capex projects that are still in progress. This is based on the approach taken in most other utility industries (with some adjustments to account for NBN Co's circumstances), and would allow an expected economic profit of zero in each year.
- Initially, NBN Co will be unable to earn revenues that match the ABBRR, which can be considered as an under-recovery of its initial costs. These unrecovered costs are rolled forward each year in a separate regulatory account (the ICRA) and have a capital charge applied to the balance each year. Thus, the initial under-recovery is capitalised, and essentially forms part of the overall capital base that NBN Co can earn a return on over time.
- As NBN Co's actual revenues increase and exceed the ABBRR at some point in time, the value of the ICRA may be reduced over time until it is extinguished.
- Once the ICRA is extinguished, the ABBRR calculated for each year would effectively act as a cap on NBN Co's annual revenues.

Figure 6.3: Main components of the LTRCM



There are a number of important implications from the LTRCM.

- Over the long term, the maximum revenues that NBN Co will be able to earn are those consistent with recovering its costs, including a regulated return on capital (regulatory WACC). Such revenues would result in a zero expected net present value of all relevant cash flows, which is typical for a regulated monopoly.
- NBN Co anticipates that its annual revenues will be less than the ABBRR (leading to unrecovered costs that will be capitalised into the ICRA) for at least 10 years. This means that NBN Co will require an extended period later in the SAU term in which its revenues exceed the ABBRR to enable NBN Co the opportunity to recover those initial costs that were capitalised into the ICRA in earlier years. Over time, however, NBN Co would still recover no more than its prudently incurred costs on a net present value basis.
- As the ICRA reaches the point at which it is extinguished, NBN Co will need to manage its prices and revenues to provide a transition to the regime in which its actual revenues must more closely match its ABBRR on an annual basis.

The key elements of the LTRCM are discussed in the following sections.

6.6.2 Key elements of the LTRCM

i Two key periods

There are two key periods (as described in clause 4 of the SAU) that are relevant to the operation of the LTRCM.

- The Initial Cost Recovery Period: in the early years of the Initial Cost Recovery Period, NBN Co's actual revenues will be lower than the ABBRR. During this period, NBN Co will accumulate unrecovered costs in the ICRA (described further below) and a return on capital will be applied to the ICRA in each year. Following completion of the NBN, it is expected that actual revenues will exceed the ABBRR and this difference will contribute to reducing the value of the ICRA. The Initial Cost Recovery Period ends when the value of the ICRA is extinguished.
- The Building Block Revenue Period: during the Building Block Revenue Period, NBN Co's cost recovery is similar to a standard utility. NBN Co will price its Product Components, associated Product Features and Ancillary Services having regard to the need for the forecast values of Nominal Revenue not to exceed the forecast value of Regulated Revenue for the relevant Financial Year. NBN Co will need to ensure that revenues in the final year of the SAU term do not exceed the Regulated Revenue for that year.

ii Annual Building Block Revenue Requirement (ABBRR)

NBN Co has adopted an ABBRR calculation that is consistent with that used in utility regulation.

The ABBRR is calculated in clause 4 of Schedule 7 of the SAU as:

$$\begin{aligned} ABBRR_t &= WACC^{nominal}_{vanilla,t} * Nominal\ RAB^{start}_t \\ &+ \ Nominal\ Regulatory\ Depreciation_t + Nominal\ Opex_t \\ &+ Net\ Tax\ Allowance_t + Annual\ Construction\ in\ Progress\ Allowance_t \end{aligned}$$

The WACC that is used in the SAU is described in section 6.6.2(v) below. This WACC does not incorporate tax effects and so the ABBRR must include an allowance for the tax that would be required to be paid on any accounting profits made by NBN Co.

iii Regulatory Asset Base (RAB)

NBN Co will maintain a single RAB that aggregates all actual capex prudently incurred on any NBN-related assets by NBN Co or any of its related bodies corporate since the commencement of NBN Co's operations.

- The actual value of all Capex prudently incurred in relation to all Relevant Assets will form part of the RAB. The Relevant Assets includes NBN Co's fibre, wireless and satellite networks, any other telecommunications networks, network elements, platforms, systems and any other assets owned, controlled or operated by or on behalf of NBN Co or a related body corporate of NBN Co.

- All Capex incurred by NBN Co since the date on which NBN Co commenced operation (referred to as the Cost Commencement Date) is attributable to the RAB.
- Further, all Capex incurred by any NBN Co related company also falls within the scope of the RAB. At present, NBN Co Limited has two subsidiaries: NBN Tasmania Limited and NBN Co Spectrum Pty Ltd. Capex prudently incurred by any other subsidiaries that NBN Co may own in the future in connection with the Relevant Assets will also fall within the scope of the RAB.

The value of the RAB is rolled forward every year. The value of the RAB at the beginning of a Financial Year is the same as the value of the RAB at the end of the previous Financial Year. The end of year RAB is calculated as the start of year RAB for that year plus actual Capex (including the half WACC adjustment described below) less depreciation plus CPI indexation of the start of year RAB value.

The basis on which Capex is included in the RAB is as follows.

- Actual Capex prudently incurred will fall within the RAB when the Relevant Asset is Placed-In-Service. Placed-In-Service is defined to mean the time at which an asset is ready for commercial operation and the capex is recognised in NBN Co's accounts. This principle aligns with the accounting treatment.
- As the WACC in the ABBRR calculation is only applied to the start of year RAB value, a half year WACC adjustment is made to capex incurred on a new Relevant Asset which is Placed In Service in that year when calculating the end of year RAB. NBN Co notes that this approach is the same as that adopted by the Australian Energy Regulator (AER) in its Post Tax Revenue Model[76]. Asset disposals will also be treated in the same way (i.e. a half year WACC is applied to assets disposed of in a given year).

Each year, the RAB is reduced by the annual depreciation of the assets which form part of the RAB. NBN Co applies a straight line depreciation approach as described in section 6.6.2(vii) below. The RAB is also reduced by the value of any asset disposals in a given year (subject to the timing approach described above).

Both a Real RAB and a Nominal RAB are maintained and calculated in clauses 3.2 and 3.3 respectively of Schedule 7 in the SAU. The Real RAB is calculated at the end of each Financial Year using values from NBN Co's accounts (with the half year timing adjustment discussed above). The Nominal RAB is also calculated for the purposes of calculating the Annual Building Block Revenue Requirement (ABBRR), the value of which needs to be calculated in the dollars of the year in which the ABBRR is to be used. The Nominal RAB is simply the multiplication of the value of the Real RAB by a cumulative inflation factor (this accounts for

[76] Australian Energy Regulator, *Electricity Distribution Network Service Providers Post Tax Revenue Model Handbook*, 26 June 2008, p.11.

inflation from the year in which NBN Co commenced operation until the year in which the Nominal RAB calculation is performed).

NBN Co considers that its RAB approach is consistent with:

- UNWP – a single RAB is appropriate to such a pricing approach and there would be little utility in maintaining, for example, separate RABs for each access network;
- Established regulatory practice – the ACCC recently adopted the RAB approach for use in fixed services access pricing, concluding in its final report that:

  In conjunction with the change in the regulatory regime, the ACCC has moved from its previous hypothetical pricing approach (total service long-run incremental cost, TSLRIC+) to now setting prices based on the assessed costs of providing services. To do this, the ACCC has adopted a 'building block' approach. Building block, or RAB, pricing approaches are commonly used in estimating prices for regulated utilities. The ACCC's adoption of this approach responds to industry demands for greater certainty over time in the ACCC's pricing framework and, in particular, in the value of the assets used to provide the declared fixed line services.[77]

Fortunately, the practical and theoretical issues that typically arise in the context of establishing a RAB value for a mature network do not arise in NBN Co's case because the NBN is a new network that is currently being built. The initial value of NBN Co's RAB will be zero as at the Cost Commencement Date and will incorporate prudently incurred capex over time at its actual cost.

iv Prudently incurred operating expenditure and capital expenditure

The ABBRR incorporates actual opex and (via the RAB) actual capex only where such expenditure has been prudently incurred. The SAU includes specific prudency commitments (described in detail in Appendix A) that are designed to ensure that actual expenditure is necessary, effective, efficient and aligned with NBN Co's and Customers' interests.

In summary, capex will be deemed to have been incurred on a prudent basis subject to compliance with the:

- Prudent Design Condition – the expenditure must be consistent with the prevailing Network Design Rules (NDRs) for the fibre, wireless and satellite networks:
  - the initial set of design rules have been provided to the ACCC with the SAU, and some specific features of them are discussed in Appendix C. The ACCC can consider these NDRs as part of its assessment of the SAU; and
  - the SAU sets out processes for making changes to the NDRs over time, which includes engagement with NBN Co's Customers via the PDF, as well as the power for the ACCC to resolve disputes that may arise between NBN Co and Customers in respect of product-related network changes;

[77] ACCC, *Fixed line services final access determination - Final Report*, July 2011, p.9

- Prudent Cost Condition – the expenditure must be incurred in compliance with a set of procurement processes, including competitive tendering and other forms of procurement practices.

Opex will be deemed to have been incurred on a prudent basis if NBN Co:

- ensures that opex is incurred in a manner that seeks to achieve value for money and the lowest Total Cost of Ownership;
- otherwise controls opex in accordance with the Statement of Expectations and other regulatory requirements relating to procurement by NBN Co; and
- in respect of third party opex, incurs the expenditure in compliance with the same conditions that apply to capex.

In respect of both capex and opex, a number of specific categories of expenditure are automatically deemed to be prudent including, for example, NBN Co's interim satellite solution and the Telstra and Optus arrangements. These reflect pre-existing NBN Co commitments all of which were entered into on a strict arms-length basis and subject to normal, robust commercial tensions.

The SAU prudency commitments are in addition to the extensive and rigorous cost control and transparency measures which apply to NBN Co as a Government Business Enterprise (GBE), as well as the other accountability requirements placed specifically on NBN Co by the Government and the Parliament.

Taken together, NBN Co considers that it will face appropriately strong incentives to incur capex and opex on a prudent basis.

Nonetheless, as discussed in section 7.6.2 NBN Co has committed to a review of the prudency arrangements at around the time of privatisation, to ensure that they continue to remain relevant under any changes in ownership structure.

v Cost of capital

NBN Co has adopted a simple methodology for calculation of its return on capital, which defines nominal vanilla WACC for each financial year by reference to the risk free rate plus a mark-up of 350 basis points.

The risk free rate is the prevailing 10 year Commonwealth Government bond rate. For the purposes of calculating the ABBRR in a given year, the nominal WACC needs to be estimated for that year just prior to its commencement. Accordingly, NBN Co has adopted the 10 year bond rate averaged over the final 20 Business Days of the Financial Year preceding the Financial Year in which the nominal WACC is to be used.

The approach to the WACC, including the methodology for setting and reviewing the WACC (or WACC parameters) from time to time will form part of the SAU Review described in section 7.6.2, which will occur around mid-way through the 30 year term of the SAU (if not triggered earlier by certain initial steps by the Government towards privatisation).

Professor Bob Officer and Dr Steven Bishop have reviewed NBN Co's approach to the cost of capital in the SAU and advised as follows.[78]

> *We conclude that it is 'reasonable' to set a WACC based on the long term government bond rate plus a real margin and varying with the long term bond rate but it is important to recognise the risks associated with this approach. These risks may offset the advantages of the approach if there is not an adequate recognition and allowance for them by the way of a margin over and above that set by the WACC. An outcome of the fixed margin approach will be that the value of the business will vary over time when the risk margin in the opportunity cost of capital differs from the set margin. (p.1)*
>
> *....*
>
> *A mandatory review prior to sale will, most likely, lead to a WACC that is reflective of conditions at the time and therefore lead to a greater likelihood that the sale price will be closer to the RAB rather than higher or lower depending on the relativity of the set WACC to the prevailing WACC. However there is also the issue that there is a risk that the WACC is set such that the duration of the assets doesn't match the duration of the liabilities. In such a circumstance the WACC would need to be adjusted to reflect this. (p.2)*
>
> *....*
>
> *The conclusions from our review of other regulatory decisions are:*
>
> - *The Telstra WACC risk margin has been quite stable at 343 basis points until recently when it has changed due to revision of the debt risk premium and the beta of equity;*
> - *Other regulatory determinations show volatility in the WACC risk margin with recent levels generally above both the Telstra WACC risk margin and the proposed 350 basis points for NBN Co. However the equity beta is higher, gearing is at 60 and the assumed debt rating is circa BBB;*
> - *The WACC risk premium can be expected to be variable rather than fixed over time. (p.2)*
>
> *....*
>
> *Our best estimate of a current WACC risk margin for NBN Co. is circa 400 basis points. With the exception of the MRP, this estimate would accord with the approach taken in other regulatory decisions. We note that regulatory authorities have used 6% as an MRP (based on a 10 year risk free rate) however we are of the view that*

[78] Professor Bob Officer and Dr Steven Bishop, Report on WACC component of NBN Co's Special Access Undertaking, December 2011.

this does not reflect current economic circumstances and is not appropriate. If 6% is used rather than our estimate of 7% (and adjusted down due to a higher risk free rate over a 30 year period) then the margin is circa 354 basis points. Given the estimation error around the estimates a 350 basis point mark-up would fall within a reasonable confidence interval around this estimate. (p.2)

In view of the advice from Officer and Bishop, NBN Co submits that its methodology for calculation of the cost of capital is appropriate.

vi Tax treatment

The Net Tax Allowance within the ABBRR is calculated in two steps.

First, tax payable for the year is calculated based on actual revenue for the year less opex, tax depreciation (for which purposes asset lives may be different to those adopted for regulatory/accounting purposes), and interest expense. Interest expense is based on NBN Co's actual interest expense as recorded in its statutory accounts (this obviates the need for making an assumption about the percentage of debt funding)[79].

In calculating tax payable, any prior year tax losses are used to offset taxable profit before applying the prevailing corporate tax rate. Prior year tax losses are carried forward from year to year in nominal terms (without any indexing or compounding).

Second, if tax payable is positive then the effect of the pre-payment of personal income tax via dividend imputation is accounted for by calculating a net tax allowance that reduces the (gross) tax allowance by the gamma factor. This factor will be set in each year of the SAU based on the value Finally Determined by a Relevant Regulatory Body in its most recent consideration. At the present time, that value is 0.25.

As part of their report on WACC, Officer and Bishop[80] reviewed the tax treatment in the SAU and advised as follows.

Typically the tax savings for price determinations will be estimated using the opportunity cost of debt that is used in the estimate of the WACC to ensure a consistent forward view of cash flow estimates and the required rate of return. The proposed approach will lead to a mismatch in the tax savings calculated this way and those arising from using the opportunity cost of debt used to estimate the WACC. However it is challenging to estimate the magnitude and materiality of any error in advance. The error will be the difference between the opportunity cost of debt and the actual cost multiplied by the effective tax rate (gamma adjusted). It can be positive or negative. This will be immaterial until all tax losses are used.

[79] Given that the WACC will be set independent of NBN Co's actual funding arrangements, NBN Co will have every incentive to minimise its actual funding costs, so it is reasonable to assume that NBN Co's actual interest expense is efficient.
[80] Professor Bob Officer and Dr Steven Bishop, Report on WACC component of NBN Co's Special Access Undertaking, December 2011.

> *We are aware that the 0.25 [gamma factor] is consistent with a recent decision made by the Australian Competition Tribunal ["ACT"] based on the most recent research available to it. We have reviewed this research and have no grounds for disagreeing with the decision, despite it being lower than our expectation. Given that the ACT provides an opportunity for AER decisions to be appealed we are comfortable with gamma being set in this way. (p.3)*

In view of the advice from Officer and Bishop, NBN Co submits that its proposed tax treatment is appropriate.

vii Annual construction in progress allowance

The annual construction in progress allowance accounts for the financing costs associated with capex that has not yet been Placed in Service. These costs need to be separately accounted for because the capex that is included in the RAB does not include any allowance for interest during construction (calculated using the WACC or any other rate). The Annual Construction in Progress Allowance is calculated as the sum of: the nominal WACC multiplied by the value of Construction in Progress (CIP) at the start of the financial year; and half the nominal WACC multiplied by the movement in CIP between the start and end of the financial year. Expressed in this way, if the value of CIP increases over the year then this will result in a larger Annual Construction in Progress Allowance, and vice versa.

viii Nominal regulatory depreciation

The Nominal Regulatory Depreciation allowance is calculated as the Nominal Revenue based on the asset values in the start of year RAB less the CPI indexation of the start of year RAB for the current year.

This approach to calculating Nominal Regulatory Depreciation is consistent with standard Australian regulatory practice. For example, in the AER's Post Tax Revenue Model[81]:

- straight line depreciation is the default approach; and
- the adjustment for CPI indexation is also standard, and is made to avoid double counting of CPI effects, because it is a nominal WACC that is applied to the start of year RAB, and the roll forward of the RAB from one year to the next already includes an allowance for CPI indexation.

Consistent with the AER's approach, the asset lives used in the calculation of straight line depreciation reflect NBN Co's assessment of the economic lives of network and non-network assets. The initial set of Asset Types and assets lives is set out in the SAU. As NBN Co is at an early stage of its construction process, it is possible that some of these Asset Types and asset lives may need to be modified to reflect the actual solutions that are adopted. If this occurs, NBN Co will ensure that any changes are consistent with its audited accounts, and reported to the ACCC.

[81] Australian Energy Regulator, *Electricity Distribution Network Service Providers Post Tax Revenue Model Handbook*, 26 June 2008.

ix Initial Cost Recovery Account (ICRA)

For each year during the ICRA Period, NBN Co calculates Unrecovered Cost as the difference between the ABBRR and actual Revenue achieved.

For this purpose, Revenue is defined in the SAU to be the revenue earned by NBN Co in connection with the Relevant Assets. Accordingly, all revenue earned by NBN Co in connection with the fibre, wireless and satellite networks and all revenue earned in connection with Ancillary Services (e.g. facilities access) is used to determine whether, in any given year, there is an Unrecovered Cost or not.

Each year, the Unrecovered Cost is added into the ICRA. The previous opening balance of the ICRA has a nominal WACC applied to it, and is calculated in clause 5 of Schedule 7 of the SAU as follows:

$$ICRA_{t+1}^{start} = ICRA_{t}^{end} = ICRA_{t}^{start} * \left(1 + WACC_{vanilla,t}^{nominal}\right) + Unrecovered\ Cost_{t}$$

This approach means that NBN Co will capitalise any initially unrecovered costs and compound these at the prevailing WACC for each year until they are recovered[82]. NBN Co's approach is similar to the loss capitalisation approaches used in other regulated industries (as discussed further below).

An alternative mechanism that would effectively result in the same financial outcomes is to apply the Revenue Variation adjustment (which applies in the Building Block Period and accounts for differences between Regulated Revenue and actual revenue in the previous year and applies a nominal WACC adjustment) from the Cost Commencement Date rather than from the date that the ICRA is extinguished. If this were done, the Revenue Variation adjustment would grow substantially year over year during the period of NBN construction, mirroring what happens with the ICRA.

The ICRA mechanism is considered preferable, however, because it clearly identifies accumulated unrecovered costs throughout the initial period and, in due course, will clearly identify when these initially unrecovered costs have been fully recovered. At that point in time NBN Co will have to start pricing its services to achieve revenues that track close to the ABBRR (in addition to being constrained by the CPI/2 Price Control).

The ACCC has previously accepted a loss capitalisation approach very similar to the ICRA in the context of its 2011 decision to accept ARTC's Hunter Valley access undertaking - the following statement from the ACCC's Discussion Paper was reiterated in the final decision:

> *The intent of loss capitalisation is to allow under-recovery of economic cost for a period and then recovery of the relevant shortfall at a later date. In appropriate circumstances, loss capitalisation may therefore operate to facilitate investment in*

[82] In response to NBN Co's July 2011 SAU Discussion Paper, several respondents suggested that the ICRA should only be rolled forward by CPI, rather than WACC. Such an approach does not appropriately recognise that when losses are capitalised there is an implied need (within the logical construct of the ABBRR) to raise debt and equity to fund those losses, and the cost associated with that funding is appropriately captured by the WACC rather than the CPI.

> *new assets where there is limited initial demand by allowing initial under-recovery of relevant costs in the expectation of 'making up' the shortfall when demand reaches an appropriate level. Loss capitalisation may not, of course, be the only method of encouraging investment in these circumstances, and the particular form of its implementation may require scrutiny.*[83]

The ICRA mechanism is also supported by the June 2000 ACCC decision on the Access Arrangement lodged by AGL Pipelines (NSW) Pty Ltd for the Central West Pipeline.

x Regulated Revenue

Once the ICRA is extinguished, the Building Block Revenue Period commences and the ABBRR will provide the annual cap on NBN Co's revenues, with the ICRA no longer being utilised in the SAU.

That is, during the Building Block Revenue Period, NBN Co will constrain its actual revenues by reference to its Regulated Revenue, which is the sum of the ABBRR for that year and a Revenue Variation adjustment to account for the variance between actual revenue and Regulated Revenue in respect of the previous financial year[84].

NBN Co considers that the annual revenue cap approach included in the LTRCM is appropriate as a form of indirect price control, reflecting standard international and domestic regulatory practice[85].

For example, in 2006 the Australian Energy Market Commission, as part of a review of the rules which govern the regulation of electricity transmission revenue and pricing, stated that "*given the extensive network externalities and potential market power associated with the shared transmission network*", a revenue cap methodology using a building blocks approach "*is the appropriate form of regulation for prescribed transmission services at this stage of development of the National Electricity Market*".[86]

---

[83] ACCC, *ACCC HVAU final decision 2011*, p. 44, quoting from the December 2010 Discussion Paper

[84] Regulated Revenue and Revenue Variation are calculated in clauses 6.2 and 6.3 respectively of Schedule 7 of the SAU. To account for the timing difference between the occurrence of the (prior year) Revenue Variation and its adjustment in the (current year) Regulated Revenue, a nominal WACC adjustment is applied to the Revenue Variation. If the current year is the first year after the end of the Initial Cost Recovery Period, then the Carry Forward Revenue Adjustment (CFRA) is applied to the Regulated Revenue in that year (and there is no Revenue Variation adjustment). The CFRA accounts for any over-recovery that may occur in the final year of the Initial Cost Recovery Period as it is unlikely that the gap between Nominal Revenue and the ABBRR will exactly extinguish the ICRA.

[85] For example, electricity transmission in Australia, declared fixed line telecommunications in Australia, electricity distribution in Norway, water regulation in Australia and the UK

[86] AEMC 2006, Draft National Electricity Amendment (Economic Regulation of Transmission Services) Rule 2006, Rule Determination, 16 November 2006, Sydney, p.40

The ACCC has also endorsed the use of a revenue cap in parallel with the adoption of the loss capitalisation model in relation to the ARTC's Hunter Valley undertaking described above. The ACCC stated as follows:

> *In parallel to the underlying loss capitalisation model based proposal, ARTC's financial model places its Hunter Valley rail operations under an annual revenue cap. Under this approach, ARTC is permitted to increase prices in order to keep its revenue at a standard regulatory "building block" ceiling and must decrease prices to prevent revenue exceeding the standard regulatory building block ceiling unless they have unrecovered capitalised losses. ARTC also may, in certain circumstances, collect from access seekers additional charges after the end of the year to increase its revenue to the ceiling for the year, or be required to give access seekers rebates where its revenue over the year was above the revenue ceiling. As with the use of the loss capitalisation approach, the use of this form of annual revenue cap pricing significantly limits ARTC's risk by transferring demand risk to access seekers. The use of an annual revenue cap is consistent with prior regulation of the Hunter Valley Coal Network by IPART and is considered by the ACCC as likely to relatively efficiently allocate the demand risk to access seekers. The ACCC's preliminary view is that the use of the proposed annual revenue cap mechanism is likely to be appropriate for the HVAU (noting that the ACCC's concerns on pricing certainty raised in the Pricing Chapter still require addressing), as its use should: result in a relatively efficient allocation of risk; help ensure ARTC earns a return commensurate with the regulatory and commercial risk associated with its rail investments in the Hunter Valley; and facilitate efficient investment and use of infrastructure, thereby promoting effective competition in upstream and downstream markets.*[87]

xi Compliance with revenue cap

During the Building Block Revenue Period NBN Co will be obliged (as described in section 6.6.2(i)) to price its Product Components, associated Product Features and Ancillary Services having regard to the need for the forecast values of Nominal Revenue not to exceed the forecast value of Regulated Revenue for the relevant Financial Year. In any event, variances will subsequently be captured as a Revenue Variation and applied in the calculation of Regulated Revenue in the following year (essentially an unders and overs mechanism).

In the final Financial Year of the Term, NBN Co commits that its Revenues will be no more than the Regulated Revenue for that year. If NBN Co breaches this commitment then enforcement action may be taken against NBN Co under section 152CD of the CCA and appropriate orders made to ensure compliance by NBN Co with this clause.

NBN Co considers that these arrangements provide appropriate incentives for NBN Co to comply with the revenue cap during the Building Block Period.

[87] ACCC HVAU draft decision 2009, pp. 477-8

6.7 Uniform national pricing

A number of the price-related terms and conditions discussed in the preceding sections are reasonably necessary to achieve uniform national pricing, and accordingly are particularly important in the assessment of the SAU against the statutory criteria (as discussed further in Part C):

- Maximum Regulated Prices for the Price Controlled Offers that do not vary by location or according to the network over which access is provided.
- Individual Price Controls that do not vary by location or according to the network over which access is provided. Instead, each Product Component, Product Feature and Ancillary Service is subject to the same CPI/2 Price Control.
- In the LTRCM:
  - The ICRA mechanism, which allows unrecovered costs (from all of NBN's networks) to be capitalised into one account and carried forward for future recovery (across all of NBN's networks). Without such a mechanism, uniform national pricing would be unachievable because the prices that would result in the early years of the NBN would be unaffordable, leading to inefficiently low uptake and usage of the NBN with adverse implications for NBN Co's financial viability; and
  - Once the ICRA is extinguished, the specification of a single revenue cap that applies across all of NBN Co's networks and all locations. Alternative specifications, such as separate revenue caps for fibre, wireless and satellite would undermine uniform national pricing because of the significant differences in the average cost to serve an End User on each network. Under such an alternative, uniform national pricing could only be achieved by pricing wireless and satellite services down to the level of fibre services, with adverse implications for NBN Co's financial viability.

7 Non-price related terms and conditions

Key points

- The SAU covers a range of non-price related terms and conditions.
  - Term of the SAU – set to 30 years to deliver regulatory certainty and stability to NBN Co and Access Seekers by committing to key principles, parameters, methodologies and processes associated with delivering services over that period.
  - Interaction with the WBA – the SAU does not exhaustively cover all non-price terms and conditions which will be included in the WBA, but it does cover those which NBN Co considers will be of key importance to its Customers. The SAU also contains commitments in relation to changes to the WBA over time.
  - Regulatory recourse – the SAU confers powers and functions on the ACCC (using subsection 152CBA(10A) of the CCA) to create a transparent and efficient mechanism which can be invoked by an Access Seeker or NBN Co where agreement cannot be reached in respect of non-price terms and conditions not covered by the SAU or price-related terms and conditions (where pricing is announced by NBN Co after the SAU Commencement Date).
  - Product development and withdrawal – the SAU sets out the processes that NBN Co will follow in developing and withdrawing products over time.
  - Dispute Management Rules – the SAU includes the key principles for dispute management so that NBN Co and Customers have certainty of access to a stable dispute resolution process.
  - Other non-price terms and conditions – a range of other non-price terms and conditions are included in the SAU. These are expressed so as to be principles-based, product-neutral, and non-exhaustive.
  - Review and variation of the SAU – a number of aspects of the SAU are subject to review (customer engagement every 5 years, and prudency arrangements, WACC and potentially a number of other matters prior to privatisation and in any event around mid-way through the SAU term).
- NBN Co submits that these non-price related terms and conditions appropriately meet the needs of both Access Seekers, their End Users and NBN Co.

7.1 Term of the SAU

7.1.1 Rationale for 30 year term

In compliance with subsection 152CBA(6) of the CCA, clause 7.2 of the SAU specifies that the expiry time of the SAU is 30 June 2040. This period aligns with the 30 year Corporate Plan published by NBN Co in December 2010, and is referred to as a "30 year term" in this submission. Clause 7.5 of the SAU permits NBN Co to request an extension of the 30 year term, at any time within 12 months of the expiry of the SAU. In determining whether to approve the extension, the ACCC must be satisfied that the extension satisfies the reasonableness criteria in section 152AH of the CCA (see section 3.2).

NBN Co is submitting a 30 year SAU to deliver regulatory certainty and stability to NBN Co and Access Seekers by committing to key principles, parameters, methodologies and processes associated with delivering services over a 30 year term. The SAU provides a reasonable degree of certainty to NBN Co and its Access Seekers at the outset of the investment by covering a substantial part of the life of the core network assets, the expected payback period of the initial investment and ongoing prudently incurred costs, reflecting an economically efficient long term cost recovery path. This will encourage efficient use and investment in the NBN by enabling Access Seekers to develop and implement medium to long term business models that are predicated on NBN based supply. Such business models are also the precursor to efficient use of the NBN and will often provide the rationale for further investment by both NBN and Access Seekers in the development and application of new technology.

An extended SAU term is contemplated by the current regulatory regime. The Explanatory Memorandum to the *Telecommunications Competition Bill 2002* (which introduced the concept of SAUs) notes:[88]

> *Unlike ordinary access undertakings, special access undertakings do not have a maximum time limit. This is intended to provide further certainty for investors and an additional incentive for access providers to submit a special access undertaking as special access undertakings have the benefit of providing industry-wide access to the service on terms that are agreeable to the access provider and regulator.*

The ACCC acknowledge this understanding in the FANOC Decision by stating:

> *...allowing SAUs with a longer term than that generally allowed for ordinary access undertakings (three years) is consistent with the objective of providing greater regulatory certainty for investors in new services.*

[88] *Telecommunications Competition Bill 2002* Explanatory Memorandum p.59.

7.1.2 30 years aligned with NBN investment parameters

A 30 year term is consistent with the expected cost recovery time path in the network investment business case model noted in NBN Co's Corporate Plan. The Corporate Plan states:

> *The 30-year extended timeframe has been used in the Base Case because of the long-term nature of the assets in which NBN Co is investing and the long payback period associated with a major infrastructure project of this magnitude.*[89]

A 30 year term for the SAU is commensurate with the economic life of NBN Co's initial stock of assets. While electronic equipment will have a relatively short economic life (i.e. generally less than 10 years) due to obsolescence, it is anticipated (and reflected in NBN Co's statutory accounts depreciation profiles) that passive network assets - cables, ducts and trenches – will have economic lives of up to 30 years. Passive network and civil assets will make up a significant proportion of the total initial network capital investment (excluding the drop and NTU).

Aligning the term of the SAU with the economic life of NBN Co's initial assets and the expected cost recovery time path is likely to encourage efficient investment in infrastructure. If NBN Co were to face substantial uncertainty regarding shifts in the regulatory framework and/or settings over the life of these assets, it may diminish investment incentives and asset depreciation schedules would need to be steepened.

NBN Co's Corporate Plan anticipates an initial 'loss making' period of approximately 10 years. These initial 'losses' will be carried forward on a capitalised basis for recovery in later years. To allow NBN Co to recover these losses at a later date, it is important for NBN Co to have certainty that the 'rules of the game' or the applicable regulatory model will not change before NBN Co has had the opportunity to unwind these losses, and that there is no inability for NBN Co to recover accumulated losses as a consequence of the transition from one regulatory control period to the other.

The 30 year term and the certainty sought in relation to key aspects of the overall SAU design are also consistent with the commercial arrangements that underpin the construction of the NBN and the provision of services. For example, the arrangements between NBN Co and Telstra provide for infrastructure payments for a period greater than the 30 year SAU period. NBN Co believes that a level of regulatory certainty for a commensurate period is appropriate given the long term nature of these commitments, including rolling these costs into NBN Co's RAB over a 30 year period.

In accordance with the legislative framework (discussed in detail in section 3), the effect on investment incentives and legitimate commercial interests of the supplier[90] are considerations the ACCC must have regard to in considering whether a particular thing is likely to result in the achievement of encouraging efficient investment in infrastructure.

[89] NBN Co, *Corporate Plan 2011-2013*, p.133
[90] Subsection 152AB(6) of the CCA

Further in determining incentives for investment, regard must be had to the risks involved in making the investment.[91]

For the reasons outlined above, NBN Co submits that a 30 year term for the SAU will encourage investment incentives by reducing investment risk and demand uncertainty so as to provide NBN Co with an opportunity to recover its prudently incurred costs over time in a way that accounts for an initial period when its revenues are less than its costs. Further, a 30 year term for the undertaking will account for NBN Co's legitimate commercial interests by facilitating a degree of commercial flexibility within certain constraints, to account for the unavoidable investment risk and demand uncertainty associated with NBN Co's investment and to achieve a reasonable return on its investment in the NBN.

7.1.3 Precedents of longer term regulatory commitments in other industries

Although the 30 year SAU is the longest undertaking submitted to date in the telecommunications industry, a substantial period of regulatory certainty is not unusual when compared with other industries.

i Toll roads

In the toll road industry, a number of public-private financed partnerships have been granted lengthy concession periods which in essence provide a commitment by Government to regulatory stability over key operating setting over this period.[92] A number of key factors have been used to determine the length of the concession period with longer concession periods typically associated with larger capital outlays, a ramping up of demand rather than early high usage, and greater demand uncertainty.[93] NBN Co submits that these factors are directly relevant to NBN Co's investment in the NBN.

A higher capital outlay is usually associated with a longer concession period. This includes not only the initial capital cost of the project but subsequent capital costs that occur over the life of the project. The NBN is one of the largest infrastructure capital outlays in Australia's history, and therefore warrants a longer period of regulatory stability.

A longer concession period is appropriate where anticipated levels of demand are uncertain. The timing of demand impacts the timing of cash flows which in turn impacts repayment of debt facilities and returns to equity holders. Accordingly, concession periods tend to be longer for those projects where there is a longer ramp-up in demand and the associated revenues. NBN Co submits that the investment in NBN has a high level of demand uncertainty because the rollout and migration period to the NBN from legacy networks will be approximately 10 years, with customers taking lower speed Product Features before moving up the NBN speed gradient. Further, the full bandwidth capability of the NBN (100

---

[91] Subsection 152AB(7A) of the CCA

[92] Some examples of this include 49 years for Sydney's Eastern Distributor, 45 years for the M2 motorway and the Clem7 Tunnel, 32 years for the M7 and 30 years for the Cross-city Tunnel and the Lane Cove Tunnel.

93 See Brown and Schmidt 1999, BOT (Build, Operate and Transfer) an alternative to traditional data conversion and management, www.gisdevelopment.net/proceedings/gita/1999/business/ba003pf.htm

Mbps) will be well beyond that experienced by almost all existing customers, and a large number of compelling mass market high bandwidth applications have not yet been developed, resulting in additional demand uncertainty.

In a number of projects such as the Sydney Harbour Tunnel, the Government has guaranteed a minimum level of revenue.[94] Such guarantees increase the certainty of cash flows for these projects and thereby lower the required cost of capital demanded by investors. This in turn lowers the concession period for the project. There is no such guaranteed minimum level of revenue for the NBN.

A higher willingness to pay allows the operator to charge a higher price which in turn allows investors to more quickly earn a commercial return on their investment. Accordingly, a higher willingness to pay normally results in shorter concession periods as it avoids the need to ramp up prices over time in an attempt to recover costs more quickly, creating unnecessary commercial risks and the consequent higher return needed to compensate. In the case of the NBN, the NBN Co Corporate Plan foreshadows that most End Users will acquire the basic entry level 12/1 Mbps service at the outset and this will remain the case for a substantial period of time.

NBN Co submits that a number of the factors that are considered in granting a longer concessional period in the road/toll industry are directly relevant and applicable to NBN Co's investment in the NBN, and as such should be a relevant consideration in assessing the reasonableness of the 30 year term of the SAU.

ii Undertakings under Part IIIA of the CCA

In 2006, a 15 year access regime for electricity services was approved under Part IIIA of the CCA, with the decision maker noting the duration of the decision appropriately provides infrastructure owners/operators and users with a degree of certainty in the regulatory environment, especially when developing new infrastructure.[95]

NBN Co considers that similar reasoning should be applied in the case of the NBN. A 30 year undertaking is a reasonable timeframe to provide NBN Co and Access Seekers with regulatory certainty due to the unique investment circumstances NBN Co faces.The Tribunal's recent decisions relating to access to Pilbara iron ore railways support a lengthy undertaking period.[96] The Tribunal accepted a 20 year term for access to the "below rail" service and affirmed Treasurer Wayne Swan's declarations of BHP Billiton's Goldsworthy

94 See National Public Private Partnership Policy and Guidelines

[95]In 2005 the National Competition Council received an application from the Government of Western Australia seeking a recommendation that the state's access regime for electricity network services — Electricity Networks Access Code 2004 — is an effective access regime under s44M of the CCA. Section 44M of the CCA requires the Council to determine whether the Western Australian regime satisfies the principles set out in clauses 6(2) to 6(4) of the Competition Principles Agreement. On 17 July 2006, the Hon Chris Pearce MP, Parliamentary Secretary to the Treasurer, decided that the Western Australian third party access regime for electricity network services is an effective access regime under the National Access Regime and certified it for a period of 15 years.

[96] Fortescue Metals Group Limited [2010] ACompT 2.

Railway Service and Rio Tinto's Robe Railway Service with regulatory access periods of 10 and 20 years for access to two rail tracks and associated infrastructure.

In 2006, the Tribunal noted that a 50 year declaration period under Part IIIA for sewage transmission and interconnection facilities provided by Sydney Water was appropriate.[97] It stated:[98]

> *The likelihood of the facilities by means of which the services are provided being duplicated within 50 years and a competitive service becoming available are extremely remote. While technical change in sewage treatment and water reclamation processes is likely, the need for access to transportation and interconnection services to carry sewage from customers' premises to the competing treatment plants is likely to remain. Investors in new treatment and reclamation plants, which are expected to provide many of the dynamic gains from competition, will require the certainty of long term access arrangements before committing funds to the planning and implementation of such projects.*

7.1.4 Review mechanisms and conferral of power on the ACCC

In the draft FANOC Decision the ACCC expressed concerns about whether it could be satisfied that specific terms and conditions of access in FANOC's SAU, if applied over 15 years, would continue to promote competition and remain in the interests of Access Seekers.[99]

The SAU includes a range of review mechanisms that will ensure the ongoing relevance and reasonableness of the terms and conditions of the SAU over the 30 year term (these are discussed in more detail below in sections 7.2, 7.5.11 and 7.6).

7.2 Interaction with the WBA

The Government intends that NBN Co's terms and conditions of supply be 'subject to clear oversight by the ACCC'.[100]

Under Part XIC of the CCA:

- NBN Co must not supply an eligible service to another person unless:
    - The service is a 'declared service' under subsection 152AL(8A), i.e. a service declared by the ACCC; or
    - NBN Co has formulated a SFAA that relates to access to the service and NBN Co has made the SFAA available on NBN Co's website; or

---

[97] Re Services Sydney Pty Limited [2005] ACompT 7 (21 December 2005), paragraph 214.
[98] Ibid, paragraph 212.
[99] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.102
[100] Explanatory Memorandum to the National Broadband Network Companies Bill 2010 and the Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010, for example at page 9.

- A SAU is in operation which relates to the service.

- Once a service is 'declared', NBN Co is subject to category B SAOs, including specific obligations relating to supply and interconnection in respect of that declared service.

Once declared, the CCA permits the terms and conditions on which an access provider must comply with the SAOs to be dealt with in different documents that exist at the same time. Section 152AY of the CCA establishes a hierarchy between those documents for identifying the terms and conditions on which a Carrier/CSP must comply with the SAOs and various sections specify how inconsistencies between the documents should be addressed.

Broadly:

- Terms and conditions of Access Agreements prevail over inconsistent ACCC access determinations, binding rules of conduct and SAU (sections 152BCC, 152BDB, 152CBIC);

- SAUs prevail over inconsistent ACCC access determinations and binding rules of conduct (sections 152CBIA and 152CBIB); and

- ACCC binding rules of conduct prevail over ACCC access determinations (section 152 BDE).

An SFAA operates independently of this hierarchy as a 'standard offer'. An Access Seeker can require NBN Co to supply it with the declared service on the terms set out in the SFAA.[101]

NBN Co has consistently expressed its intention to lodge a SAU, and to set out terms and conditions of access using both a SAU (if accepted) and a SFAA as permitted by NBN Co's access regime. This approach is explicitly contemplated in the Explanatory Memorandum to the NBN Access Bill which states that SFAAs may supplement the terms and conditions of services set out in a SAU.[102]

This approach is also consistent with the ACCC's interpretation of the intended operation of the CCA, as noted by Group General Manager of the ACCC at a hearing of the Joint Committee on the NBN:[103]

> *The stack effectively places access agreements at the top of the pyramid and then a cascade below that has access to determinations and access undertakings—it might be the other way round, but various determinations by the commission.*
>
> *That is intended—and the commission have no issue with this—to encourage agreement between access providers and access seekers. The difficulty is that, in the event that people enter access agreements, clearly they have no recourse to the commission. The clear intent always was that there would be a framework set by an access undertaking that would be considered and, if suitable, accepted by the*

[101] Explanatory Memorandum to *NBN Access Arrangements Bill 2010,* p.135
[102] Explanatory Memorandum to *NBN Access Arrangements Bill 2010,* p.135
[103] Hansard, Joint Committee on the National Broadband Network, 25 October 2011, p.1

> *commission. That access undertaking would be the framework under which access agreements were then entered into.*

Within this context, NBN Co has sought to structure its SAU and WBA in a way that aligns with the legislative intent as well as to facilitate outcomes that have been identified by the ACCC in section 2.4, including guidance on pricing methodology and key non-price terms of access.

An important feature of the overall design of the SAU is the manner in which it interacts with NBN Co's SFAA: the WBA and other regulatory instruments such as access determinations and binding rules of conduct and the 'hierarchy of instruments' noted above. In addition, the operation of NBN Co's non-discrimination obligations is a key driver in the overall design of NBN Co's SAU and WBA arrangements.

As noted above, NBN Co intends for terms of access to be governed by a SAU (if accepted) and a WBA or an Access Agreement once signed by Access Seekers. These documents are intended to operate as complementary documents and have been drafted accordingly. Each instrument imposes related but distinct obligations on NBN Co: the SAU requires NBN Co to include certain terms in the WBA which put into operation the principles contained in the SAU; the WBA commits NBN Co to comply with those terms in supplying services to Customers. The complementary operation of these documents is further strengthened by NBN Co making provision in the WBA for alignment between this SAU and the WBA (if necessary, for example because the SAU is varied between lodgement and acceptance).

Provided that NBN Co complies with its obligations under the SAU, then Customers will have a remedy under the WBA in the event that NBN Co fails to comply with an obligation that it has committed to observe in the SAU (e.g. a failure to publish a construction rollout plan). If NBN Co fails to include an appropriate obligation in the WBA, thereby depriving a Customer of a remedy under the WBA, then this would be a breach of its obligations under the SAU and the Customer would be able to enforce the terms and conditions of the SAU accordingly.

Therefore the SAU does not exhaustively cover all non-price terms and conditions which will be included in the WBA, but it does cover those which NBN Co anticipates will be of key importance to its Customers. In determining which non-price terms and conditions to include, NBN Co has reflected the approach taken by the ACCC in developing the 2008 Model Non-price Terms and Conditions, which was to[104]:

> *focus on those terms and conditions of access that could be expected to have a material bearing on a service provider's business and hence the range, quality and price of services offered to end-users.*

This leaves it open for NBN Co to include additional non-price terms and conditions in the WBA which are not covered by the SAU, provided that they are not inconsistent with the principles set out in the SAU.

[104] ACCC Final Determination – Model Non-price Terms and Conditions, November 2008, p.4.

Utilising section 152CBA(10A) of the CCA, clause 6 of the SAU confers additional powers and functions on the ACCC by incorporating a regulatory recourse mechanism which can be invoked by an Access Seeker or NBN Co in circumstances where agreement cannot be reached in respect of:

- non-price terms or conditions, to the extent that they are not covered by the SAU; and
- price-related terms or conditions that have not been announced by NBN Co prior to the SAU Commencement Date.

Under clause 6, the ACCC must assess the position put forward by each of the Access Seeker and NBN Co and must accept the drafting of one of the Access Seeker or NBN Co (subject to a power to make non-material refinements, for example to increase the reasonableness or efficacy of the drafting). The ACCC is then required to issue a decision which outlines its reasons and the approved drafting of the term(s) or condition(s).

The regulatory recourse mechanism in clause 6 will operate in a manner that also ensures compliance with other legal requirements. Accordingly, clause 6.3 prevents the ACCC from making a decision that would result in the ACCC or NBN Co engaging in conduct that contravenes the non-discrimination provisions under the CCA.

Further, NBN Co recognises that if the ACCC makes a decision under clause 6.1, other Access Seekers and existing Customers may wish to take advantage of the amended term(s) or condition(s) specified in the decision. Clause 6.3 obliges NBN Co to publish the ACCC's decision on NBN Co's website and offer the amended term(s) or conditions to future Access Seekers and existing Customers. Further, to provide certainty for NBN Co and its Customers, existing Customers who wish to avail themselves of an amended term or condition must do so within 14 days.

In formulating the clause, NBN Co has sought to provide for a transparent and efficient process that avoids (to the extent possible) the problems with the now removed ‘negotiate-arbitrate’ model. [105] Accordingly, NBN Co has provided:

- timeframes to expedite the ACCC’s decision;
- for the exchange of targeted information in relation to the term or condition in relation to which regulatory recourse is sought; and
- in order to reduce the incentives for regulatory ‘gaming’, for the ACCC to select between the positions put forward by the Access Seeker and NBN Co and for the Access Seeker and NBN Co to be bound by the ACCC’s decision.

[105] Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010, see the Explanatory Memorandum to the Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2010, for example at page 4 and also the June 2009 submission of the ACCC in response to the ‘National Broadband Network: Regulatory Reform for 21st Century Broadband’ Discussion Paper issued by the Department of Broadband, Communications and the Digital Economy in April 2009.

Consistent with NBN Co's non-discrimination obligations, the outcome of the process would be made available in any prospective Access Agreement (including via publication as part of NBN Co's WBA) and for any existing Customer (at their election; with a specified timeframe intended to provide certainty for both NBN Co and its Customers).

7.3 Development and withdrawal of Products

Given the proposed term and scope of operation of the SAU, the Product Components and Product Features currently able to be identified within the SAU are not the only ones that NBN Co will make available pursuant to the terms of the SAU. NBN Co will progressively release additional Product Components and Product Features in accordance with its Product Roadmap and the product development processes provided for within the SAU.

Likewise, over time, Product Components and Product Features may no longer be relevant in the market, and NBN Co will seek to withdraw these components and features to ensure it can continue to efficiently supply relevant options for its Customers.

7.3.1 Product Development Forum (PDF)

NBN Co commits to the establishment of a PDF which is designed to:

- promote product innovation from NBN Co in response to preferences expressed by Customers;
- ensure that all Customers are able to participate in product development in a non-discriminatory manner; and
- provide transparency to Customers about NBN Co's product development activities and lead times for product availability.

Schedule 6 of the SAU (Product Development and Withdrawal) creates the framework within which the PDF operates. The obligations in Schedule 6 are intended to ensure that Customers are central to NBN Co's product development and improvement processes and to provide Customers with certainty about the way in which NBN Co will assess and implement product ideas over time. These obligations inform the procedures which are set out in the PDF Processes (discussed below).

First, NBN Co must produce and keep up to date a roadmap of the products which are under development, and those scheduled for implementation. This obligation creates transparency for Customers about NBN Co's product development pipeline and allows Customers to express their preferences in relation to the products which NBN Co intends to offer and the development priorities.

Each of the obligations which apply to new product ideas also applies to the variation of Product Features of existing Product Components.

Second, Schedule 6 creates the obligation for NBN Co to establish and operate:

- a PDF which will be the primary forum for the development of product ideas and Customer engagement; and
- the PDF Processes, a set of detailed rules and structures which ensure the effective operation of the PDF in a manner that leads to its effective utilisation by both NBN Co and Customers.

Schedule 9 of the SAU recognises the potential need to refine the PDF Process, by allowing for their variation through ACCC review. NBN Co has an obligation to periodically submit information about the operation of the PDF to Customers. The ACCC has a right to request further information to assess the success of the PDF and improvements that might be made. If the ACCC determines that improvements could be made to the PDF, Schedule 9 sets out a process for NBN Co and the ACCC to iteratively amend the PDF Processes to implement those improvements.

If NBN Co considers, independent of the ACCC's review process, that improvements can be made to the PDF and wishes to amend the PDF Processes, NBN Co must obtain the ACCC's approval, preserving the ACCC's regulatory oversight of the PDF.

Third, Schedule 6 sets out an indicative list of criteria to which NBN Co must have regard in assessing product ideas and ideas for variations to existing products. The list of criteria is necessarily indicative, because NBN Co expects to receive a broad range of product ideas. However, the indicative list of criteria is intended to provide Customers with a public commitment as to the approach NBN Co will adopt. In addition, NBN Co has obligations (discussed below) to:

- provide reasons for any rejection of a product idea; and
- publish details of proposed product constructs prior to finalisation.

Together these obligations ensure that each of NBN Co's decisions about product development is subject to scrutiny by, and feedback from, Customers throughout the product development cycle.

Fourth, Schedule 6 subjects two fundamental aspects of any product idea to Customer consultation:

- product pricing; and
- product service levels (including any remedies which may apply for breach of the service levels).

These obligations ensure that NBN Co will not introduce a new or varied Product Component or Product Feature without prior consultation with Customers and an opportunity for Customers to raise issues and (if necessary) objections to such proposed product solutions.

Where product ideas require network investments, Schedule 6 of the SAU contemplates further limits on NBN Co. In addition to limitations on product pricing and service levels, Schedule 6 provides that NBN Co will not introduce a product solution which requires network investment until it has satisfied prudency requirements for such product solutions as required by schedule 8 of the SAU. Together, these obligations ensure that product development results in product solutions which are implemented based on prudently incurred costs which are recovered in a manner which is commercially acceptable and known by Customers.

Schedule 6 of the SAU does not require NBN Co to submit immaterial Product Component or Product Feature variations to the formal customer consultation process. Schedule 6 also provides that all variations to Product Components and Product Features, whether or not minor, must be notified to Customers through the PDF.

In addition to the PDF which is a forum exclusively open to NBN Co's Customers and Access Seekers who agree to the terms applicable to NBN Co's Customers, NBN Co recognises that valuable contributions to product development and improvement may arise from a variety of sources. In addition to the PDF, Schedule 6 requires NBN Co to create a Public Ideas Forum, through which any member of the public may contribute new product ideas and suggestions for improving existing Product Components and Product Features. Useful ideas which are submitted to the Public Ideas Forum can then be submitted for development through the PDF by either NBN Co or its Customers.

7.3.2 Features of the Product Development Forum and PDF Processes

The PDF Processes set out the practical rules and structures through which the PDF objectives are achieved.

NBN Co must communicate with Customers on a non-discriminatory and transparent basis about NBN Co's activities and decisions at each key point of product development and variation. This transparency empowers Customers to help ensure that each product idea is judged on its merits and is accorded development resources that are commensurate with the potential value of the product idea to NBN Co and to Customers.

When an idea is submitted to NBN Co, it is published so all Customers are aware of all product ideas (including ideas for the variation of existing Product Components and Product Features). NBN Co notifies the Customer that submitted the product idea of how long it will take NBN Co to conduct an initial assessment. This timeframe is likely to be based on multiple variables including the complexity of the product idea, NBN Co's existing product development program and the likely market for the product idea.

Once NBN Co completes an initial assessment, if NBN Co decides to further develop a product idea or variation, NBN Co must publish a summary paper setting out all relevant details for Customers to understand the product solution being proposed. If NBN Co decides not to pursue a product idea or variation, it informs Customers and provides reasons for that decision.

For product ideas and variations that NBN Co pursues, it sets out a project plan for developing the product idea or variation with Customers, including the details of the form that Customer consultation will take. NBN Co must notify Customers of any changes to the project plan as the product solution is developed. Changes may, for example, occur due to unforeseen difficulties with product development or due to prioritisation of another product idea or variation.

After a product idea or variation has been fully developed through Customer consultation and is ready for implementation, NBN Co informs Customers of the implementation timetable and plan. As with product development, NBN Co must inform Customers of any changes to the implementation plan.

By ensuring continuous disclosures to Customers throughout the development process and requiring reasons for all decisions, the PDF Processes ensure that NBN Co's stewardship of product development, including each decision that may affect prioritisation and speed of development, is transparent and open to critique by all Customers.

NBN Co anticipates that the product ideas submitted to it will vary widely in complexity, novelty and utility. In addition, there is a degree of uncertainty about exactly what products Customers will require and request. For that reason, strict obligations on NBN Co to undertake each of the steps in the product development process transparently are balanced by the PDF Processes preserving flexible timeframes and modes of Customer consultation to allow for a variety of product ideas to be developed in the manner most effective and appropriate for each such product idea.

Product ideas and variations may be developed through workshops, submissions, mailing lists, working papers, or any other collaboration modes that are appropriate to a particular product idea or variation proposal. As NBN Co has an obligation to publish anticipated timeframes and project plans for assessment, development and implementation, Customers can ensure the timeframes and project plans are reasonable in the context of each product idea without NBN Co attempting to commit to a 'one size fits all' process that may or may not be useful in any or all instances.

Published project plans and timetables will give Customers the means to hold NBN Co accountable on a case-by-case basis without requiring artificial or unrealistic constraints and without requiring onerous procedures which stifle the rapid development of product ideas and variations which are capable of rapid development.

The PDF Processes only impose two substantive requirements for Customers to follow:

- each Customer must commit to maintaining the confidentiality of product ideas and related discussions; and
- each Customer that submits a product idea must disclose to NBN Co any intellectual property rights owned by a third party, including details of those intellectual property rights together with the original submission of the product idea.

NBN Co reserves the right to share all product ideas, Customer consultation materials and other product development related information to all Customers that register to participate in the PDF. This approach ensures that product development priorities and justifications are made to Customers in a non-discriminatory manner. In order to make such disclosures acceptable to Customers, the PDF Processes require all parties involved in product development to agree to a multilateral confidentiality agreement, under which each Customer undertakes to the original discloser of product development confidential information to keep product development confidential information confidential.

7.3.3 Product Withdrawal

NBN Co commits in Schedule 6 of the SAU to:

- provide Customers with at least 12 months' notice of any proposed withdrawal of a Product Component or Product Feature;
- provide Customers with at least 12 months' notice of proposed migration plans where a Product Component or Product Feature will be withdrawn;
- consult Customers through the PDF about any proposed withdrawal of a Product Component or Product Feature;
- have regard to express operational, technological and commercial impacts on Customers of any proposed withdrawal of a Product Component or Product Feature; and
- not withdraw Product Components or Product Feature and introduce similar Product Components or Product Feature for the purpose of avoiding or circumventing the operation the CPI/2 price control.

Together, these commitments provide Customers with long lead times to prepare for any Product Component or Product Feature withdrawal and with a high degree of input into proposals regarding such withdrawals.

7.3.4 Summary of Product Development and Withdrawal

NBN Co considers that the proposed product development and withdrawal arrangements in the SAU will:

- promote product innovation from NBN Co in response to preferences expressed by Customers;
- ensure that all Customers are able to participate in product development in a non-discriminatory manner;
- provide transparency to Customers about NBN Co's product development activities and lead times for product availability; and
- provide Customers with long lead times to prepare for any Product Component or Product Feature withdrawal and with a high degree of input into proposals regarding such withdrawals.

7.4 Dispute Management Rules

7.4.1 Approach

NBN Co has sought to ensure that there is a robust, speedy, open and non-discriminatory process for the resolution of disputes that might arise between it and its Customers and for the implementation of dispute outcomes. By including the key principles of that process in the SAU, NBN Co and Customers have certainty of access to a stable dispute resolution process.

NBN Co's non-discrimination obligation presents some unique challenges in the context of dispute resolution. This has driven the development of a bespoke dispute management process with some novel features:

- the process for resolving disputes (though not the resolution of the dispute itself) is managed and facilitated by an independent third party, the Resolution Advisor; and
- disputes can be designated as Bilateral Disputes or Industry Relevant Disputes. If the resolution of a dispute will, or is likely to, materially affect other Customers, those other Customers may apply to actively participate in the dispute resolution process (this is an Industry Relevant Dispute, and all other disputes are Bilateral Disputes).

7.4.2 Industry Relevant Disputes

The need for a NBN Co specific process to deal with Industry Relevant Disputes arises from NBN Co's non-discrimination obligation. Because NBN Co is required not to discriminate between Access Seekers, it is likely that the matters at issue in a dispute between NBN Co and one Customer will have an impact on other Customers. More than this, if the outcome of a dispute is that NBN Co has to change either the terms of the WBA or its operational processes for the supply of services, then this is also likely to have an impact on other Customers.

In this context, it makes little sense for NBN Co to go through a separate dispute resolution process with each Customer in relation to the same issues. Apart from being time-consuming and expensive, it would make it virtually impossible for NBN Co to comply with its non-discrimination obligation. For this reason, the Dispute Management Rules set out the circumstances in which multiple Customers may become parties to one dispute with NBN Co.

7.4.3 Dispute resolution forum

If NBN Co and a Customer have been unable to resolve a dispute through internal escalation and reached the point of referring it to formal dispute resolution, then they may see little value in mediation of the dispute, and prefer to go straight to resolution by a third party. If that is not the case, the SAU leaves it is open to them to agree to mediate the dispute.

It is also open to NBN Co and the Customer to agree that a dispute should be resolved by an expert, for example an expert in technical or accounting matters.

In all other cases, the dispute (whether bilateral or industry-relevant) must be resolved by arbitration in accordance with the *Commercial Arbitration Act 2010* (NSW).

7.4.4 Conduct of arbitrations under the Commercial Arbitration Act 2010 (NSW)

NBN Co has selected arbitration as the default dispute resolution forum on the basis that it offers an efficient and effective solution which will enable the parties to a dispute to minimise as far as possible the amount of time, money and resources which need to be diverted from their core business.

These objectives are furthered by relying, as a general principle, on the procedural rules set out in the *Commercial Arbitration Act 2010* (NSW). These are independently developed, tried and tested and well-understood by the legal profession and the industry. The non-mandatory provisions of the Act may be excluded or varied in ways consistent with the general principles governing the dispute resolution process which NBN Co commits to under the SAU.

7.4.5 Appointment and role of the Resolution Advisor and Pool members

It is in the interests of both NBN Co and access seekers to ensure that key decision-makers in the process are independent and that the process is fair and transparent, to reduce the risk of decisions being appealed on procedural grounds. NBN Co has therefore devised safeguards against bias and the appearance of bias, including a commitment to include in the WBA a process for the nomination and appointment of one or more (independent) Resolution Advisors and a process for resolving disagreements about such appointments.

When a dispute arises, the Resolution Advisor (or Resolution Advisors) will be responsible for appointing a panel of three independent arbitrators from a pool of arbitrators (the Pool) who will be responsible for the classification of the dispute as either an Industry Relevant Dispute or a Bilateral Dispute.

NBN Co will ensure at the commencement of each financial year that it allocates sufficient funds to pay the amounts owing or reasonable forecast to be owing to a Resolution Advisor or member of the Pool in that Financial Year.

7.4.6 Summary of Dispute Management Rules

NBN Co has sought to ensure that there is a robust, speedy, open and non-discriminatory process for the resolution of disputes that might arise between it and its Customers and for the implementation of dispute outcomes. By including the key principles of that process in the SAU, NBN Co and Customers have certainty of access to a stable dispute resolution process.

7.5 Other non-price terms and conditions

7.5.1 Introduction

As NBN Co described in the SAU discussion paper, NBN Co is conscious of the need to balance Access Seekers' need for certainty about how NBN Co will operate its business with NBN Co's need for flexibility to adapt to changes in the industry and market environment by evolving its business operations over the term of the SAU. This applies to the non-price terms and conditions on which NBN Co will provide wholesale access products, as much as it does to terms relating to pricing, services, networks and products.

With the objective of achieving this balance, NBN Co has developed an approach to other non-price terms in the SAU which is:

- principles-based;
- product-neutral; and
- non-exhaustive.

Each of these features is explained in further detail below.

7.5.2 NBN Co's principles-based approach

NBN Co's view is that locking-in a complete set of non-price terms and conditions for the 30 year term of the SAU in an industry that will continue to evolve is neither necessary nor desirable, and risks stifling innovation. The SAU therefore does not contain the detailed terms and conditions on which NBN Co will supply services. These are set out in the WBA.

What the SAU does is prescribe a set of principles which provide a framework for, and impose certain requirements and limitations on, the non-price terms and conditions which may be set out in the WBA. Although the non-price terms and conditions in the WBA may change over time, they must remain consistent with the principles set out in the SAU while the SAU remains in force.

7.5.3 Product-neutral terms and conditions

The SAU contains one set of non-price terms and conditions which will apply to all wholesale access products supplied by NBN Co, regardless of technology, geography, whether the Customer is using the product to supply wholesale or retail products or any other variables. This approach is reflected in the WBA, which is also designed to be product-neutral. It ensures that the SAU will remain relevant regardless of changes in the products offered by NBN Co over time.

7.5.4 Enhancements to non-price terms and conditions previously proposed

NBN Co has made a number of enhancements to the non-price terms and conditions proposed in the SAU discussion paper released in July 2011 in response to feedback received from Access Seekers and the ACCC.

These include:

- the addition of commitments relating to relationship management, billing and payment, access to common property, default management and risk management;
- broader and more detailed commitments from NBN Co to consult with Customers; and
- a greater emphasis on the role of the ACCC, for example in determining the criteria that NBN Co will apply in a POI Review.

7.5.5 Non-discrimination

Non-discrimination is a central tenet of the legislation applicable to NBN Co, and NBN Co's obligations in this regard have been a key consideration in the development of the commitments made in the SAU and the non-price terms and conditions of the WBA.

The impact of the non-discrimination obligation is particularly acute in relation to contract lifecycle management and dispute management, as discussed further below and in section 7.5.19.

7.5.6 Consultation principles

NBN Co attaches great importance to consultation with its Customers and the ACCC as a way for NBN Co to understand and take into account its Customers' concerns and requirements in relation to the WBA and, through doing so, ensure that the WBA remains relevant and continues to serve the interests of Customers over the 30 year term of the SAU. Equally important, consultation also serves as a channel for NBN Co to communicate to its Customers its concerns, requirements and rationale, as these arise and evolve. For this reason, the SAU sets out both NBN Co's commitment to consult with Customers and the key purposes of that consultation.

7.5.7 Relationship management

NBN Co wants to build and maintain strong, positive and productive relationships with all of its Customers. One of the key anticipated benefits of building and maintaining such relationships is that it will reduce the number of disputes that arise over time and facilitate the resolution of disputes that do arise without the need for formal dispute resolution. This will benefit both NBN Co and its Customers by reducing the amount of funds and resources diverted from the business to deal with the resolution of disputes. The principle that both parties should be required to commit resources to relationship management with this objective is therefore included in the SAU.

7.5.8 Rollout progress information

Again reflecting the importance that NBN Co attaches to transparency in its communication with Customers, NBN Co commits to publish rollout plans describing where, when and to how many premises NBN Co plans to roll out the NBN, and weekly summaries of the premises passed by the NBN.

By committing to provide this information in annual, quarterly and monthly plans which become progressively more detailed the closer they get to the actual rollout, NBN Co will pass on the benefit of the greater visibility and certainty as to the progress of the rollout which it has over time, to Customers. This will equip Access Seekers and Customers in a transparent and non-discriminatory way to develop product and marketing plans and strategies, and by doing so promote competition and innovation in the market.

7.5.9 POI Rollout Progress

NBN Co recognises the significance of POI status for business planning by Access Seekers and Customers. Accordingly, NBN Co provides for NBN Co to provide Access Seekers with information about the progress of the POI rollout. This also places all Access Seekers in the same position with respect to planning of the provision of services to End Users.

7.5.10 Major NBN Upgrades

NBN Co acknowledges the potential operational and cost impact of major changes to the NBN on the provision of services by its Customers. Its commitment to notify and consult in relation to major upgrades is therefore designed with the aim of understanding, and assisting Customers to minimise, disruption to existing services and the cost impact for Customers (and therefore End Users of their services). The terms and conditions proposed are based on those included in Schedule 13 of the ACCC's final access determinations Nos. 1 to 6 of 2011 for Fixed Line Services.

7.5.11 Review of Points of Interconnect

i Initial POI locations

A POI is the inter-network location where traffic is exchanged between one network and another. With the move to the NBN, copper exchange serving areas (ESAs) will be replaced by fibre serving areas (FSAs). Given the differences between copper and fibre technologies there will be significantly fewer FSAs than ESAs.

In December 2010, the ACCC advised the Government that a semi-distributed approach to locating initial POIs is best likely to meet the LTIE. The ACCC considered that the initial POIs for the NBN would best meet the LTIE when they are located according to the following principles (the Competition Criteria):

> (a) *it is technically and operationally feasible to allow interconnection (usually at an Ethernet aggregation switch); and*
>
> (b) *there are at least two competitors with optical fibres within a nominated distance from that location which:*
>
> > (i) *connect a site to an optical fibre network which is connected to a capital city, and:*

> (ii) *deliver wholesale transmission services which are suitable for use by service providers who wish to connect to the NBN at that location; and*

> (c) *there is other evidence that the particular route is, or is likely to become, effectively competitive (such as long-term contractual arrangements for the acquisition of transmission services).* [106]

In releasing the Statement of Expectations for NBN Co in December 2010, the Government outlined its expectation that NBN Co will act to ensure that POIs are located in accordance with the 'competition criteria' formulated by the ACCC.[107]

In applying the Government's decision to adopt a semi-distributed POI approach, NBN Co has worked with the ACCC to apply the Competition Criteria to derive set of network planning rules (based on the Competition Criteria) and to develop a list of initial POI locations based on the application of the Competition Criteria and planning rules. NBN Co has been working with the ACCC to further refine this list, which now contains 121 initial POI locations.

In clause 6.7(a) of Schedule 3 of the SAU, NBN Co has undertaken to specify a POI for each CSA. The SAU also includes an initial list of POIs (POI List) which will be the list of POI locations made by the ACCC for the purposes of section 151DB of the CCA.[108]

ii POI commitments in the SAU

In clause 6.1 of Schedule 11 of the SAU, NBN Co has committed to reviewing the locations of any Established POIs immediately following the expiry of the First Period[109] and every five years after that. NBN Co will also be able to conduct reviews of the locations of Established POIs at any time provided that it does not commence a review within 12 months of the completion of any previous POI Review pursuant to schedule 11.

Prior to conducting a review, NBN Co is required to consult with the ACCC in relation to the criteria to be applied by NBN Co in conducting the review. NBN Co will also consult and reasonably consider the views of industry in relation to the criteria to be applied by NBN Co in conducting the review.

NBN Co's ability to relocate, close or add an Established POI stemming from the review process is subject to ACCC approval.

---

[106] ACCC, *ACCC advice to Government – National Broadband Network Points of Interconnection*, November 2010, p. 4

[107] Statement of Expectations from shareholder Ministers, 17 December 2010, p.7: "While NBN Co is expected to consult closely with the ACCC in relation to the POIs, the specific location of the POIs will be a matter for NBN Co".

[108] Section 151DB of the CCA requires the ACCC to prepare a written list of POIs and publish a list in force on its website. Under subsection 151DB(2), a POI specified in a 'list in force' is a listed POI for the purposes of the authorised conduct provisions under subsection 151DA(2) of the CCA.

[109] Defined in the SAU as the period commencing on the SAU Commencement Date and ending on 30 June 2017.

NBN Co has also undertaken to provide its Customers with specified notice of any alterations to POI locations.

7.5.12 Access to platforms

Locking NBN Co into using a particular format or technology to interface with its Customers over the 30 year term of the SAU would be nonsensical. The key points for Customers, reflected in NBN Co's commitments set out in this clause of the SAU, are that:

- Customers will be given the option of interfacing with NBN Co through a platform that includes certain key functionality, which will assist them to manage their business processes effectively; and
- there will be transparency as to the implementation and design of that platform and terms on which Customers can access it, which ensures that Customers operate on a level playing field in their operational interactions with NBN Co.

7.5.13 Billing and payment

In consultation with NBN Co, Access Seekers have identified the right to raise billing disputes as of key importance to them in order to provide balance to NBN Co's rights and remedies in relation to billing and payment (or rather, non-payment) under the WBA.

The SAU commits NBN Co to give Customers the right to raise billing disputes, withhold payment pending resolution of a billing dispute and an entitlement to interest on any amounts overpaid to NBN Co as the result of a billing error. This provides Customers with comfort both that NBN Co is incentivised to provide accurate and timely billing and that they have protection from the effects of any billing errors that do occur.

7.5.14 Credit management

The novelty of the NBN and services which can be provided using it, uncertainty as to the demand for those services and the potential diversity of NBN Co's Customers creates a potentially significant, if uncertain, risk of Customer payment default and therefore credit risk for NBN Co in its supply of NBN services.

NBN Co faces the challenge of balancing responsible management of that risk with the need to avoid unduly restricting access to the NBN, which itself risks damaging competition in the market and therefore the interests of end users. This is a complex task and is likely to require re-tuning of NBN Co's approach over time to deal with the varied circumstances of NBN Co's Customers and changes in the market. There is also a balance to be struck between NBN Co's need for flexibility to achieve this and Customers' need for certainty as to the credit management requirements they will be subject to, in order to manage any processes and costs involved.

These dynamics provide the context to the scope of NBN Co's commitments in relation to credit management in the SAU. The SAU commits NBN Co to develop and comply with a credit policy and to provide clarity in that policy on NBN Co's rights and obligations in respect of credit management. It does not however prescribe how NBN Co must review and mitigate credit risk, giving NBN Co appropriate and necessary flexibility to tailor its approach as required over time (noting that NBN Co will be subject to the non-discrimination obligations in managing its credit policy, which will form part of the WBA).

7.5.15 Access to Common Property

NBN makes a clear commitment in the SAU to take responsibility for procuring access to property not controlled by Customer as required for purposes related to the WBA, and not to transfer this responsibility to Customer. This was identified in consultation as an issue of particular concern for Access Seekers because of the potentially high cost to Customers of negotiating access to property on a commercial basis with landlords and property managers.

7.5.16 Confidential information

This section of the SAU defines in broad terms the circumstances in which NBN Co can disclose and use Customers' confidential information. Its objective is to give Customers reassurance that their confidential information will not be used or disclosed in ways which are unjustified or would harm their interests, whilst giving NBN Co the rights to use and disclose that information that it will need to deliver services under the WBA and comply with its regulatory obligations.

7.5.17 Default management

Given the risk that breach of the WBA by one Customer has the potential to damage not just the interests and property of NBN Co but also those of its other Customers, and to undermine NBN Co's ability to effectively deliver services, NBN Co has a legitimate interest in ensuring that it may take action against a Customer in the event of a breach or other default event.

To ensure that the legitimate interests of Customers are given counter-balancing weight and assist Customers to minimise the adverse impact on their End Users, NBN Co commits to reasonable restrictions on its exercise of those rights.

7.5.18 Risk management

The management of risks and liability is an issue of key significance to both NBN Co and its Customers; each concerned to protect their legitimate business interests by not being liable for the conduct of the other, but equally concerned to limit their liability at a level which enables them to manage their business effectively.

NBN Co makes specific commitments in respect of what types of liability will be subject to exclusions or indemnities under the WBA. This gives Customers comfort that although specific liability terms may be varied over time, certain exclusions and indemnities will be provided both for Customers and NBN Co's benefit throughout the term of the SAU.

7.5.19 Contract lifecycle management

NBN Co's central consideration in developing the principles which will govern change management under the WBA, has been how to ensure that NBN Co is able to comply with its non-discrimination obligation whilst satisfying each individual Customer's desire for control over the legal and commercial relationship they have with NBN Co. The non-discrimination obligation makes it challenging for NBN Co to commit to make changes to their contract with each Customer by agreement only.

NBN Co's approach is set out in the SAU in the form of a relatively detailed set of conditions under which NBN Co may make changes to the terms of its contract with a Customer. This includes, as a general principle, that changes may only be made following significant consultation and notification, and that NBN Co gives Customer the opportunity to seek an interim access determination or binding rule of conduct from the ACCC which might require NBN Co to alter its proposed course. The dual mechanisms of consultation, and recourse to the ACCC, are introduced to mitigate the impact of NBN Co's unilateral change rights on Customers.

7.6 Review and variation of the SAU

Key aspects of the SAU are subject to review as follows:

- every 5 years during the Term, NBN Co will review the operation of the customer engagement process and the PDF Processes and will comply with any outcome of such a review; and
- within the SAU Review Period (which will commence at the earlier of 30 June 2027 or when the Communications Minister declares that the NBN should be treated as built and fully operational under section 48 of the *National Broadband Network Companies Act 2011* (NBN Companies Act);
- NBN Co will review the SAU Review Matters and submit a request for variation of the SAU to the ACCC.

These are discussed in turn below.

7.6.1 Review of customer engagement process and PDF processes

The SAU provides for a 5 yearly review process in the course of which the ACCC will determine:

- the extent to which the customer engagement process in clause 6 of Schedule 8 (Prudency) and the PDF Processes (in combination with the SAU) are resulting in effective engagement between NBN Co and its Customers in relation to the following matters:
  - whether the customer engagement process and the PDF Processes are resulting in the development of new products for End Users in response to demand;
  - whether the level of Customer understanding of the customer engagement process and the PDF Processes provides for effective engagement;

- whether NBN Co and Customers (in the aggregate) have devoted sufficient resources to participate in the customer engagement process and the PDF Processes;
- whether the customer engagement process and the PDF Processes provide for an appropriate balance between the interests of NBN Co, Customers and End Users, having regard to the diversity of those interests and the need for trade-offs between those interests;
- whether Customers are willing to engage with NBN Co through the customer engagement process and the PDF Processes; and
- whether the customer engagement process and the PDF Processes are encouraging the economically efficient use of the NBN Co Network.

- whether to accept or reject any NBN Co customer engagement/PDF Review Proposal.

The ACCC may also determine that NBN Co's proposal requires variation and on what basis.

NBN Co considers that review scope, process and frequency are appropriate and should ensure that, through timely and well considered variations, effective engagement between NBN Co and its Customers is achieved over the term of the SAU.

7.6.2 SAU Review

NBN Co must undertake a review of aspects of the SAU within the SAU Review Period, which is the period extending from:

- the date that a declaration is made by the Communications Minister that the NBN should be treated as built and fully operational, under section 48 of the NBN Companies Act; to
- the date that declaration is made by the Finance Minister that conditions are suitable for the entering into and carrying out of a NBN Co sale scheme takes effect, under subsection 50(6) of the NBN Companies Act.

If the SAU Review Period has not commenced by 30 June 2027, the SAU Review Period will be from 1 July 2027 to 30 June 2028.

Once the SAU review period commences, NBN Co must conduct a review of the SAU Review Matters:

- the approach to prudency of capex and opex, including whether, and the extent to which, capex and/or opex should be subject to incentive based prudency mechanisms, and the role of the ACCC in assessing the prudency of capex and/or opex;

- the process by which capex and opex will be incorporated into future calculations of the RAB, ABBRR and ICRA; and
- the approach to WACC, including the methodology for setting and reviewing the WACC (or WACC parameters) from time to time.

In addition, NBN Co may, in its discretion, also review any of the following aspects of the SAU:

- the treatment of taxation allowance in the calculation of the ABBRR;
- depreciation profiles;
- valuation of the RAB and ICRA;
- the nature of any price control arrangements;
- reporting arrangements; and
- any other matters related to the operation of this SAU.

Following the review, and before the end of the SAU Review Period, NBN Co must lodge a SAU variation that ACCC will then assess pursuant to sections 152CBG and 152CBH of the CCA. In preparing such a variation, the SAU requires NBN Co to have regard to any report made available by:

- the Productivity Commission under section 49 of the NBN Companies Act; and
- the Parliamentary Joint Committee on the Ownership of NBN Co under clause 3 of Schedule 2 of the NBN Companies Act.

NBN Co considers that the SAU review mechanism is appropriate for the following reasons. The timing is intended to coincide either with the preliminary stages of the privatisation process or the middle of the SAU term. Some aspects of the SAU may not be suitable if NBN Co is no longer fully government owned and some may, in any event become less suitable over time (so a mid-term review may be a practical means of ensuring the continued workability of the SAU). Accordingly, the scope of the SAU review must include the prudency provisions, which is appropriate because the SAU design relies to some extent on NBN Co being subject to broader oversight of its expenditure by both the Government and the Parliament. NBN Co has the option of including other matters in the SAU Review, but these are not mandatory because the SAU design, as it relates to those other matters, is not reliant on NBN Co's ownership and it is not possible, at this point in time, to definitively identify the aspects of the SAU that may be appropriate for review. The process for the SAU review makes use of the existing provisions in the CCA in relation to an access provider proposing variations to a SAU.

Part C – SAU Assessment

8 Reasonableness of the SAU

Key points

- NBN Co has identified a number of price-related terms and conditions in the SAU that are reasonably necessary for achieving uniform national pricing.
- In accordance with subsection 152CBD(5A) of the CCA, NBN Co submits that the ACCC cannot reject the SAU for a reason related to these terms and conditions of the SAU (because they are reasonably necessary to achieve uniform national pricing).
- In addition to supporting the achievement of uniform national pricing, the terms and conditions of the SAU promote the LTIE, by promoting competition, achieving any-to-any connectivity and encouraging efficient investment in and use of infrastructure as compared to the counterfactual of having terms of access set out via an access determination and/or SFAAs alone. NBN Co submits that the regulatory certainty provided by the SAU strikes an appropriate balance between the legitimate interests of NBN Co and Access Seekers using the NBN Access Service.
- NBN Co accordingly submits that the ACCC should be satisfied that the terms and conditions in the SAU are reasonable (in accordance with the statutory criteria set out in section 152AH of the CCA).

Under subparagraph 152CBD(2)(b)(ii) of the CCA, the ACCC cannot accept a SAU submitted by a NBN corporation unless it is satisfied that the terms and conditions specified in the SAU are reasonable. The following sections provide an assessment of the SAU against the statutory criteria in section 152AH of the CCA (which were previously described in section 3.2). This assessment also addresses the specific provisions in the CCA relating to uniform national pricing.

8.1 Promotion of the LTIE

In assessing whether the SAU promotes the LTIE, NBN Co submits that the relevant counterfactual for the analysis is a scenario in which there is there no SAU but the NBN proceeds in accordance with all current plans. In this scenario:

- although NBN Co's Product Components and Product Features would not become declared services via a SAU, declaration for current Product Components and Product Features would already have occurred via the publication of the WBA as a SFAA on NBN Co's website; and

- the ACCC may, but is not obliged to, at some point make access determinations relating to some or all of the terms and conditions of access concerning some or all of the services declared via NBN Co's SFAA.

Given that it is obviously not known what the nature, extent or timing of access determinations will be in the counterfactual scenario, it is reasonable to assume that the factual scenario (with the SAU) will provide greater regulatory certainty earlier and with more consistency (through ex ante acceptance of the SAU) than may be possible via the alternative (potential ex post access determinations and/or just reliance on the SFAA).

NBN Co will discuss this counterfactual in the following sections to demonstrate that if the ACCC accepts the SAU it is likely to promote the LTIE to a greater extent than if the ACCC were to reject the SAU and terms and conditions of access were determined through a combination of SFAAs and access determinations.

8.1.1 Promoting Competition

A preliminary step in assessing whether the terms and conditions of the SAU promote competition is to identify the relevant markets within which such competition will take place, although as outlined by the ACCC, it is sufficient to broadly identify the scope of the relevant markets likely to be affected.[110]

As NBN Co intends to offer a Layer 2 wholesale bitstream service supplied over NBN Co's fibre, satellite and wireless networks, NBN Co submits that the relevant markets are likely to be downstream markets where the NBN Access Service provides a key wholesale input for Access Seekers to supply Carriage Services or Content Services, such as voice telephony, high-speed broadband services, IPTV services and a range of other next generation services (e.g. e-health and telemedicine, high quality video conferencing, etc). In addition, some wholesale markets are also relevant, both in regard to wholesale aggregation and transmission backhaul. The relevant markets therefore include (but are not limited to):

- the retail markets for supply of:
  - fixed voice services;
  - fixed broadband services;
  - bundled voice and broadband services;
  - content services;
- the wholesale markets for supply of:
  - fixed voice services;
  - fixed broadband services;

[110] ACCC, *Inquiry to make final access determinations for the declared fixed line services – Final Report, July 2011*, p. 19

- bundled voice and broadband services;
- content services; and
- backhaul transmission services.

In considering whether competition will be promoted in these markets, subsection 152AB(4) of the CCA requires that the ACCC have regard to the extent to which the terms and conditions in the SAU will remove obstacles to end-users of listed services gaining access to listed services.

i Service description

The ACCC has previously noted that in order to promote competition, a SAU should provide for effective, non-discriminatory access by Access Seekers to particular Carriage Services.[111] In the context of FANOC's FTTN network the ACCC noted:[112]

> *The ACCC is of the view that effective access to an FTTN network would require the specification of a bitstream access service over the bottleneck portion of the network, at as low layer within the network as feasible, so as to give Access Seekers as much control as possible over their own customer traffic.*

NBN Co submits that the NBN Access Service promotes competition in a range of retail and wholesale markets (such as those for the supply of voice, broadband, bundled voice and broadband and content services) for the reasons outlined below.

The service description of the NBN Access Service provides for all Access Seekers to have non-discriminatory access to a layer 2 bitstream product with flexibility and control over configuring services for their End Users. The component based product construct will provide Access Seekers with the flexibility to configure capacity on the NBN Co Network as if it were the Access Seeker's own network thereby facilitating the ability to create alternative competitive service delivery models.

NBN Co's design of its products also allows for multiple Access Seekers to simultaneously provide retail and wholesale services to the same End User location – this effectively means that competition will be promoted between Access Seekers to provide services to End Users and service providers on a service-by-service or application-by-application basis.

Providing for a functional, geographically and technologically neutral service description in conjunction with the location of POIs where contestable backhaul is available (committed to in the SAU) is likely to create an open and level playing field for competition at the retail level that is characterised by low barriers to entry, thus maximising the prospect of entry in all geographic areas. These same factors will also promote competition at the wholesale level, which will assist with keeping the barriers to retail entry as low as possible.

[111] ACCC, *Assessment of Foxtel's Special Access Undertaking in relation to the Digital Set Top Unit Service - Final Decision*, p.25

[112] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.137

A service description across all access technologies, will allow Access Seekers to readily provide services across the entire country, expanding the range of competitive offerings that can be made available to End Users.

NBN Co submits that the service description and related terms and conditions in the SAU are likely to promote competition as compared to the counterfactual scenario because the terms and conditions set out in the SAU will provide an upfront and definite long-term commitment about the service to be offered by NBN Co (this includes commitments relating to the evolution of NBN Co's services over 30 years). For example, the SAU provides that the basic building block Product Components of the NBN Access Service will not be withdrawn by NBN Co during the term of the SAU, thus providing Access Seekers with a high degree of certainty about the products that may be acquired for them to provide services to End Users over the long term.

In the FANOC Decision, the ACCC outlined that a Service Description addressing the minimum elements noted in the decision will promote the LTIE. NBN Co submits that the Service Description of the NBN Access Service aligns with the requirements of the FANOC Decision to the extent applicable and therefore promotes the LTIE (see the analysis in section 5).

ii Price-related terms and conditions

In the context of NBN Co's objective of providing a long-term framework necessary for UNWP, NBN Co submits that the combination of Price Controlled Offers, CPI/2 Price Control and LTRCM will promote competition for the reasons set out below.

The ACCC has previously considered that a combination of specific initial prices and a pricing methodology to determine subsequent prices is an appropriate means to provide regulatory certainty on pricing matters to both the access provider and Access Seekers s over a lengthy SAU. The ACCC considered that regulatory certainty is likely to promote competition.[113]

NBN Co submits that the Price Controlled Offers in the SAU, which specify Maximum Regulated Prices for a set of basic services for five years across NBN Co's fibre, wireless and satellite access networks, will provide regulatory certainty to both Access Seekers and NBN Co, thereby promoting competition in a range of retail and wholesale markets (such as those for the supply of voice, broadband, and bundled voice and broadband services). The Price Controlled Offers are also designed to anchor the prices of other Product Components and Product Features until the expiry of the Price Controlled Offers and then, in combination with the CPI/2 Price Control, for the duration of the SAU.

As discussed in section 6.4, the price points adopted for the Price Controlled Offers will facilitate the transition from legacy networks to the NBN because they will allow Access Seekers to serve their existing base of End Users at a wholesale cost of supply that compares favourably to that which they currently face (this includes serving voice-only End Users).

---

[113] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.137

Over time, the CPI/2 Price Control will also serve to promote competition in a range of retail and wholesale markets (such as those for the supply of voice, broadband, bundled voice and broadband and content services), and will do so in a number of ways. First, it will provide a degree of price stability and certainty that will facilitate Access Seekers making available retail and wholesale offers for longer contract terms. Such longer term offers are a key feature of how competition typically occurs in retail and wholesale telecommunications markets, with service providers offering greater value on contracts with longer terms. Second, the added certainty of the CPI/2 Price Control will facilitate Access Seekers making investments in product and application development that will, in turn, promote competition in the markets they serve by expanding the range of consumer choice and scope of competitive activity.

In parallel, the LTRCM will ensure that NBN Co's prices can, over time, recover no more than its prudently incurred costs (including a return on capital). This is consistent with the promotion of competition because NBN Co's prices will ultimately be set to recover its efficient costs of supply (but subject to the constraint of UNWP).

Due to NBN Co's mandate in respect of UNWP, which the SAU has been designed to support, there will be low barriers to service providers competing nationally, with particular benefits for competition for End Users served by the NBN Co's wireless and satellite networks.

NBN Co submits that the price-related terms and conditions in the SAU are likely to promote competition as compared to the counterfactual scenario. In the absence of the SAU, Access Seekers would not receive the level of upfront, regulatory certainty provided by the SAU nor in so definite a manner, about how NBN Co's pricing would evolve over time. The lack of certainty inherent in the counterfactual may affect Access Seekers' decisions to compete in relevant retail and wholesale markets (and if they do compete, how they compete), thereby negatively affecting competition.

Further, NBN Co has selected those non-price terms and conditions that constitute the key areas of focus for Access Seekers. In doing so, NBN Co has sought to provide certainty to Access Seekers on the key non-price terms and conditions by holding itself to a minimum set of baseline commitments while retaining a degree of flexibility in how those baseline commitments can be implemented within the WBA over time.

iii Non-price terms and conditions

The ACCC has previously noted that an important benchmark in assessing whether competition will be promoted is the consistency of the proposed terms of access with the principle of non-discriminatory access between downstream suppliers of a service.

NBN Co submits that in developing the non-price terms and condition in the SAU one of its key objectives has been facilitating non-discriminatory access. For example by entrenching terms and conditions in the SAU relating to non-discriminatory notifications relating to Major NBN upgrades and POI rollout progress, all Access Seekers will have access to important information the same time, this will promote competition by allowing them to compete on how effectively they utilise the information. Similarly, NBN Co's approach to credit management will be transparent and non-discriminatory while at the same time providing NBN Co with some flexibility to tailor the approach over time.

8.1.2 Any- to-any connectivity

The NBN Access Service is a Carriage Service that will be an input into to an end-to-end service and as such NBN Co submits that the terms and conditions of the SAU will promote the objective of any-to-any connectivity.

8.1.3 Economically efficient use and investment in infrastructure

A number of the price related terms and conditions in the SAU are included because they are reasonably necessary for the achievement of uniform national pricing. In any event, NBN Co submits that the price-related terms and conditions in the SAU will encourage the economically efficient use of and the economically efficient investment in infrastructure in a number of ways. These can be expressed in terms of the three standard components of efficiency, as follows.

Productive efficiency

First, the prudency commitments operating as part of the LTRCM will ensure that NBN Co has incentives to incur opex and capex in a manner that is consistent with achieving productive efficiency (thus minimising the costs associated with delivering the NBN Access Service).

Allocative efficiency

Second, NBN Co has adopted an overarching pricing strategy, reflected in the price-related terms and conditions, that balances the competing needs of encouraging and maintaining high rates of take-up of the NBN (through affordable AVC prices) with high rates of usage of the NBN (through affordable CVC prices). Encouraging high rates of take-up and usage, while recognising the need for long term cost recovery, is particularly important from an allocative efficiency perspective because the NBN is subject to significant economies of scale and scope (as discussed in section 6.1), willingness to pay for NBN services is expected to grow over time, and NBN Co will continue to face potential competition from some services delivered on other networks (such as 3G and 4G mobile) in respect of providing both voice and broadband services.

Third, the LTRCM will ensure that in the long term NBN Co's prices will be consistent (subject to UNWP) with recovering the efficient cost of supply. This will promote, consistent with achieving allocative efficiency, the efficient use of the NBN and complementary infrastructure (such as backhaul transmission) subject to the continued achievement of UNWP.

Dynamic efficiency

Fourth, the TLRCM will encourage efficient ongoing investment by NBN Co in order to maintain and extend the NBN because NBN Co will be provided with an appropriate opportunity to recover its costs of supply over time.

Fifth, the specific pricing commitments (the Price Controlled Offers and the CPI/2 Price Control) in the SAU, in combination with the LTRCM, will provide a level of certainty to access seekers that should enable them to develop and implement medium to long term business models that are predicated on NBN based supply. Such business models may provide an appropriate rationale, consistent with achieving dynamic efficiency, for a range of infrastructure investment: by the Access Seeker in order to provide an end-to-end service based on NBN access; by NBN Co in undertaking investment to support the new applications that Access Seekers may have factored into their business models; and by investors in complementary infrastructure (such as backhaul transmission).

Sixth, the customer engagement process and the PDF will ensure that NBN Co is well informed about Access Seekers' needs and views in regard to current use of the NBN and its future development. This will assist NBN Co in prioritising and directing its future investments in a manner consistent with achieving dynamic efficiency.

Separately, NBN Co would also highlight that the SAU incorporates a number of review mechanisms (such as the mid-term review of prudency commitments and the WACC) and proposes to confer a number of powers on the ACCC. These measures should ensure that the SAU's terms and conditions remain relevant and appropriate over the term of the SAU.

In relation to the specific matters that the ACCC must have regard to, under subsection 152AB(6) of the CCA, in determining the extent to which the terms and conditions of the SAU are likely to result in the achievement of the objective of encouraging the economically efficient use of, and economically efficient investment in, infrastructure, NBN Co submits the following. With regards to:

- whether it is, or likely to become, technically feasible for the services to be supplied and charged for – NBN Co is already supplying and billing for a number of products including: Fibre Product Release Broadband and Telephony released April 2011; and Satellite Product Release Broadband released July 2011. Furthermore, a number of service providers are already providing End Users with NBN-based services;
- the legitimate commercial interests of the supplier or suppliers of the services, including the ability of the supplier or suppliers to exploit economies of scale and scope – the LTRCM will provide NBN Co with an opportunity to recover its prudently incurred costs, and the overarching pricing strategy reflected in the price-related terms and conditions accounts for the economies of scale and scope associated with the NBN. This is discussed above in relation to both allocative and dynamic efficiency; and
- the incentives for investment in the infrastructure by which the services are supplied and any other infrastructure by which the services are, or are likely to become, capable of being supplied – as discussed above in relation to dynamic efficiency, the SAU will encourage efficient ongoing investment by NBN Co in order to maintain and extend the NBN.

NBN Co submits that the above considerations support the SAU achieving the objective of encouraging the economically efficient use of, and economically efficient investment in, infrastructure.

In the counterfactual scenario of having terms and conditions determined via a SFAA and access determinations, the economically efficient use of and investment in relevant infrastructure is likely to be encouraged to a lesser extent because both access seekers and investors in infrastructure that supports the NBN (such as competitive backhaul) would not receive as much certainty up front, nor in so definite a manner, as afforded under the SAU, about how NBN Co's pricing would evolve over time.

8.1.4 Conclusions on promotion of long-term interests of end-users

As outlined above, the service description and both the price and non-price terms and conditions of the SAU will promote the LTIE by promoting competition in relevant retail and wholesale markets, facilitating the objective of achieving any-to-any connectivity and encouraging the efficient investment in and use of infrastructure.

The counterfactual scenario of having terms and conditions determined via a SFAA and access determinations is likely to promote the LTIE to a lesser extent because it is unable to provide as much certainty up front, nor in so definite a manner, as is provided under the SAU. This lack of certainty inherent in the counterfactual implies adverse consequences for the objectives of promotion of competition and encouraging efficient use of and investment in infrastructure when compared to the likely outcomes under the SAU.

8.2 Legitimate business interests of service provider

NBN Co submits that that a 30 year undertaking will account for NBN Co's legitimate business interests by providing NBN Co with a degree of commercial flexibility, within clearly outlined constraints, to account for evolving technology, applications and demand and to achieve a reasonable return on its investment in the NBN.

The price related terms and conditions in the SAU are designed to be consistent with NBN Co's legitimate business interests in that they provide:

- the opportunity for NBN Co to recover its prudently costs over the long term – this is a result of the LTRCM, which incorporates the ICRA mechanism for carrying forward initially unrecovered costs for recovery in later years; and
- the limited pricing flexibility that NBN Co needs to have the opportunity to recover its costs having regard to the need to account for evolving technology, applications and demand over the 30 year term of the SAU – this is a result of the CPI/2 Price Control.

NBN Co has adopted a principles-based, product neutral and non-exhaustive approach to non-price terms and conditions in the SAU. The SAU does not exhaustively cover all non-price terms and conditions which will be included in the WBA, but it does cover those which NBN Co anticipates will be of key importance to its Customers. In determining which non-price terms and conditions to include, NBN Co has reflected the approach taken by the ACCC in developing the 2008 Model Non-price Terms and Conditions, which was to[114]:

> *focus on those terms and conditions of access that could be expected to have a material bearing on a service provider's business and hence the range, quality and price of services offered to end-users.*

NBN Co considers that this is consistent with the ACCC's view that this criterion requires an assessment of the broader commercial interests of the service provider in conducting its own business affairs. An access provider should not be unduly compromised in the conduct of its own legitimate business interests simply because it has an obligation to provide access to its service.[115]

The complementary SAU/WBA approach also provides NBN Co with the opportunity to operate its business with required flexibility to adapt to changes in the industry and market environment by evolving its business operations over the term of the SAU. NBN Co considers that locking-in a complete set of non-price terms and conditions for the necessary 30 year term of the SAU in an industry that is continually evolving is neither necessary nor desirable considering both NBN Co's legitimate commercial interests and those of Access Seekers. Although the non-price terms and conditions in the WBA may change over time, they must remain consistent with the principles set out in the SAU while the SAU remains in force.

To this end, NBN Co submits that its approach of prescribing a set of principles, which provide a framework for, and requirements and limitations on, the non-price terms and conditions which may be set out in the WBA provides for a reasonable balance between the legitimate commercial interests of NBN Co and Access Seekers.

8.3 The interests of persons who have rights to use the declared service

The interests of persons who have rights to use the declared service include Access Seekers being able to compete for End Users on the basis of their relative merits. That is, terms and conditions that favour one or more service provider over others and thereby distort the competitive process may harm the interests of Access Seekers or potential Access Seekers.[116]

NBN Co submits that its approach to defining the service description (specifically a separate Product Components approach) will promote the interests of all Access Seekers by providing them with flexibility and control over how they configure services for their End Users, thereby allowing them to compete based on their relative competitive merits.

NBN Co submits that the price related terms and conditions of the SAU promote the interests of Access Seekers by providing certainty as to: the starting prices for a key set of basic services (the Price Controlled Offers); the maximum increases in NBN Co's prices (the CPI/2 Price Control); and the long term revenue cap that will constrain, in any event, NBN Co prices to recover no more than NBN Co's prudently incurred costs (the LTRCM).

[114] ACCC Final Determination – Model Non-price Terms and Conditions, November 2008, page 4
[115] Ibid, p.38
[116] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.38

In relation to non-price related terms and conditions, the SAU also promotes the interests of Access Seekers, including by:

- being expressed in a non-discriminatory manner;
- providing for a robust, speedy, open and non-discriminatory process for the resolution of disputes that might arise between NBN Co and its Customers, as well as a defined process for implementing disputed outcomes;
- ensuring effective, transparent and non-discriminatory notification is provided and consultation is undertaken with Access Seekers where a particular event affects an Access Seeker's business interests. For example NBN Co has committed to:
  - publishing annual, quarterly and monthly rollout plans describing where, when and to how many premises NBN Co plans to roll out the NBN. This will equip Access Seekers, in a transparent and non-discriminatory way, with the ability to develop product and marketing plans and strategies;
  - notifying and consulting with Customers in relation to major NBN upgrades; and
  - providing timely information about POI rollout progress.

8.4 The direct costs of providing access to the declared service

As a wholesale only provider specifically established by the Government to provide layer 2 bitstream services, NBN Co submits that its direct costs of providing access to the NBN Access Service comprise all of the costs captured by the LTRCM over the course of the SAU (rather than just those in any one year).

The LTRCM:

- recognises operating and capital costs on an actual basis, subject to meeting certain prudency requirements;
- incorporates both network costs, relating to the construction, operation and maintenance of the fibre, wireless and satellite networks, and non-network costs, relating to activities such as product development and sales, information technology, finance and administration; and
- provides a mechanism (the ICRA) for carrying forward any initially unrecovered costs for recovery in later years.

8.5 Safety and reliability

NBN Co submits that it has designed its price-related terms and conditions (discussed in section 6) to ensure that it has the opportunity to recover its prudently incurred costs, inclusive of a regulatory cost of capital, enabling NBN Co to maintain the safety and reliability of the operation of its network.

NBN Co submits that the non-price terms and conditions of its SAU, including the service description are consistent with the operational and technical requirements necessary for the safe and reliable and do not form barriers to effective access to the NBN.

8.6 Economically efficient operation of the network

NBN Co submits that the terms and conditions set out in the SAU will lead to the economically efficient operation of the NBN and also of networks operated by other infrastructure owners (such as backhaul providers). The reasons for this are the same as those discussed in section 9.1.3 with regards to encouraging economically efficient investment in and use of network infrastructure.

8.7 Other consideration relevant to reasonableness

Subsection 152AH(2) of the CCA states that the consideration of reasonableness is not limited to the factors outlined in subsection 152AH(1) (discussed in the preceding sections).

Accordingly, NBN Co submits that the following matters are relevant considerations the ACCC should take into account when determining whether the terms and conditions of the SAU are reasonable:

8.7.1 Statement of expectations

In the Statement of Expectations the Government has provided two directions to NBN Co that are relevant considerations for assessing the reasonableness of the SAU.

- In relation to coverage, speed and technology mix:

  The Government expects that NBN Co will design, build and operate a new NBN to provide access to high speed broadband to all Australian premises. The Government's objective for NBN Co is to connect 93 per cent of Australian homes, schools and businesses with fibre-to-the-premises technology providing broadband speeds of up to 100 megabits per second, with a minimum fibre coverage obligation of 90 per cent of Australian premises.

  All remaining premises will be served by a combination of next generation fixed wireless and satellite technologies providing peak speeds of at least 12 megabits per second.[117]

- In relation to UNWP:

  charge Access Seekers uniformly for services across its network for all technologies and for the basic service offering[118]*;*

[117] Statement of Expectations from shareholder Ministers, 17 December 2010, p.1.
[118] Statement of Expectations from shareholder Ministers, 17 December 2010, p.7.

8.7.2 Cost control and prudency measures

Separate to any prudency commitments made under the SAU, NBN Co is subject to a range of existing legislative, Parliamentary and regulatory controls that are already in place and which apply to NBN Co (including as a GBE). These are more fully described in section A.3 in Appendix A.

As a result of these pre-existing cost control and prudency measures, NBN Co is already subject to intense scrutiny of its opex and capex decision making. This means that the prudency commitments in the SAU, while effective, are supplemented (at least so long as NBN Co remains Government owned) by a raft of other measures.

NBN Co submits that these cost control and prudency measures are relevant considerations for assessing the reasonableness of the SAU and notes that, looking ahead to a time when NBN Co may be privatised, the prudency commitments will be subject to a review in the lead up to privatisation, or around the middle of the SAU term.

8.8 Consideration of terms reasonably necessary to achieve uniform national pricing

NBN Co has identified a number of price-related terms and conditions in the SAU that are reasonably necessary for achieving uniform national pricing – see section 6.7. In accordance with subsection 152CBD(5A) of the CCA, NBN Co submits that the ACCC cannot reject the SAU for a reason related to these terms and conditions of the SAU (because they are reasonably necessary to achieve uniform national pricing).

8.9 Terms and conditions of the SAU are reasonable

The ACCC has previously outlined that it is the terms and conditions of the SAU as whole that must be taken into account in assessing reasonableness of the SAU[119]. In the FANOC Decision, the ACCC's approach to assessing reasonableness took into account not only the effect of individual terms and conditions but also the way in which the terms and conditions interact with each other and the effect they would have or are likely to have on relevant interests and matters.[120]

Taking into account all of the relevant considerations as discussed above, including the specific provisions in the CCA regarding uniform national pricing, NBN Co submits that the terms and conditions of the SAU are reasonable. As discussed in the above sections, the terms and conditions of the SAU promote the LTIE, by promoting competition, any-to-any connectivity and encourage efficient investment in and use of infrastructure as compared to the counterfactual of having terms of access set out via an access determination and/or SFAAs. NBN Co submits that the more definitive regulatory certainty provided by a SAU

[119] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.31

[120] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.135

strikes an appropriate balance between the legitimate interests of NBN Co and Access Seekers using the NBN Access Service.

Accordingly, NBN Co submits that the ACCC should be satisfied that the terms and conditions of the SAU reasonable.

9 Compliance with legislative requirements

Key points

- The SAU complies with all relevant legislative requirements – it includes:
  - terms and conditions relating to compliance with Category B SAOs, expiry of the SAU and extension of the term of the SAU;
  - terms and conditions that are consistent with category B SAOs and are reasonable; and
  - specified conduct in relation to listed activities that will promote the LTIE.

9.1 Summary

For completeness, NBN Co has prepared the following checklist in respect of compliance with the specific legislative requirements applying to a SAU. Further discussion in relation to consistency with the Category B SAOs and specified conduct in relation to listed activities is provided in the following sections.

Compliance requirement	**Legislative Provision**	**Clause in the SAU complying with requirement**	**Discussion in submission**
Undertakes to comply with Category B SAOs	Subsection 152CBA(3A) requires that the SAU must state that, in the event NBN Co supplies or becomes capable of supplying the declared service, NBN Co: (a) agrees to be bound by the obligations referred to in section 152AXB, to the extent that those obligations would apply to NBN Co in relation to the service if the service were treated as a declared service; and (b) undertakes to comply with the terms and conditions specified in the undertaking in relation to the obligations referred to in section 152AXB.	See Clauses 1.1 and 1.2 of the SAU.	See section 9.2
Expiry of SAU	Subsection 152CBA(6) requires that a SAU contains an expiry time.	Clause 6.2 of the SAU notes that the SAU expires on 30 June 2040.	See section 7.1.1

Compliance requirement	Legislative Provision	Clause in the SAU complying with requirement	Discussion in submission
Extension of term of the SAU	Subsection 152CBA(9) states that a SAU may provide for the submitter of a SAU to extend or further the expiry of a SAU so long as: (a) the extension or further extension is approved by the ACCC; and (b) the undertaking sets out criteria that are to be applied by the ACCC in deciding whether to approve the extension or further extension.	See Clause 6.5 of the SAU	See section 7.1.1
Consistency with Category B SAOs	Subparagraph 152CBD(2)(b)(i) requires the ACCC to be satisfied that the terms and conditions set out in the SAU would be consistent with Category B SAOs, to the extent that those obligations would apply to a NBN corporation in relation to the service, as if the service were treated as an active declared service under subsections 152AL(8A), 152AL(8D) or 152AL(8E).	The terms and conditions in the SAU are consistent with Category B SAOs.	The ACCC should be satisfied that the terms and conditions in the SAU are consistent with Category B SAOs. See Section 9.2
Reasonableness of terms and conditions	Under subparagraph 152CBD(2)(b)(ii), the ACCC cannot accept a SAU submitted by a NBN corporation unless it is satisfied that the terms and conditions specified in the SAU are reasonable.	The terms and conditions in the SAU are reasonable.	The ACCC should be satisfied that the terms and conditions in the SAU are reasonable (in accordance with the statutory criteria set out in section 152AH of the CCA). See Section 8.
Specified Conduct in relation to listed activities	Paragraph 152CBD(2)(cb) of the CCA, the ACCC cannot accept the SAU unless it is satisfied that the conduct specified in relation to listed activities (subsection 152CBA(3C) will promote the LTIE in markets for listed services.	See Schedule 6 of the SAU	The ACCC should be satisfied that specified conduct relating to a listed activities in Schedule 6 of the SAU promote the LTIE in listed markets. See Section 9.3.

In its consideration of the SAU, subsection 152CBD(5A) of the CCA prevents the ACCC from rejecting a SAU for a reason that concerns price-related terms and conditions that are reasonably necessary to achieve uniform national pricing of eligible services supplied by NBN Co. Such a price-related term or condition would be excluded from the ACCC's consideration of whether the terms and conditions of the SAU are consistent with Category B SAOs and are reasonable.

9.2 Consistency with the Category B SAOs

In accordance with paragraph 152CBA(3A)(a) of the CCA, clause 1.1 of the SAU states that, in the event that NBN Co supplies, or becomes capable of supplying, the NBN Access Service (whether to itself or to other person), NBN Co agrees to be bound by the Category B SAOs referred to in section 152AXB of the CCA, to the extent those obligations would apply to NBN Co in relation to the NBN Access Service if the NBN Access Service was treated as a declared service.

In complying with paragraph 152CBA(3A)(b) of the CCA, clause 1.2 of the SAU states that in the event that NBN Co supplies, or becomes capable of supplying, the NBN Access Service (whether to itself or to other persons), NBN Co undertakes to comply with the terms and conditions specified in the SAU in relation to the Category B SAOs referred to in section 152AXB of the CCA.

Subparagraph 152CBD(2)(b)(ii) of the CCA states that the ACCC must not accept a SAU from NBN Co unless it is satisfied that the terms and conditions of the SAU are consistent with applicable Category B SAOs set out in section 152AXB of the CCA. The Category B SAOs are discussed in section 3.1.

In the absence of a specified approach to assessing consistency with the SAOs, the ACCC has noted that it finds it useful to adopt an approach where it:

- identifies those SAOs that would be applicable to a particular access provider; and
- assesses whether the terms and conditions proposed by the SAU would be consistent with the applicable SAOs.

In its final decision on Foxtel's SAU, the ACCC held that 'consistency' with regards to SAOs does not appear to demand complete correspondence with the thing in question, but rather it's a level of conformity.[121] The ACCC has also previously stated that the assessment of consistency with SAOs may involve a consideration of whether the terms and conditions of an undertaking 'raise any inconsistencies with the SAOs".[122] Where the terms and conditions

[121] ACCC, *Final Decision: Assessment of Foxtel's Special Access Undertaking in relation to the Digital Set Top Unit Service, March 2007, p.134*

[122] ACCC, *Assessment of FANOC's Special Access Undertaking in relation to the Broadband Access Service – Draft Decision,* December 2007, p.144

are found not to be inconsistent with SAOs, the ACCC is likely to regard the terms and conditions of the SAU as being consistent with applicable SAOs.[123]

Further, the ACCC also stated that undertakings are likely to intrude upon or limit, at least to some extent, the obligation to supply that would otherwise be established by the SAU. The ACCC's task is to assess the extent to which the terms and conditions limit the SAOs in order to determine whether those terms and conditions are so limiting as to be not consistent with the obligations sets out in the SAOs. That is the ACCC recognises this assessment as a question of degree.[124]

NBN Co submits that in accordance with subparagraph 152CBD(2)(b)(ii), the ACCC should regard the terms and conditions of the SAU as being consistent with applicable SAOs because:

- the terms and conditions of the SAU are 'consistent' with Category B SAOs in that they conform to the requirements on NBN Co to comply with obligations applicable under section 152AXB, by providing Access Seekers with supply of the access service to be declared – the NBN Access Service, and by permitting interconnection with NBN Co's facilities at POIs ascertained in accordance with the SAU;
- there are no terms and conditions in the SAU that are inconsistent with applicable SAOs and as such the terms and conditions of the SAU are likely to be consistent with applicable SAOs; and
- whilst there may be terms and conditions in the SAU that may place conditions upon the manner in which Category B SAOs will be complied with, they do not amount to limits on the consistency with applicable SAOs.

9.3 Specified conduct

As outlined in section 3.5, in accordance with subsection 152CBA(3C) of the CCA, the SAU may state that NBN Co will engage in specified conduct in relation to a number of related activities. If such conduct is specified in the SAU, then in accordance with paragraph 152CBD(2)(cb) of the CCA, the ACCC cannot accept the SAU unless it is satisfied that the conduct specified will promote the LTIE of carriage services or of services supplied by means of carriage services.

Schedule 6 of the SAU, Product Development and Withdrawal (including Appendix 1 relating to PDF Processes), specifies conduct NBN Co will undertake in developing products including conduct relating to developing new eligible services, enhancing declared services and giving information in relation to those activities. For example Schedule 6 specifies that NBN Co will produce and publish up-to-date roadmaps of products which are under development and also consult and communicate with Customers about the development of new products via

[123] ACCC, *Final Decision: Hutchison's undertakings with respect to the supply of its Mobile Terminating Access Service (MTAS),* June 2006, p.95

[124] ACCC, *Final Decision: Assessment of Foxtel's Special Access Undertaking in relation to the Digital Set Top Unit Service, March 2007, p.136*

the PDF Processes. NBN Co considers that this conduct may fall within the scope of subsection 152CBA(3C) described above.

NBN Co submits that specified conduct in Schedule 6 of the SAU will promote the LTIE by:

- promoting competition by providing all Access Seekers with non-discriminatory and transparent access to information about product development. This will provide all Access Seekers with the ability to compete on how they utilise such information, for example competition through product innovation.
- promoting the objective of any-to-any connectivity by facilitating, to the extent that the specified conduct is relevant, the development of products that will be used as wholesale inputs for end-to-end services; and
- Encouraging efficient use of and investment in infrastructure by providing Access Seekers with:
  - an opportunity to participate in a structured product development process so as to obtain certainty around future investment decisions; and
  - timely and sufficient information relating to product development, so as to make informed decisions about Access Seekers' business models and products, leading to efficient investment by both NBN and Access Seekers in the development and application of new technology;

Appendices

A. Prudency commitments

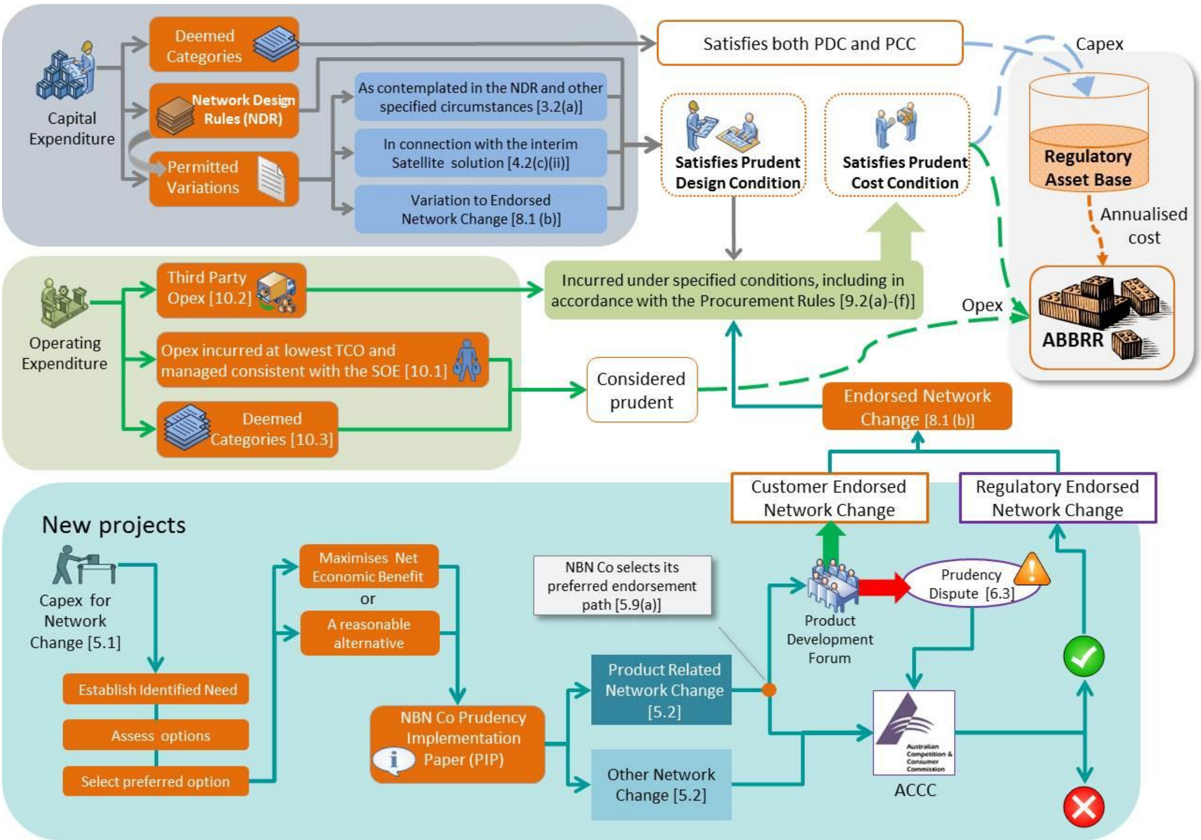
Key points

- NBN Co will establish a RAB, and regulatory revenue requirement based on its actual costs, rather than forecasts or economic models. This will establish a long term revenue cap on its operations, as described in Schedule 7 of the SAU.
- NBN Co provides commitments in the SAU that ensure that the costs it incurs, and the processes it uses to incur those costs are prudent – that is, the costs and processes are necessary, effective, efficient and aligned with NBN Co's and its Customers' interests. NBN Co has drawn on established approaches to prudency in other regulated industries to develop these commitments and adapted them to reflect the objectives set for NBN Co.
- In relation to capex, NBN Co must satisfy the Prudent Cost and Prudent Design Conditions. In summary, this means that NBN Co commits to only recover costs which are incurred in a manner consistent with certain prudency measures and constraints, including:
  - that NBN Co designs, constructs and engineers its networks in accordance with the Network Design Rules, which will be considered by the ACCC as part of its consideration of the SAU;
  - processes in relation to the prudency of the design of future investment in, and changes to, the NBN over the term of the SAU, including engagement with NBN Co's Customers on future product development; and
  - NBN Co's commitment to procurement processes, including competitive tendering and other forms of procurement practices.
- Recognising that NBN Co has been directed by Government to undertake delivery of certain capabilities in specific timeframes, and needs to build a network from scratch, NBN Co has identified a number of categories of capex which should be deemed prudent, and included in the RAB.
- In relation to opex, NBN Co commits to certain key rules applicable to incurring opex, including subjecting itself to a requirement that third party opex will be subject to the same competitive tendering and procurement processes that are applicable to capex.
- These measures are in addition to the significant cost control, reporting and transparency measures which apply to NBN Co as a GBE, as well as the Government, Parliamentary and other requirements which NBN Co is subject to.

This section describes the key features of the prudency commitments made by NBN Co in the SAU, as well as a number of other cost controls and transparency measures that NBN Co is subject to as a Government Business enterprise, which also ensure that it will incur costs prudently.

The following diagram shows the overall manner in which the prudency model described in the SAU operates. The key elements of this diagram are explained in sections A.1 and A.2 below.

Figure A.1: Overview of the prudency model



A.1 Prudency of capital expenditure

For capex to be considered to be prudently incurred by NBN Co and therefore able to be included in the RAB, NBN Co must satisfy the following two conditions (subject to certain exceptions discussed below):

- the Prudent Design Condition, which sets out the conditions NBN Co must satisfy in relation to the prudent design of the existing network design and future Network Changes; and
- the Prudent Cost Condition, which sets out the conditions NBN Co must satisfy when incurring capex, principally in the form of compliance with procurement rules.

It should be noted that NBN Co's prudency approach does not rely on ex ante regulatory approval of capex forecasts or any ex post reviews of capex. NBN Co believes that compliance with the Prudent Design Condition and the Prudent Cost Condition places appropriate controls on NBN Co's capex. Further, NBN Co is subject to significant transparency requirements through its status as a GBE and other measures described in section A.3 below.

A.1.1 Initial network design and deemed categories of expenditure

i. Initial network design

NBN Co has set out the detailed network design requirements in the NDRs, which have been provided to the ACCC with the SAU.

The NDRs are required to achieve the Initial Design Scope set out in clause 3.1(a) of Schedule 8 of the SAU. The Initial Design Scope is derived from the Statement of Expectations and sets the 'baseline' which NBN Co is required to achieve.

NBN Co satisfies the Prudent Design Condition in respect of capex incurred in connection with the design, engineering and construction of the NBN by complying with the NDRs (subject to Permitted Variations described below). NBN Co is still then required to satisfy the Prudent Cost Condition in relation to such capex.

ii. Variations from initial network design

NBN Co has sought to provide a reasonable degree of certainty by setting out its design in the NDRs. However, NBN Co will also need an appropriate degree of flexibility to improve and alter the design of the NBN as the roll-out occurs.

NBN Co has preserved a limited and appropriate degree of flexibility through the NDRs themselves. NBN Co also provides some limited variance from the NDRs through Permitted Variations as expressly described in clause 3.2 of the Schedule 8 of the SAU. Some of these Permitted Variations relate to improvements to the design which effectively improve the design above the baseline established by the NDRs. For example, a design change which improves performance but results in the same or lower Total Cost of Ownership is a Permitted Variation.

Other categories of Permitted Variations include where changes to the design are necessary to establish and maintain the quality, reliability and security of the Relevant Assets. Also, changes required in connection with a Force Majeure event are excluded. These categories are necessary to afford NBN Co the necessary degree of flexibility to maintain a desirable 'baseline' design.

NBN Co has also provided for a Permitted Variation which is specifically required by law or by the Shareholder Ministers. NBN Co regards this category as relatively limited because this Permitted Variation would only apply where NBN Co is specifically required to implement a particular design change as required by law or by the Shareholder Ministers. A general direction from the Shareholder Ministers requiring a change to the design (e.g. a change in the overall parameters which NBN Co is required to meet) would not fall within the Permitted Variation exception and NBN Co would be required to comply with the Prudent

Design Condition in relation to the achievement of the general direction from the Shareholder Ministers in these circumstances (i.e. through the change design process described in section A1.1(v) below).

It should also be noted that the design, engineering and construction of any Permitted Variation is subject to the objective of being achieved for the lowest Total Cost of Ownership. This is intended to prevent unnecessary costs being incurred when Permitted Variations are performed.

iii. Deemed categories of capital expenditure

NBN Co considers that some capex should be deemed to be prudently incurred (i.e. deemed to satisfy both the Prudent Design Condition and the Prudent Cost Condition). This reflects the fact that NBN Co has been instructed to provide certain capabilities in particular timeframes, and where it is constructing a network (and business) from scratch. The categories of deemed capex relate primarily to initial or interim arrangements that NBN Co has had to enter into, as well as the arrangements that it has negotiated with Telstra and Optus.

The following categories of deemed capex apply:

- **Interim satellite solution.** NBN Co is required to deliver this solution under the Statement of Expectations as follows (p.4):

  In the interim, the Government expects NBN Co to explore options to bring forward a suitable satellite solution to ensure the availability of improved satellite broadband services for regional Australia, eventually replacing the existing Australian Government Australian Broadband Guarantee program.

  NBN Co has entered into arms' length transactions with Optus and IP Star in relation to the supply of interim satellite services.

- **Interim transit arrangements.** Interim transit arrangements have been put in place by NBN Co to enable the supply of NBN services to Temporary POIs, modularised FANS and associated backhaul transmission. These interim arrangements were put in place to facilitate the first release trial services on mainland Australia as well as to provide connectivity to Greenfields developments.

- **Telstra and Optus arrangements.** The Telstra and Optus arrangements have been negotiated over many months on an arms' length basis. As described in NBN Co's submission to the ACCC in relation to Telstra's Structural Separation Undertaking[125], the Definitive Agreements with Telstra would enable NBN Co to migrate customers to the NBN faster, support the delivery of UNWP, reduce NBN Co's cost and time to

[125] NBN Co's submission to the ACCC in relation to section 577BA of the Telecommunications Act 1997, provided in August 2011.Available at: http://www.accc.gov.au/content/item.phtml?itemId=1004007&nodeId=5248e382a4028e38dc7cb3cfbcbfe670&fn=NBN%20Co%20public%20submission%20in%20relation%20to%20s.577BA%20of%20the%20Telecommunications%20Act%201997.pdf

deploy its network, reduce cost uncertainty and avoid inefficient and socially wasteful duplication of infrastructure. NBN Co anticipates that a number of these benefits would also result from its arrangements with Optus, namely faster migration of customers to the NBN and facilitation of UNWP.

- **Tasmania Tri-Area expenditure.** NBN Co has incurred capex on building the NBN in three areas in Tasmania which serve Smithton, Scottsdale and Midway Point. This expenditure has been incurred on a historic basis, primarily to trial service delivery and deployment processes for future network deployment.

- **First Release Trial Sites.** NBN Co has incurred capex on building the NBN in five areas in mainland Australia (parts of Brunswick (Vic), Townsville (Qld), Armidale (NSW), Minnamurra and Kiama Downs (NSW) and Willunga (SA)). This expenditure has been incurred in order to trial deployment processes in different geographic conditions to develop and refine solutions for future network deployment.

- **Third Party Funded Changes.** In some circumstances, third parties (customers, developers, local governments etc) may be prepared to fund extensions to the NBN beyond the footprint originally designed by NBN Co. NBN Co notes that a similar arrangement is in place in relation to the ARTC Hunter Valley Access Undertaking[126].

- **Minor Variations.** In addition to the Permitted Variations described above, minor variations with a cost of less than $100 million (indexed to CPI) are to be considered to have been prudently incurred. A single minor variation of, say, $50 million, constitutes 0.14% of the total estimated capex of $35.9 billion. NBN Co considers any such variations to be within a reasonable margin in the context of the overall capex to be incurred by NBN Co on the rollout of the NBN.

- **Urgent and unforeseen variations, changes and enhancements.** The SAU also provides that capex on certain urgent and unforeseen changes should be considered to be prudently incurred. In a project of the size of the NBN, which is constructing an entirely new network, urgent and unforeseen changes may be required and accordingly some flexibility should be afforded to NBN Co in such circumstances. It is important to note that expenditure within this category must satisfy certain stringent conditions specified in clause 4.10 of Schedule 8 of the SAU before it is considered to be an urgent and unforeseen variation, change or enhancement. The event or circumstances giving rise to the variation, change or enhancement cannot have been reasonably foreseeable and a failure to address the change has to be likely to materially adversely affect the safe and reliable operation of the NBN or products supplied over the NBN. NBN Co notes that a similar exception applies under the regulatory investment test for electricity transmission businesses in

[126] Clause 10 of the 2011 ARTC HVAU, which covers User Funded Options. Located at: http://www.accc.gov.au/content/item.phtml?itemId=994059&nodeId=8618718497a3928a40b2787119876b90&fn=ARTC%202011%20Hunter%20Valley%20Access%20Undertaking%20signed.pdf

Australia.[127] Additional conditions justifying the use of this deemed category include swap-out of assets and re-routing of lines or facilities.

iv. Initial Costs

Clause 1 of Schedule 7 operates to include all initial costs and revenues earned between the Cost Commencement Date and the SAU Commencement Date within the RAB and ICRA. This ensures that the RAB and ICRA reflect the totality of NBN Co's operations, consistent with the overall approach of operating a RAB that reflects NBN Co's actual prudently incurred costs. Given the relatively minor level of expenditure in early years of NBN Co's operations, and the fact that NBN Co has been subject to the significant transparency and cost control measures described in section A.3 of this Appendix, NBN Co considers that this is an appropriate approach to dealing with these initial costs and revenues.

v. Network changes

A central aspect of the SAU relates to the manner in which NBN Co is to incur capex on future Network Changes. A Network Change relates to a variation, change or enhancement to the design, engineering or construction of the NBN that falls outside the scope of the NDRs and does not fall within any of the categories described in section A.1.1(iii) above.

NBN Co recognises that over the 30 year term of the SAU, Network Changes are likely to be required as technology develops. Under the SAU, NBN Co has put in place measures to ensure the prudency of capex in connection with future Network Changes.

In that regard, Network Changes that require variations to the NDR that are not Permitted Variations or fall within a Deemed Category of expenditure, are subject to a process involving external endorsement – either through the PDF or the ACCC.

Under the prudency regime for Network Changes, NBN Co will prepare an assessment of each valid Network Change option to implement the desired change and the associated costs of each solution. For the purposes of this assessment, there are two categories of Network Changes:

- **Product-Related Network Change** – which relates to, or impacts upon, NBN Co's Product Components or associated Product Features; and
- **Other Network Change** – which relates to any Network Change that is not a Product-Related Network Change.

In its assessment of Network Change options, NBN Co will undertake its analysis in accordance with the factors outlined in clause 5.5(b) of Schedule 8 of the SAU, as summarised in the table below:

[127] AER, Regulatory investment test for transmission application guidelines, Final, June 2010, page 6. Available at, <http://www.aer.gov.au/content/item.phtml?itemId=737903&nodeId=9b856178bc08a9524113e75f129901fe&fn=Final%20RIT-T%20application%20guidelines%20(June%202010).pdf>

Table A.1: NBN Co's assessment of Network Change Options

Factor	Network Changes
Identify need	Identified Need is the reason why NBN Co has proposed the Network Change (e.g. to deliver higher bandwidth services in response to Customer demand.
Assessment of the Network Change Options	A Network Change Option: ▪ must meet the an Identified Need; ▪ must be economically and technically feasible; ▪ must be considered to be a viable option having regard to specified factors, such as the Total Cost of Ownership, the economic life of assets and resource requirements; and ▪ in respect of Product-Related Network Changes, can be implemented in sufficient time to meet the timelines identified by the PDF.
Selection of network Change Option	When selecting its preferred Network Change Option, NBN Co: ▪ may select the option that it considers will maximise the Net Economic Benefit were it to take place as compared to it not taking place; ▪ may select an alternative option which it considers is reasonable, provided that NBN Co provides an assessment of the material difference between this option and the one that maximises Net Economic Benefit and the reasons for that assessment.
Identification of options that maximises Net Economic Benefit	For each Network Change Option, NBN Co must: ▪ consider and identify market benefits that could be delivered by each option, such as the likely effect on demand, price effects, cost effects and competition benefits; ▪ quantify, to the extent possible, the classes of market benefits which are material; ▪ consider and estimate specified classes of costs associated with each option, such as price and cost effects; ▪ identify the methods used to estimating the magnitude of different benefits and costs; ▪ identify the appropriate method and values for specific inputs for determining the discount rate or rates to be applied; ▪ include a sensitivity analysis having regard to risk and certainty; and ▪ include an assessment of reasonable scenarios of future supply and demand in situations with and without each Network Change option.

vi. The regulatory investment test for electricity transmission

The key elements of the above process are similar to the 'regulatory investment test' that applies to electricity transmission network service providers (TNSPs) under Chapter 5 of the National Electricity Rules.

Under this test, the AER has interpreted an identified need to be a reasonably low threshold, which can be satisfied:[128]

> *if the TNSP reasonably considers that the option would, if commissioned within a specified time, be highly likely to meet one or more identified needs.*

Further, the test of whether an option is 'commercially and technically feasible' can be satisfied:

> *if a reasonable and objective operator, acting rationally in accordance with the requirements of the [regulatory investment test], would be prepared to develop or provide the option in isolation of any substitute options.*[129]

And:

> *if the TNSP reasonably considers that there is a high likelihood that, if developed, the option will provide the services that it is assumed (or claimed on behalf of its proponent) to be able to provide for the purposes of the assessment of that option under the [regulatory investment test], while complying with all mandatory requirements in relevant laws, regulations and administrative requirements.*[130]

The SAU provides that NBN Co may select the Network Change Option:

- that NBN Co considers is most likely to maximise the Net Economic Benefit; or
- an alternative option that is reasonable, provided that NBN Co identifies the material differences between the option that maximises the Net Economic Benefit and the alternative option and the reasons for choosing an alternative Network Change option.

vii. Net Economic Benefit Test

The Net Economic Benefit test proposed by NBN Co is an economic cost benefit analysis which is used to assess and rank different network change options.

The SAU provides for NBN Co to assess the economic efficiency of proposed network change options. The Net Economic Benefit test is intended to promote efficient investment in network infrastructure and ensure greater consistency, transparency and predictability in NBN Co's investment decision making.

---

[128] AER, *Regulatory investment test for transmission application guidelines, Final*, June 2010, pp.9- 10.
[129] AER, *Regulatory investment test for transmission application guidelines, Final*, June 2010, p. 10.
[130] AER, *Regulatory investment test for transmission application guidelines, Final,* June 2010, p. 10.

The test provides for the Net Economic Benefit to be determined, in respect of each network change option, by reference to the market benefits associated with that option less the costs associated with that option.

viii. Prudency Implementation Paper

On completion of its initial assessment as outlined above, NBN Co must prepare a document that summarises the options available for the Network Change and NBN Co's preferred Network Change option. This Prudency Implementation Paper must also include a summary of the assessments undertaken by NBN Co and the estimated capex and opex to be incurred in respect of each option.

In the event that NBN Co's preferred Network Change option does not maximise the Net Economic Benefit, the Prudency Implementation Paper must also include NBN Co's assessment of any material difference between its preferred option and the option that does maximise the Net Economic Benefit and the reasons for selecting that alternative option.

As described in clause 5.8 of Schedule 8 of the SAU, NBN Co's Prudency Implementation Paper must also include:

- in the case of a Product-Related Network Change;
  - information required for Customers, when NBN Co is seeking endorsement of its preferred option through the PDF Processes; and
  - a high level summary of the required changes to the NDRs; and
- in the case of an Other Network Change;
  - the detailed changes required to the NDRs in order to implement NBN Co's preferred option; and
  - a proposed timetable for the design, engineering and construction of NBN Co's preferred option.

The Prudency Implementation Paper is the vehicle NBN Co will use to gain external endorsement for NBN Co's preferred Network Change option. In relation to a Product-Related Network Change, there are two mechanisms which NBN Co may choose between to gain endorsement of its preferred option.

- Customer engagement and endorsement; or
- Regulatory endorsement by the ACCC.

For Other Network Change options, endorsement can only be achieved through regulatory endorsement by the ACCC.

ix. Customer endorsement processes

NBN Co will invite Customers to make submissions on the Prudency Implementation Paper for Product-Related Network Changes in the event that NBN Co wishes to seek Customer endorsement for that network change. In addition, NBN Co may consult with Customers through any other means as contemplated by the Product Development Forum Processes.

NBN Co must make such amendments to the Prudency Implementation Paper as it considers reasonable, taking reasonable account of all submissions and representations. Upon completion of the consultation period, NBN Co will publish an updated Prudency Implementation Paper in respect of its preferred option and notify Customers of the period within which objections can be lodged with NBN Co (refer to section A.1.1(xi) below).

This customer engagement model involves a period of consultation with Customers in relation to network investments which aim to deliver benefits to Customers in the form of new or enhanced NBN products. Customer engagement models are being used increasingly in regulated sectors as an effective mechanism to seek approval of capital expenditure by infrastructure owners for new capital investments (see Appendix B).

The customer engagement model allows market participants to make optimal decisions. The model provides superior benefits to Customers over inappropriately targeted regulation and is generally preferred by those who participate in the process (including regulatory agencies).

While there are some potential shortcomings of the model, it is better, in practice, than competing models that place an over-reliance on a regulator, placing burdens on it to make decisions without the benefit of market participants' information. In the customer engagement model, the regulator acts not primarily as a decision maker, but as a facilitator assisting market participants to achieve a result that is acceptable to each of them and in the public interest.

x. Prudency Disputes

The SAU includes a dispute resolution process in the event that Customers do not endorse NBN Co's preferred Network Change Option (a Prudency Dispute).

Under this regime, if one or more Customers raise an objection to NBN Co's preferred Network Change option and NBN Co is satisfied that the option is Prudent having regard to the criteria in clause 5.6 of Schedule 8 of the SAU, and NBN Co wishes to proceed with the preferred network change option, then NBN Co must, within 60 business days, submit the objection with the ACCC.

Once a Prudency Dispute is on foot, the decision must be awarded within 50 business days following commencement of the dispute.

xi. Regulatory Endorsement Process

As an alternative to the customer engagement process, NBN Co may choose to directly seek the endorsement of the ACCC for its preferred option in relation to a Product-Related Network Change option, while an Other Network Change option (i.e. a change that is not product related and therefore does not have a Customer impact) can only be endorsed by the ACCC. Each of these changes is called an ACCC Examinable Network Change.

In exercising its rights to use the regulatory endorsement process, NBN Co must submit to the ACCC the Prudency Implementation Paper associated with the option.

In determining whether to endorse NBN Co's preferred network change option, the ACCC may conduct public consultations, seek information from the industry or have regard to previous submissions from relevant industry participants. The ACCC's deliberations must be concluded within 50 business days from the date of receipt of the Prudency Implementation Paper, unless a further 20 day extension has been sought by the ACCC.

The ACCC must accept NBN Co's preferred network change option if that option maximises the Net Economic Benefit, unless the ACCC reasonably considers that an alternative network change option (whether considered by NBN Co or not, including no change) would maximise the Net Economic Benefit and those benefits materially exceed the Net Economic Benefit of NBN Co's preferred option. However, if NBN Co has not chosen the option that maximises the Net Economic Benefit, a different test applies. The alternative test provides for the ACCC to only endorse the network change option if:

- the ACCC Examinable Network Change meets the Identified Need;
- there is a greater economic benefit associated with the Network Change Option chosen by NBN Co for the ACCC Examinable Network Change compared with the situation where no option is implemented; and
- the design scope of the ACCC Examinable Network Change is not materially different from that which a prudent operator in NBN Co's position would consider to be reasonable.

If NBN Co is successful in obtaining Customer or regulatory endorsement for its preferred network change option, the option will have satisfied the Prudent Design Condition. NBN Co will still be required to satisfy the Prudent Cost Condition (discussed below) prior to amending the NBN Co Design Rules and implementing the network change.

A.1.2 Procurement approach

i. Introduction

NBN Co's approach to procurement and cost control is summarised in the NBN Co Corporate Plan. NBN Co believes that procurement carries the responsibility for providing the best commercial outcomes from expenditure made in support of NBN Co's strategy. Best commercial outcomes are evaluated considering all relevant costs, benefits and risks on a whole of life basis (best value for money, using total cost of ownership).

NBN Co's procurement strategy is anchored on proven principles. These principles serve two purposes:

- to guide the detailed activities of NBN Co and focus on the correct outcomes; and
- to demonstrate alignment to the essential probity, transparency and value requirements articulated by the Department of Finance and the Australian National Audit Office (ANAO). See further discussion in section A.3 below regarding a summary of the cost controls and transparency measures applicable to NBN Co.

ii. Prudent Cost Condition

The Prudent Cost Condition is the second condition that must be met by capex (and Third Party opex) for such expenditure to be considered to have been prudently incurred, except where such expenditure is deemed to have been prudently incurred (see clauses 4 and 10.3 of Schedule 8).

Accordingly, capex which is incurred in fulfilling the initial network design in accordance with the NDRs or future network changes are required to satisfy the Prudent Cost Condition (subject to the deemed categories)

In summary and as described further in this section, the Prudent Cost Condition requires NBN Co to satisfy certain requirements when it incurs costs in undertaking all activities connected with the design, construction and engineering of the NBN Co Network for those costs to be considered to have been prudently incurred. The principal means by which NBN Co must incur capex and Third Party opex in order to satisfy the Prudent Cost Condition is through a competitive tendering and procurement process. There are a number of additional ways in which NBN Co may satisfy the Prudent Cost Condition which provides some flexibility but ensures that such capex and Third Party Expenditure will be incurred prudently.

iii. Competitive tendering and procurement processes

NBN Co has developed a procurement strategy which provides the best commercial outcomes from expenditure made in support of NBN Co's strategy[131]. Under clause 9.3 of the Schedule 8 of the SAU, the NBN Co Procurement Rules are required to, and do, contain a competitive tendering and procurement process which satisfies certain conditions described in clause 9.3(b) of the SAU. In summary, these conditions relate to the efficiency objective sought to be achieved, together with the process by which NBN Co will award tenders and manage awarded contracts.

Capex and Third Party opex that is incurred in accordance with the competitive tendering and procurement process which accords with these conditions is considered to have been prudently incurred.

[131] NBN Co, *Corporate Plan 2011-2013*, p. 57

Further, NBN Co commits to reviewing the NBN Co Procurement Rules every 5 years. NBN Co will appoint an independent expert to assess whether the NBN Co Procurement rules remain consistent with good industry practice and will consider that assessment when reviewing the NBN Co Procurement Rules.

iv. Other means of incurring costs prudently

While the competitive tendering and procurement process is considered to be the main basis upon which NBN Co will incur costs, some flexibility is required to give effect to NBN Co's procurement strategy in a manner which would still fulfil the requirement that NBN Co prudently incurs costs.

These conditions include capex and Third Party opex incurred:

- in accordance with an appropriately managed contract variation process;
- on an arm's length basis;
- in an open market (e.g. a commodity market);
- as specifically required by law or the Shareholder Ministers;
- as considered appropriate by the Chief Executive Officer of NBN Co where one or more of the following criteria applies:
  - there is only one potential supplier;
  - the terms offered by the supplier are exceptionally advantageous;
  - the expenditure falls within a reasonable range of benchmarks; or
  - the NBN Co CEO considers it is in the best interests of the company to incur such costs with that particular supplier or in the particular circumstances having regard to the lifetime cost of acquisition and operation of the assets involved.

NBN Co notes that some of the concepts incorporated in these conditions are similar, but not limited, to concepts which are used in the Commonwealth Procurement Guidelines (e.g. commodity markets and exceptionally advantageous acquisitions[132]).

v. Regulatory support for NBN Co's approach

The approach taken in relation to the Prudent Cost Condition is similar to the approach accepted by the Queensland Competition Authority in relation to the Dalrymple Bay Coal Terminal (DBCT) Undertakings (2006 and 2010).[133]

---

[132] Commonwealth Procurement Guidelines, December 2008 at p.31

[133] http://www.qca.org.au/files/DBCT%202006%20Draft%20Access%20Undertaking_Decision%20Jun06.pdf and http://www.qca.org.au/files/P-2010dbctdau-QCA-FinalDec-DBCT2010DAU-0910.pdf

Under both the 2006 and 2010 undertakings[134], DBCT Management may determine costs of expansion of the terminal via a tender process. The QCA is required to be satisfied that the tender process:

- is in accordance with good industry practice;
- will generate an efficient and competitive outcome
- will avoid conflict of interest or collusion amongst tenderers;
- is prudent in the circumstances of the capacity expansion project; and
- will avoid unreasonable expenditure to contact variation claims.

The QCA accepted that:

> *Provided that tenderers are selected and awarded in accordance with the approved tender process, the QCA will accept the awarded contract amounts into the regulated asset base.*[135]

Furthermore, in accepting the 2006 undertaking, the QCA stated:

> *The Authority's decision also sought to facilitate the regulatory approval of expansion costs by providing for the Authority to approve, upfront, a tender process for expansion works and to accept the costs which are the result of an approved tender process into the regulated asset base.*
>
> *The aim of this tender process is to generate efficient expansion costs while at the same time introducing more certainty into a streamlined regulatory approval process for capital expenditure.*[136]

Given the significant cost control and transparency measures to which NBN Co is subject (as described in section A.3), NBN Co considers that an approach which focuses on a process which generates an efficient outcome is also appropriate in NBN Co's case.

A.2 Prudency of operating expenditure

Clause 10 of Schedule 8 of the SAU describes the prudency requirements applicable to NBN Co's opex.

Operating expenditure will be deemed to have been incurred on a prudent basis:

- if NBN Co ensures that Operating Expenditure is incurred:
  - in a manner that seeks to achieve value for money and the lowest Total Cost of Ownership; and

[134] Note that there was no substantive change to the approach to this issue between the 2006 and 2010 undertaking, and the 2010 decision did not re-consider the issue.
[135] QCA Decision to accept Dalrymple Bay Undertaking, June 2006, p. 20
[136] QCA Decision to accept Dalrymple Bay Undertaking, June 2006, pp.18-19

  - NBN Co otherwise controls operating expenditure in accordance with the Statement of Expectations and other regulatory requirements relating to procurement by NBN Co; and

- if, in respect of third party operating expenditure, NBN Co incurs the expenditure in compliance with the same conditions that apply to capital expenditure.

NBN Co is also subject to a considerable range of cost control and transparency measures. These cost control and transparency measures will play a strong role in ensuring that NBN Co incurs opex in a prudent manner.

Further, a number of categories of opex are deemed to be prudent, as also described below.

A.2.1 Lowest Total Cost of Ownership and value for money approach

NBN Co employs a lowest total cost of ownership and value for money approach in its procurement decisions. As NBN Co states in its NBN Co Corporate Plan in relation to its procurement strategy:

> *Best commercial outcomes are evaluated considering all relevant costs, benefits and risks on a whole of life basis (best value for money, using total cost of ownership).*[137]

Total cost of ownership has been developed in the information communications technology sector as a means of assessing the total costs (both direct and indirect costs, covering both capital and opex) on a whole-of-life basis associated with a particular project.

The total cost of ownership approach allows different options to be assessed based on a holistic approach to costs. In some cases, an option may involve higher capex and lower opex; with other options involving lower capex and higher opex.

The lowest total cost of ownership provides for an assessment of these options and the selection of the option involving the lowest total cost of ownership. This assessment involves looking at the total costs, which may lead to the selection of an option which involves lower or higher opex, but with a "trade-off" against other costs, such as higher or lower capex (as the case may be). Consequently, a lowest total cost of ownership approach may not, in every given situation, lead to the lowest possible opex outcome, but would still result in value for money when viewed against the totality of capex and opex over the life of the asset.

A.2.2 Consistency with Statement of Expectations

The Statement of Expectations contains a number of statements which require NBN Co to incur costs in a particular manner or which require NBN Co to provide reporting about costs (e.g. in its Annual Report). A linkage to the Statement of Expectations in the SAU is appropriate to cover the relevance of these statements to the manner in which NBN Co incurs opex.

[137] NBN Co, *Corporate Plan 2011-2013, p.*57

A.2.3 Third Party Operating Expenditure

In addition to the above principles, NBN Co will also meet certain conditions associated with Third Party opex. Third Party opex involves opex incurred in connection with the performance of services that are outsourced to third parties.

NBN Co has adopted the same approach for Third Party opex that is applicable to the manner in which capex is to be prudently incurred. That is, for both capex and Third Party opex, NBN Co will be required to satisfy the Prudent Cost Condition. Accordingly, NBN Co will be required to incur Third Party opex in accordance with a competitive tendering procedure, through an arms' length negotiation or by satisfying one of the other conditions relevant to the Prudent Cost Condition.

A.2.4 Deemed categories of Operating Expenditure

The same principles applicable to the deemed categories of prudency that apply to capex discussed in section A.1.1(iii) above apply to opex. These categories of deemed opex are listed in clause 10.3 of Schedule 8 of the SAU.

A.2.5 SAU Review

NBN Co also notes that clause 3 of Schedule 9 of the SAU will require NBN Co to undertake a review of the operation of the prudency of capex and opex prior to any privatisation of NBN Co. As discussed in section 7.6.2 of this submission, this review will provide the ACCC with a role in ensuring that the arrangements for opex prudency will continue to be suitable in the period were NBN Co may be subject to less stringent Government oversight.

A.3 Cost controls and transparency

A.3.1 Role of existing cost control and transparency measures

Of significant relevance to cost control by NBN Co are the existing legislative, Parliamentary and regulatory controls that are already in place which apply to NBN Co (including as a GBE). NBN Co is subject to a high degree of oversight and subject to many transparency measures in relation to the costs NBN Co incurs.

NBN Co is a GBE, incorporated under the *Corporations Act 2001 (Cth)* as a company limited by shares. It is a wholly-owned Commonwealth company operating under the *Commonwealth Authorities and Companies Act 1997*. The Commonwealth's interest in NBN Co is represented by two Shareholder Ministers – the Minister for Finance and Deregulation and the Minister for Broadband, Communications and the Digital Economy.

NBN Co's activities are also regulated under the NBN Companies Act, the *Telecommunications Act 1997* and the CCA.

The company is audited by the ANAO. It submits its annual report and other documents to the Australian Securities and Investments Commission, as required under the *Corporations Act 2001 (Cth)*.

NBN Co is highly accountable to the public through Parliamentary oversight. Its annual report and certain other documents are tabled in the Parliament. During the financial year 2010-2011, NBN Co senior executives appeared before four Parliamentary Committees, answering 358 questions[138].

On 11 June 2011, NBN Co also became subject to the *Freedom of Information Act 1982*, with limited exemptions.

Copies of NBN Co's significant public documents can be accessed on NBN Co's website - www.nbnco.com.au. These documents include the Annual Report 2010-2011, the Corporate Plan 2011-2013 and the Statement of Corporate Intent 2011-2013.

NBN Co submits that these existing measures place a significant control on the company's costs.

A.3.2 Government Business Enterprise requirements

NBN Co is a GBE, prescribed under the Commonwealth Authorities and Companies Regulations 1997. The Department of Finance and Deregulation, through the Government Businesses Advice Branch (GBAB), provides advice to the Australian Government relating to its GBEs.

On 11 October 2011 the GBAB released the Commonwealth GBE – Governance and Oversight Guidelines (GBE Guidelines) [139]. The GBE Guidelines apply to GBEs that are wholly-owned Commonwealth companies, such as NBN Co[140]. These revised GBE Guidelines were informed by recommendations from GBE boards, shareholder ministers, departmental officials and professional bodies. They took effect immediately and complement the *Commonwealth Authorities and Companies Act 1997* (Cth), as part of the overall governance framework for GBEs.

The main features of the Commonwealth's relationship with its GBEs are stated at Part 1.5 of the GBE Guidelines as follows:

> *a. a strong interest in the performance and financial returns of the GBE;*
>
> *b. reporting and accountability arrangements that facilitate best practice governance and active oversight by the Commonwealth; and*
>
> *c. action by the Commonwealth in relation to the strategic direction of its GBEs where it prefers a different direction from the one proposed.*

Requirements relating to the mandate and objectives of a GBE generally are set out in Parts 1.8 to 1.12 of the GBE Guidelines. The principal objective, set out at Part 1.18, provides as follows:

---

138 NBN Co Annual Report 2010-2011, p.19.

139 http://www.finance.gov.au/publications/governance-arrangements/docs/GBE_Guidelines.pdf

140 The GBE Guidelines is a General Policy Order for the purposes of sec 48A of the *Commonwealth Authorities and Companies Act 1997* (Cth). NBN Co must comply with General Policy Orders that are expressed to apply to it (sec 43 of the *Commonwealth Authorities and Companies Act 1997* (Cth)).

> *A principal objective for each GBE is that it adds to its shareholder value. To achieve this it is required to:*
>
> *a. operate efficiently, that is, at minimum cost for a given scale and quality of outputs;*
>
> *b. price efficiently;*
>
> *c. earn at least a commercial rate of return, given the obligations in (a) and (b) above to price and operate efficiently.*

Shareholders Ministers are required to set clear objectives for their GBEs that take account of the Government's mandate for those GBEs. On 20 December 2010, NBN Co's Shareholder Ministers issued a Statement of Expectations setting out the Australian Government's policy objectives in relation to the NBN and directing NBN Co in respect of the conduct of certain aspects of its business.

In relation to the Government's NBN Co mandate and objectives, the Statement provides:

"The Government's vision for NBN Co is that it operates as a commercial entity. NBN Co has been established as a wholly-owned GBE, with the intention that at an appropriate time, NBN Co will raise debt on its own behalf."

Further, NBN Co is required to add shareholder value in its operations, with a view to at least meeting the financial targets agreed by its Shareholder Ministers in NBN Co's corporate plans[141]. Part 4.8 of the GBE Guidelines provides:

> *Setting appropriate financial targets aims to:*
>
> *a. ensure that GBEs operate and price their goods and services efficiently; and*
>
> *b. provide an environment for GBEs which is competitively neutral with the private sector.*

A.3.3 Reporting and other cost transparency requirements

i. Accounting separation

NBN Co is also in the process of implementing the requirement in the Statement of Expectations to:

> *...design its corporate systems to achieve appropriate internal accounting separation arrangements covering assets and costs but not revenues for the treatment of its passive (physical infrastructure), active (electronics) and connectivity [transit] business activities.*[142]

[141] Part 3.7 of the GBE Guidelines.

[142] Statement of Expectations from shareholder Ministers, 17 December 2010, p.10. NBN Co was originally requested to commence reporting on these arrangements in the 2010-2011 financial year; subsequently changed to the 2011-2012 financial year.

ii. Annual reports

The directors of NBN Co are required to provide an annual report to their Shareholder Ministers in accordance with the requirements of section 36 of the *Commonwealth Authorities and Companies Act 1997 (Cth)*[143].

As a Commonwealth company incorporated under the *Corporations Act 2001 (Cth),* NBN Co must also comply with the requirements of Chapter 2M of the *Corporations Act 2001 (Cth)* in relation to the preparation of annual financial statements and the auditing of such statements and their lodgement with the corporate regulator.

NBN Co must provide its Shareholder Ministers with a copy of its financial report, directors' report and auditor's report, in a form as required under the *Corporations Act 2001* (Cth) for the financial year, within 4 months after the end of the financial year.

The Shareholder Ministers must table the documents in each House of the Parliament as soon as practicable after receiving them.

Additional requirements of an annual report are set in the GBE Guidelines. Part 3.13 of the GBE Guidelines provides:

> *GBEs should include comments on performance against the financial and non-financial expectations outlined in the SCI relating to that financial year.*

Further, the Department of Finance and Deregulation is currently reviewing the Commonwealth Authorities and Companies (Report of Operations) Orders 2008 with a view to implementing similar requirements for Commonwealth companies. At this stage, draft orders have been published for consultation only.

NBN Co has prepared Annual Reports for 2008-2009, 2009-2010 and 2010-2011. These documents can be accessed on NBN Co's website.

iii. Corporate Plans

NBN Co is required to prepare corporate plans in accordance with section 42 of the Commonwealth Authorities and Companies Act 1997 and Regulation 6AAA of the Commonwealth Authorities and Companies Regulations 1997[144].

Usually the corporate plans and subsequent updates, reports or supplementary information of GBEs are confidential to the Shareholder Ministers, their advisers and departments. However, in NBN Co's case, a public version of its first corporate plan was released on 20 December 2010.

---

[143] Section 79 of the NBN Companies Act also contains obligations in relation to the provision of financial statements, but will only apply to NBN Co if it ceases to be a wholly-owned Commonwealth company and until the end of NBN Co's majority interest sale date.

[144] Section 82 of the NBN Companies Act reiterates these legislative provisions, but only applies to NBN Co if it ceases to be a wholly-owned Commonwealth company and until the end of NBN Co's majority interest sale date.

Corporate Plans must be prepared at least once a year and cover a period of at least 3 years. Plans must be given to the responsible Shareholder Ministers. The responsible Shareholder Ministers must be kept informed about significant changes to the plan and matters that arise that may significantly affect the achievement of the objectives of the plan.

Details of the matters which must be included in the Corporate Plan of a wholly-owned Commonwealth company are set out in Regulation 6AAA of the Commonwealth Authorities and Companies Regulations 1997. These matters are summarised at Part 3.3 of the GBE Guidelines:

> *The corporate plan must .... include details of the following matters (so far as they are applicable):*
>
> *a. the objectives of the GBE;*
>
> *b. assumptions about the business environment in which the GBE operates;*
>
> *c. the business strategies of the GBE;*
>
> *d. the investment and financing programs of the GBE, including strategies for managing financial risk;*
>
> *e. financial targets and projections for the GBE;*
>
> *f. the dividend policy of the GBE;*
>
> *g. non financial performance measures for the GBE;*
>
> *h. community service obligations of the GBE and the strategies and policies the GBE is to follow to carry out those obligations;*
>
> *i. review of performance against previous corporate plans and targets;*
>
> *j. analysis of factors likely to affect achievement of targets or create significant financial risk for the GBE or the Commonwealth;*
>
> *k. price control and quality control strategies for goods or services supplied by the GBE under a monopoly; and*
>
> *l. human resource strategies and industrial relations strategies.*

Section 41 (1) of Commonwealth Authorities and Companies Act 1997 requires the directors of NBN Co to give the Finance Minister such supplementary information, reports and documents in their Corporate Plan, as requested.

Part 3.3b of the GBE Guidelines provides:

> *The supplementary information required is (unless otherwise agreed in writing):*
>
> *a. details of the broad mandate of the GBE, (including a summary of core activities that are in line with existing core competencies, and proposed non-*

core activities that require new competencies to be developed), together with a summary of those functions that may require its retention as a government owned GBE;

b. an estimate of the current commercial value of the Commonwealth's investment in the GBE and how that value was assessed, with the expectation that a discounted cash flow methodology would be used as the valuation basis, unless otherwise agreed by the Finance Minister;

c. financial projections, to be prepared in the same format as the progress and final report and consisting of profit and loss statement, balance sheet and cash flow statement;

d. capital expenditure projections linked to the physical assets of the GBE (where material), its business objectives and acquisition, maintenance and disposal plans;

e. cash flow (liquidity) projections;

f. a summary of the GBE's risk management policies, material risks and strategies for managing these risks...; and

g. proposed borrowing(s)...

Part 3.3c of the GBE Guidelines requires GBEs to incorporate targets for certain minimum key performance indicators across a five-year period (two prior and three forward years), in their corporate plans. If appropriate, results are to be reported against in progress reports as outlined in the table set out below part 3.3c (KPI Measures). Part 3.3d of the GBE Guidelines states that the Shareholder Ministers may propose and agree other indicators that are relevant to the measuring of the performance of the GBE, to be included in the corporate plan prior to the Shareholder Ministers approving the plan.

On 17 December 2010 NBN Co presented its first Corporate Plan 2011-2013 to the Government. A public version of the document was published on 20 December 2010. The plan sets out a comprehensive overview of the way NBN Co intends to fulfil its obligation to design, build and operate the NBN and achieve the Government's objective of providing high speed broadband for all Australians. This document can be accessed on NBN Co's website.

iv. Statement of Corporate Intent

Each year the directors of NBN Co and their responsible Shareholder Ministers must agree a Statement of Corporate Intent, which will be a public document.

Parts 3.7 to 3.9 of the GBE Guidelines set out the requirements in relation to the content and form of a Statement of Intent (SCI). Part 3.8 provides:

> *The SCI is a brief, high level, plain English document that is to be no more than five pages expressed in terms of programs or outcomes. It is an integral part of the corporate plan, but does not include commercially sensitive information. A SCI would*

> *normally contain a business description and mission statement, corporate vision, objectives, values of the GBE, statement of accountability (including reporting obligations) and selected key indicators of financial and non-financial performance.*

The SCI must be tabled in the Parliament within fifteen sitting days following the start of the next financial year. It must be published on NBN Co's website as soon as practicable after this date. The Shareholder Ministers may agree to a later tabling, by informing the Parliament.

On 11 October 2011 NBN Co's Statement of Corporate Intent 2011-2013 was tabled in Parliament. This document can be accessed on NBN Co's website.

v. Interim reports

The Finance Minister may require the directors of NBN Co to prepare interim reports for 3, 6 or 9 month periods of a financial year.

Interim reports must include a report on operations, financial statements and a report prepared by the Auditor-General. Interim reports must be given to the responsible Shareholder Ministers within 2 months after the end of the period covered by the report.

The Shareholder Ministers must table an interim report in each House of Parliament as soon as practicable.

vi. Keeping Shareholder Ministers informed

The directors of NBN Co must keep their Shareholder Ministers generally informed about the operations of the company and its subsidiaries. There are also specific requirements to notify certain significant events, where these arise outside of the normal corporate planning cycle.

vii. Continuous disclosure

The GBE Guidelines recommend that GBEs adopt an approach similar to the continuous disclosure requirements of the ASC listing rules. Part 3.19 of the GBE Guidelines provides:

> *a) Should a GBE become aware of any information that may have a material effect on its value and/or performance, that information must be provided immediately to the Shareholder Minister(s).*
>
> *b) Directors are required to provide such other information in relation to the GBE's operations as the Shareholder Minister(s) require(s), within the time limits set by the Minister(s).*
>
> *c) Where there are two Shareholder Ministers, all correspondence and reports from GBEs should be sent to both Ministers simultaneously. Whilst Shareholder Ministers will consult in relation to all correspondence, they may decide that, in relation to some matters, one of the Ministers will correspond on behalf of both Ministers.*

d) The Shareholder Minister(s) may consult with the Prime Minister and/or Treasurer about any material matter (as defined above) affecting the value of the GBE and provide copies of corporate plans, progress reports and correspondence on other major matters to the Prime Minister and/or the Treasurer for possible comment.

viii. Significant events disclosure

Section 40 of the *Commonwealth Authorities and Companies Act 1997* (Cth) requires the directors of NBN Co to immediately provide written particulars to their responsible Shareholder Ministers of certain significant events. These events include forming a company or significant partnership or joint venture, acquiring or disposing of significant shareholdings or businesses and commencing or ceasing a significant business activity.

While it is expected that most proposals for significant business initiatives would be documented and notified as part of the normal corporate planning cycle, Part 3.22 of the GBE Guidelines provides that where urgent initiatives arise outside of this process, notification must be prior to entry into the event. Such events would include new business ventures, major contracts and capital raising proposals.

ix. General disclosure

Section 41 of the Commonwealth Authorities and Companies Act 1997 (Cth) requires the directors of NBN Co to keep their responsible Shareholder Ministers generally informed about the operations of NBN Co and its subsidiaries and to provide such reports, documents and information in relation to their operations as requested.

x. Disclosure of business case proposals

Part 3.23 of the GBE Guidelines sets out requirements in relation to the content and format of business case proposals, that are submitted to Shareholder Ministers as part of the corporate plan process or as an urgent initiative. While NBN Co may agree a different approach with their Shareholder Ministers, the general requirements are as follows.

GBEs should distinguish between business cases that relate to core business and those that relate to non-core business. The threshold dollar value for consultation for proposed non-core business opportunities will be lower than that for core business opportunities and are to be agreed in consultation between the board and the Shareholder Minister(s) as part of the annual corporate planning process.

As a minimum, business cases should address the following:

a. the rationale for the project and an explanation of how it fits into the GBE's corporate strategy;

b. cost, anticipated return (net present value), the effect on shareholder value and some measure of the project's risk;

c. key assumptions around revenue and costs (including base case, scenarios *and sensitivity analysis), plus key risks and mitigation strategies;*

d. *proposed funding strategy;*

e. *the impact on the GBE's capital structure and credit rating (if applicable);and*

f. *expected outcome, and impact on future dividends.*

xi. Quarterly Progress Reports

The Chair of NBN Co's Board is required to provide confidential quarterly progress reports to the Shareholder Ministers by 31 August (for June quarter), 11 November (for September quarter), 11 February (for December quarter) and 11 May (for March quarter) of each year. The Shareholder Ministers may comment on the progress report within 45 days of its receipt.

Parts 3.10 to 3.12 of the GBE Guidelines set out the minimum requirements for such progress reports -

a. *analysis of the GBE's quarterly and year-to-date performance against corporate plan forecasts for the corresponding period, including detailed analysis of revenue and expense (including capital expenditure) performance for the period and explanations for deviations from corporate plan forecasts;*

b. *financial statements, the format of which is approved by the Finance Minister;*

c. *analysis of the GBE's performance against its broader corporate plan objectives (such as its KPIs and operational performance targets/forecasts where relevant) including any major achievements during the period along with explanations for any changes to strategies;*

d. *commentary on any emerging issues and risks or changes to risk factors that might have a material impact on performance. Details of strategies for managing any material risks that were not identified in the corporate plan should also be provided;*

e. *a clear statement of the GBE's outlook for the rest of the financial year in terms of meeting its full year re-forecast outturn, key risks and opportunities arising and management plans; and*

f. *commentary on progress in meeting CSOs (where relevant).*

A.3.4 Corporations Act and ASX recommendations

In addition to the GBE requirements, NBN Co is incorporated under the Corporations Act 2001. The general conduct of NBN Co's directors is subject to the provisions of the Corporations Act 2001.

NBN Co has committed to developing its governance structures and processes having regard to the ASX Corporate Governance Principles and Recommendations[145].

The ASX Corporate Governance Principles and Recommendations provide detailed commentary to address issues including, safeguarding integrity in financial reporting, making timely and balanced reporting and recognising and managing risk.

A.3.5 Performance audits

The Auditor-General for the Commonwealth may conduct a performance audit of NBN Co, or of any of its subsidiaries, if the Shareholder Ministers or the Joint Committee of Public Accounts and Audit requests the audit[146]. A performance audit is a review or examination of any aspect of the operations of a person or body[147], and is conducted by the ANAO. As described on the ANAO website[148], a performance audit can include an examination of one or more of the following:

- economy (minimising cost)
- efficiency (maximising the ratio of outputs to inputs)
- effectiveness (the extent to which intended outcomes were achieved)
- legislative and policy compliance.

As soon as practicable after completing the report on an audit of NBN Co, or of any of its subsidiaries, the Auditor-General is required to:

- cause a copy of the report to be tabled in each House of the Parliament;
- give a copy of the report to the Shareholder Ministers; and
- give a copy of the report to a director or senior manager of NBN Co, or its subsidiary (as the case may be)[149].

The Auditor-General may also give a copy of, or an extract from, the report to any person (including a Minister) who, or anybody that, in the Auditor-General's opinion, has a special interest in the report or the content of the extract[150].

---

[145] http://asx.ice4.interactiveinvestor.com.au/ASX0701/Corporate%20Governance%20Principles/EN/body.aspx?z=1&p=-1&v=1&uid=

[146] Section 17(2) of the *Auditor-General Act 1997* (Cth). The authority of the Joint Committee of Public Accounts and Audit is provided for under the *Public Accounts and Audit Committee Act 1951* (Cth). The purpose of the Joint Committee of Public Accounts and Audit is to hold Commonwealth agencies to account for the lawfulness, efficiency and effectiveness with which they use public monies.

[147] Section 5 of the *Auditor-General Act 1997* (Cth)

[148] http://www.anao.gov.au/~/media/Uploads/Documents/About%20the%20ANAO%202011.pdf

[149] Section 17(4) of the *Auditor-General Act 1997* (Cth)

[150] Section 17(4A) of the *Auditor-General Act 1997* (Cth)

A.3.6 Parliamentary committee oversight

The NBN Co Annual Report 2010-2011 states that during the reporting year, NBN Co senior executives appeared before the following four Parliamentary Committees, answering 358 questions:

- Senate Standing Committee on Environment and Communications;
- Joint Committee on the NBN;
- House of Representatives Committee on Infrastructure and Communications; and
- Regional Telecommunications Independent Review Committee.

Senate Standing Committee on Environment and Communications

The Senate Standing Committee on Environment and Communications comprises a legislative committee, whose purpose is to deal with bills referred by the Senate, the estimates process and to oversee the performance of departments, including their annual reports, and a references committee whose purpose is to deal with all other matters referred by the Senate.

NBN Co has appeared at Senate Estimates hearings 3 times in calendar year 2010 and 3 times in calendar year 2011. In 2011 NBN Co was asked 328 questions on notice which it has either answered or is in the process of answering.

Joint Committee on the NBN

The Joint Committee on the NBN was established in March 2011, to inquire into the rollout of the NBN project until the NBN is operational. It is chaired by Robert Oakeshott MP (Independent, Lyne, NSW).

The Parliament and NBN Co's Shareholder Ministers meet every six months on the following issues:

- *the rollout of the NBN, including in relation to the Government's objective for NBN Co Limited:*
    - *connect 93 per cent of Australian homes, schools and businesses with fibre-to-the premises technology providing broadband speeds of up to 100 megabits per second, with a minimum fibre coverage obligation of 90 per cent of Australian premises; and*
    - *service all remaining premises by a combination of next-generation fixed wireless and satellite technologies providing peak speeds of at least 12 megabits per second;*
- *the achievement of take-up targets (including premises passed and covered and services activated) as set out in NBN Co.'s Corporate Plan released on 20*

December 2010 as revised from time to time;

- *network rollout performance including service levels and faults;*
- *the effectiveness of NBN Co. in meeting its obligations as set out in its Stakeholder Charter;*
- *NBN Co.'s strategy for engaging with consumers and handling complaints;*
- *NBN Co.'s risk management processes; and*
- *any other matter pertaining to the NBN rollout that the Committee considers relevant.*

On 31 August 2011 the Committee tabled its first report – 'Rollout of the National Broadband Network - First Report'[151]. In relation to reporting requirements, the Committee recommended as follows -

> *The committee recommends that the NBN Co together with the Department of Broadband, Communications and the Digital Economy, commencing for the first quarter 2011-2012, provide a six-monthly report on the progress of the rollout of the National Broadband Network, using established Key Performance Indicators and performance measures, no later than three months before the committee is due to report to the Parliament.*

NBN Co has appeared before the Committee 4 times in calendar year 2011, and been asked 61 questions on notice.

House of Representatives Committee on Infrastructure and Communications

The House of Representatives Standing Committee on Infrastructure and Communications conducts inquiries into matters referred to it by the House of Representatives or a Minister of the Commonwealth Government. The Committee was established on 29 September 2010. On 25 August 2011 the Committee tabled its report on the inquiry into the role and potential of the NBN entitled Broadening the debate[152].

Regional Telecommunications Independent Review Committee

The Regional Telecommunications Independent Review Committee is established under the Telecommunications (Consumer Protection and Service Standards) Act 1999 to regularly review telecommunications services in regional and remote areas and to assess whether important new service advancements are delivered equitably.

The 2011–12 Regional Telecommunications Independent Review Committee will provide its second report to the government by 5 March 2012. This report will review telecommunications services in regional, rural and remote parts of Australia with particular

[151] http://www.aph.gov.au/house/committee/jcnbn/report.htm The Committee tabled its second report on 24 November 2011.
[152] http://www.aph.gov.au/house/committee/ic/NBN/report.htm

regard to initiatives that will enable regional communities to participate in, and realise the opportunities of, the digital economy.

A.3.7 Freedom of Information Act 1982

On 11 June 2011 NBN Co became subject to Freedom of Information Act 1982 (FOI Act), with limited exemptions. These exemptions relate to national security, law enforcement and public security, material obtained in confidence, Cabinet documents and other matters set out in the FOI Act. In addition to these general exemptions, Parliament has determined that documents relating to NBN Co's commercial activities are also exempt from the operation of the FOI Act. Similar exemptions operate for other GBEs.

Part 2 of the FOI Act requires certain GBEs to establish an Information Publication Scheme (IPS). The IPS provisions outline obligations to provide the public with access to information regarding the operations, activities and other matters of a GBE.

NBN Co has published an IPS Plan which explains how NBN Co intends to implement and administer its publication scheme.

Section 8(4) of the FOI Act outlines the obligations on Government entities to identify and publish information for proactive release. NBN Co has identified a series of documents that it has proactively released. These documents can be accessed on NBN Co’s website.

A.3.8 Conclusion on cost controls and transparency

While NBN Co commits to incur capex and opex in a prudent and efficient manner in the SAU, it already is subject to significant oversight of its activities as a result of it being a GBE. The costs that NBN Co incurs can be reviewed by a variety of government agencies, as well as by other parties through FOI provisions. In conjunction with the commitments made by NBN Co in the SAU, the transparency arrangements that NBN Co is subject to mean that its ability to inefficiently incur costs is significantly curtailed.

B. Customer engagement

Key points

- The Customer Engagement Model allows market participants to make optimal decisions. The Model provides superior benefits to Customers over inappropriately targeted regulation and is generally preferred by those who participate in the process (including regulatory agencies).

B.1 Introduction

A central aspect of NBN Co's prudency model is customer engagement. The use of the customer engagement model arises from the fundamental premise of regulation of infrastructure service providers which seeks to address an imbalance of market power in favour of an infrastructure owner. The best regulation should seek to reorient economic relations as close as possible to a well-functioning market.

A regulatory model that expands the space in which market participants can arrange their own commercial relationships to the extent possible delivers superior outcomes to one in which a regulator supplants the role market participants in shaping the market[153].

The customer engagement model allows the flexibility of all parties attempting to reach a negotiated outcome in accordance with normal market conditions while leaving open the possibility appealing to the regulator as an intervener of last resort. For example, if Customers are unable to convince NBN Co to provide a product, they may lobby the ACCC to declare a service. The ACCC then has the regulatory power to intervene if it determines NBN Co's decision not to provide the service relies on unfair market power. Conversely, if NBN Co is unable to convince Customers to endorse expenditure NBN Co can request endorsement from the ACCC.

The benefits of customer engagement are discussed further below and include:

- Addressing information asymmetry;
- Vertical co-ordination and flexibility of outcomes;
- Efficiency of process; and
- Increased satisfaction of all parties.

[153] See J Doucet and S Littlechild, *Negotiated Settlements: The development of legal and economic thinking* (2006), 1 <http://www.eprg.group.cam.ac.uk/wp-content/uploads/2008/11/eprg0604.pdf>

B.2 Information asymmetry

Customer engagement seeks to address the issue of information asymmetry. To the extent participants are satisfied with information exchange as a basis for negotiating an outcome, the information on which market outcomes are based, substantially reflect normal information exchange in a well-functioning market. To the extent the participants are unable to agree an outcome, the regulator gains the benefits of the information exchange which occurred through negotiation as a basis for identifying the disparate and conflicting interests that need to be resolved by reference to required policy outcomes in legislation.

B.3 Vertical co-ordination and flexibility of outcomes

The customer engagement model allows a wholesale provider to better co-ordinate services with the needs of its customers. There are numerous examples of this benefit as it relates to discrete regulatory areas[154]:

- In North America, gas transmission providers and their customers have negotiated changes to asset deprecation, fixed periods for agreed rates, conditions that would automatically require renegotiation and revenue and profit-sharing above certain thresholds. Many of these novel and fine-grained measures would be unavailable to regulators.[155]
- In Florida, one regulated entity agreed that rather than building contingency costs for weather damage into its rates, it would be allowed to levy special fees should they become necessary.[156]
- German airports (and UK airports to a lesser extent) were able to share risks of traffic uncertainty with airlines, incentivising both to increase traffic and decrease volatility in traffic fluctuations. The airports were also able to negotiate the details of risk thresholds and amount of profit/revenue shared according to local conditions and amend those variables when local conditions required. These flexibilities may not be available to a regulator which generally sets prices at set intervals and has to attempt consistency across regulated entities.[157]
- In all cases, the parties had the benefit of longer term certainty, consultation and risk-spreading. This is in contrast to a regulator-imposed outcome, where the regulator is often constrained by its legislative powers and mandate.

One expert summarises the benefits as follows:

---

[154] Littlechild, Regulation, *Over-Regulation and Deregulation* (Occasional lecture at University of Bath, 2008) <http://www.bath.ac.uk/management/cri/pdf/Occasional_Lecture_22.pdf>

[155] Littlechild, *The Process of Negotiating Settlements at FERC* (2011) <http://www.eprg.group.cam.ac.uk/wp-content/uploads/2011/01/EPRG1105_revised-version-May-2011.pdf>

[156] Littlechild, *The Bird in Hand: stipulated settlements and electricity regulation in Florida* (2007) <http://www.eprg.group.cam.ac.uk/wp-content/uploads/2008/11/eprg0705.pdf>

[157] Littlechild, *German airport regulation: framework agreements, civil law and the EU Directive* (2010) <http://www.eprg.group.cam.ac.uk/wp-content/uploads/2010/10/Littlechild3Oct20101.pdf>

[W]hen the regulator makes the decisions, everyone loses something, and parties have no control over what they lose. In the negotiation process, each party chooses which among the many points it is willing to lose in order to gain something else. Although this may sound like a distinction without a difference, in fact, the trade-offs arrived at voluntarily are much more stable and effective. Negotiated settlements are actually more democratic because all parties participate in the decision. As a result the terms are more likely to be implemented with enthusiasm and effectiveness than if they had been imposed from above by a regulator. Furthermore, in an atmosphere of trust and negotiation, more information is freely shared, with the result that more comprehensive solutions can be developed. [158]

In a broader sense, time, effort and money is more productively invested in the process of negotiation as compared with a regulatory dependence model. Professor Stephen Littlechild, who has written extensively on customer engagement models, puts it thus:

Experience with greater customer involvement in other jurisdictions, including ex post regulation as applied in the Australian airport sector, is that companies and customers get to know more about each others' preferences and abilities to provide services. Moreover, relationships within the industry improve. Instead of spending time and money to knock down the arguments of the other side, efforts are devoted to finding mutually advantageous ways forward.' [159]

Negotiated settlements work when market participants are able to structure the whole of scope of matters which are the subject of the customer engagement processes. This can be contrasted this with a transitional experience of the Canadian NEB. The NEB accepted a negotiated settlement between a transmission provider and its customers in general, but did not accept the negotiated rate of return (which it deemed too high). The settlement fell apart.

B.4 Efficiency of process

US state regulators originally began using negotiated settlement, or 'stipulations', as they are known in some jurisdictions, to clear a backlog of regulatory decisions. One state regulatory commissioner noted that although stipulations can be an ad hoc process in his jurisdiction they did 'reduce the time, expense and hostility typical of the traditional rate case.' [160]

---

[158] See J Doucet and S Littlechild, *Negotiated Settlements: The development of legal and economic thinking* (2006) at p 11 quoting G Palast, et al *Democracy and Regulation: How the public can govern essential services* (2003) at 96 (http://www.eprg.group.cam.ac.uk/wp-content/uploads/2008/11/eprg0604.pdf).

[159] Littlechild, *Consumer involvement, ex post regulation and customer appeal mechanisms* (Ofgem RPI-X@20 Web Forum 29 November 2009) at p 11 (http://www.eprg.group.cam.ac.uk/wp-content/uploads/2009/12/Consumer-involvement-ex-post-consumer-appeal-29-Nov-09-eprg.pdf).

[160] Ibid, 6 quoting from LA Helman, 'Rulemaking in lieu of ad hoc case-by-case adjudication: automatic adjustment clauses, the New Mexico experiment' in J R Foster et al (eds), *Regulatory Reform: The state of the regulatory art; emerging concepts and procedures* (1984) 148-53.

There is evidence that in some circumstances negotiated settlements can take longer than traditional regulatory processes. However, even in those cases:

- participants generally report a better outcome and feel the time spent is productive and not wasted; and
- the regulatory processing time is far shorter, for example in Canada, regulatory processing times have been cut by between one and two thirds.

In North America, where regulatory decisions were traditionally subject to annual reviews negotiated settlements are also required less frequently – 3 to 5 years on average.

There is some evidence that the flexibility and holistic outcomes offered by negotiated settlements are even more important to participants than the cost savings of an efficient process.

B.5 Increased satisfaction for all parties

In each regulated industry in which the customer engagement model is available, participants have shown a strong preference for negotiated outcomes.

Some of the following features may help explain, at a high level, this popularity – customer engagement models can:

- be used by market participants to create incentives tailored to the regulated firm;
- endorse expenditure on with a link to improved quality of service with measurements to verify improvements;
- result in agreed terms for infrastructure expansions that all market participants can 'own' and shape;
- include processes for the provision of information and arrangements for monitoring; and
- allow participants to seek remedial actions in some instances where performance of the regulated firm has been inadequate.

In summary:

> *…They focus on the issues and outcomes that the parties themselves find most important ... The resulting efficiency improvements have yielded significant price reductions along with higher profits.* [161]

Even where customer engagement models have had teething problems or been affected by external issues (like the CAA's constructive engagement and Argentina's public contest,

[161] Littlechild, *Stipulations, the Consumer Advocate and Utility Regulation in Florida,* 2006, p 34 (http://www.ofgem.gov.uk/Networks/rpix20/ConsultReports/Documents1/User%20participation%20 Ofgem%2028%20March%202009%20-%20final.pdf)

respectively), parties have preferred them to traditional regulation and continued using and refining them.

B.6 Conclusion on customer engagement benefits

The customer engagement model allows market participants to make optimal decisions. The model provides superior benefits to customers over inappropriately targeted regulation and is generally preferred by those who participate in the process (including regulatory agencies).

While there are some potential shortcomings of the model, it is better, in practice, than competing models that place an over-reliance on a regulator, placing burdens on it to make decisions without the benefit of market participants' information. In the customer engagement model, the regulator acts not primarily as a decision maker, but a facilitator assisting market participants to achieve a result that is acceptable to each of them and in the public interest.

C. NBN Co's network design principles

Key points

- NBN Co has designed its networks by reference to the objectives in the Statement of Expectations, and a number of fundamental design objectives that deliver both immediate and sustainable service enhancements for End Users, while minimising costs to deploy and operate the three networks.
- These objectives are crystallised in the Network Design Rules, which describe the approach taken to implementing the NBN.
- NBN Co will deploy a fibre GPON network that provides a long term road map to higher speed services, using ribbon fibre cables which can be more easily deployed in existing ducts and require less time to install and repair than traditional loose fibre cables. The fibre access network will be deployed in a modular manner using existing infrastructure where it is available to reduce installation costs and allow NBN Co to meet its construction schedule.
- The Fixed Wireless Network deployed to service 4% of premises will provide reliable high speed broadband services by managing the use of available spectrum for a known customer base.
- NBN Co has deployed an interim satellite solution using existing satellite capacity, and will later launch two purpose built next-generation satellites to deliver broadband services consistent with the requirements of the Statement of Expectations.
- NBN Co's POIs and transit networks have been designed with reference to the ACCC's advice on the location of POIs, and will provide common access points to the three access networks.
- The OSS/BSS deployed by NBN Co will allow Access Seekers to interact with NBN Co's network in a manner similar to interacting with their own network, and has been developed using a standards-based approach using off the shelf approaches wherever possible.

C.1 Statement of Expectations

The Statement of Expectations requires NBN Co to implement the Government's broadband vision by constructing a fibre-to-the-premises network to 93% of Australian premises, with the remaining premises to be served by fixed wireless and satellite technologies:

> *The Government expects that NBN Co will design, build and operate a new NBN to provide access to high speed broadband to all Australian premises. The Government's objective for NBN Co is to connect 93 per cent of Australian homes, schools and*

businesses with fibre-to-the-premises technology providing broadband speeds of up to 100 megabits per second, with a minimum fibre coverage obligation of 90 per cent of Australian premises. All remaining premises will be served by a combination of next-generation fixed wireless and satellite technologies providing peak speeds of at least 12 megabits per second.[162]

This section of the submission outlines the manner in which NBN Co has implemented the Government’s objectives as outlined in the Statement of Expectations.

C.2 NBN Co design objectives

In order to achieve the Government’s Statement of Expectations, NBN Co has put in place an overarching requirement to design the NBN to meet the following design objectives:

- minimise cost for 93% and the last 7% coverage objectives;
- deliver the NBN Co product requirements;
- meet the network availability criteria required for NBN Co’s service level agreements;
- ensure network asset lifecycles meet minimum objectives;
- maximise re-use of existing infrastructure; and
- provide a clear path for technology upgrade and ‘future proofing’.

Given that the NBN will be delivered using a mix of FTTP, wireless and satellite technologies, a key design objective has also been to optimise the FTTP / wireless / satellite network boundaries in order to deliver the maximum End User experience within reasonable capital and opex constraints.

These design objectives are implemented through a detailed network design which is summarised in the NDRs provided with the SAU and which are assessed as part of the ACCC’s assessment of the SAU.

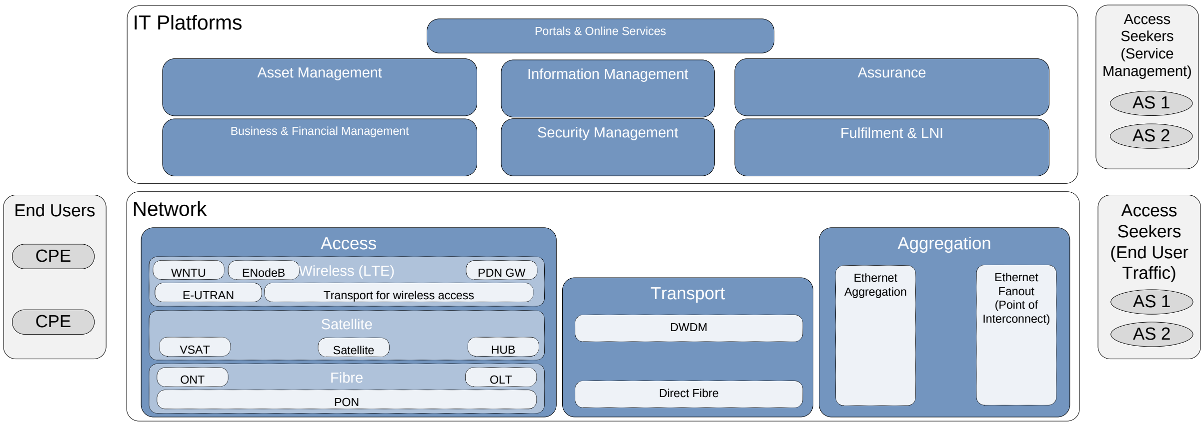
This Appendix provides context as to the design approach recorded in the NDRs.

C.3 Overview of NBN Co Networks

The key network “domains” which comprise the NBN are illustrated below in Figure C.1, and expanded on in detail in the NDRs.

[162] The Statement of Expectations from shareholder Ministers, 17 December 2010, p.1

Figure C.1: Key network domains



The following sections describe the rationale for the design approach taken with the key network domains. In particular, this Appendix discusses:

- the three access domains:
  - GPON Fibre Access;
  - Wireless; and
  - Satellite
- as well as the:
  - Transit network;
  - Points of interconnect; and
  - OSS/BSS.

C.4 GPON Fibre Access

For its fibre based deployment, NBN Co intends to use Gigabit Passive Optical Network (GPON) as the primary physical access technology. Use of GPON is consistent with the Statement of Expectations which provides as follows[163]:

> *The Government accepts the planned GPON architecture will be the most practical solution in brownfields based on the agreement with Telstra. The Company should proceed with network planning and construction of the rollout on the basis of GPON architecture. The Government expects NBN Co to conduct a home-run fibre trial in a new development, as these may be better able to accommodate home-run solutions than in brownfields, by early 2012.*

[163] Statement of Expectations from shareholder Ministers, 17 December 2010, p.10.

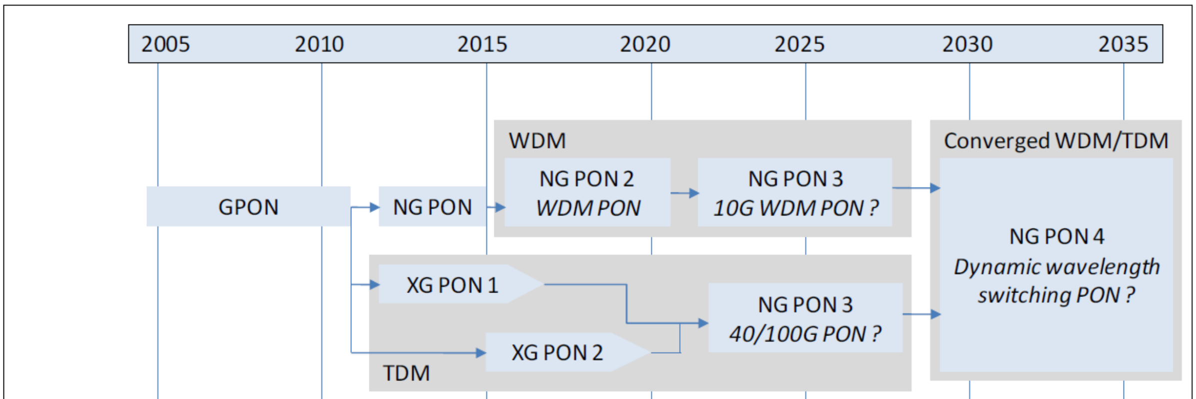
GPON provides a shared medium for End Users, with individual fibre tails to each End User provided from their premises to the splitter. GPON architecture has been chosen as the primary network architecture for mass market services because it can be substantially more economical for large radius coverage areas required in the Australian context, with savings in fibre and deployment, fibre management, power consumption and carbon footprint.

Furthermore, while the initial GPON technology selected by NBN Co is capable of delivering download speeds of up to 1,000Mbps, NBN Co has also carefully considered the appropriate technology from a future proofing perspective.

GPON technology already has a well defined road map to deliver 10Gbps, based on international standards and global development programs (see Figure C.2). Beyond 10Gbps PON, there are already blueprints for Next Generation PON 3 (NG PON 3) and NG PON 4, with projected speeds of 100Gbps available by 2030-35. These future developments cover both Wavelength Division Multiplexing (WDM) and Time Division Multiplexing (TDM) PON networks.

As outlined in NBN Co's Corporate Plan, GPON is on the following evolutionary roadmap. In the later years of this roadmap, the precise solution that is adopted will of course be subject to change.

Figure C.2: GPON evolution road map



Max Capacity	DL 2.5 Gbps UL 1.25 Gbps	DL 10 Gbps UL 2.5 Gbps	DL 10 Gbps UL 10 Gbps	DL 40-100 Gbps UL 10 Gbps	DL 100 Gbps UL 10 Gbps
Guaranteed Capacity	DL 40-80 Mbps UL 20-40 Mbps	DL 160-320 Mbps UL 40-80 Mbps	DL 1 Gbps UL 1 Gbps	DL 10 Gbps UL 10 Gbps	DL > 10 Gbps UL > 10 Gbps
Reach	20 – 30 kms	60 kms	80 kms	100 kms	> 100 kms

Source: NBN Co, Ofcom, Analysys Mason

For the fibre itself, NBN Co is specifying and deploying ITU-T (International Telecommunications Union) rated optical fibres that will ensure compatibility with future FTTP technologies. NBN Co is dimensioning cables with sufficient fibre count to ensure that the Company can support both i) any future subdivision of premises within the FTTP footprint and ii) the adoption of alternate FTTP architectures as these emerge. The fibre and the fibre count deployed by NBN Co provides future-proofing, as NBN Co wants to ensure that any technology that runs on fibre can be run on the NBN.

NBN Co’s contracts with the GPON suppliers also embody very strong commitments on future proofing and technical development. NBN Co also requires seamless interworking between equipment from different vendors, giving the Company maximum control over product change and the evolution of NBN Co’s network and services.

NBN Co also notes from consultation with industry that there is general consensus that GPON is an appropriate technology option for mass market residential services[164].

C.4.1 GPON Network Termination Device (NTD)

The GPON NTD terminates the incoming physical fibre at the End User premises and provides one or more UNI. A number of GPON NTD varieties will be used to suit different circumstances, End User types and interface quantities. The variants included are Indoor and Outdoor Single Dwelling GPON NTDs. Both have the following:

- 1 x GPON fibre interface
- 2 x UNI-Voice interfaces
- 4 x UNI-Data interfaces
- Support for standard power supply or Uninterruptable Power Supply (UPS).

Consistent with the Government’s Statement of Expectations, which state[165]:

> *the Government expects NBN Co's Business Plan to allow for the deployment of all network termination units within the fibre footprint with the capacity to support a back up battery, the cost of which is to be included as part of the network rollout. Similarly, NBN Co should provide a back up battery with all network termination equipment deployed in the fibre footprint, ensuring continuation of telephone capability in the event of a power failure for standard, non powered home telephones.*

NBN Co has allowed for the capability for a back up battery to be provided with the GPON NTD.

[164] NBN Co, *NBN Co response to industry submissions – proposed wholesale fibre bitstream products,* March 2010, pp. 13-14. http://www.nbnco.com.au/assets/documents/nbn-co-response-to-consultation-submissions-mar-10.pdf

[165] Statement of Expectations from shareholder Ministers, 17 December 2010, p.8.

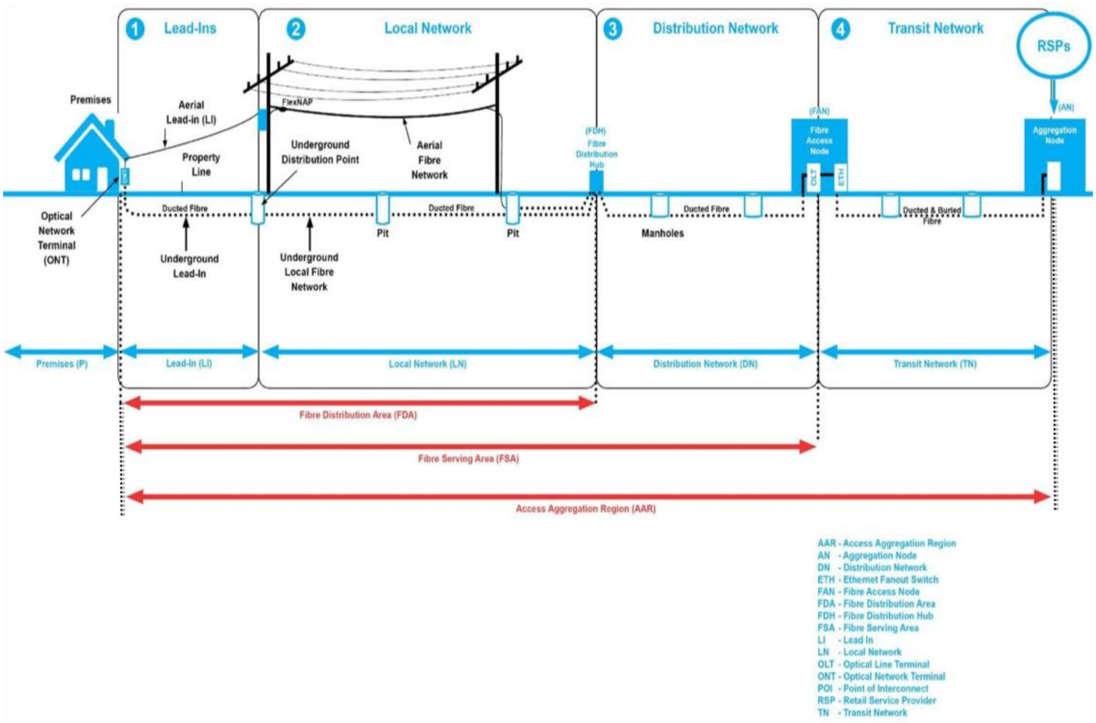
C.4.2 Passive Fibre Network

NBN Co’s passive fibre network contains all of the optical pathways between:

- The NBN Co POI and NBN Co Aggregation Node.
- The active equipment installed at NBN Co aggregation nodes (ANs) and Fibre Access Nodes (FANs)
- Fibre Access Nodes and End User Premises.

An overview of NBN Co’s passive fibre network is shown in Figure C.3 below.

Figure C.3: Overview of NBN Co passive optical network



The passive fibre network architecture used by NBN Co and recorded in the NDRs has been driven by a number of key business considerations, including the use of ribbon fibre cable. The use of ribbon fibre cable in NBN Co’s fibre network, rather than “loose tube” cables has been driven by the fact that:

- Ribbon fibre cables are available with fibre counts ranging between 12 and 864 fibres. These cables are virtually identical in size and handling characteristics to similarly constructed single fibre cables, allowing NBN Co to share space in already installed pit and pipe (for example in existing Telstra ducts);
- Cable repair time is reduced when splicing ribbon fibre cable compared to loose fibre cables;
- Labour hours per Fibre Distribution Hub (FDH) and the number of fibre splices required are significantly reduced with ribbon cable fusion splicing;

- Two divergent paths are provided to all FDH cabinets, allowing manual patching to improve response time to faults where there is cable damage;
- A pre-connectorised cable system is used which pre-terminates fibres in the Local Fibre Network onto multi-fibre connectors, which are then connected into multi-ports as required, reducing the time and resources required to connect a premises.

C.4.3 GPON Optical Line Terminal (OLT)

The GPON OLT function terminates multiple individual GPON connections, each with a number of ONTs attached. The GPON OLT supports up to 128 GPON interfaces per shelf, with each GPON interface extending to one or more FSAs for connectivity to End Users. GPON interfaces are arranged in groups of 8 per Line Terminating card.

C.4.4 Fibre footprint

As outlined in the NBN Co Corporate Plan, the precise FTTP footprint will only be known when NBN Co completes detailed suburb-by-suburb designs for the network, which will happen progressively during the construction period of the project (i.e. as NBN Co rolls out in each geographic area).

In determining the FTTP footprint the key objective will be to achieve the Statement of Expectations coverage target of 93% of premises at the minimum cost.

In determining FTTP costs, NBN Co has also taken into account the costs of building transit backhaul to connect more remote areas of the FTTP network to the main competitive backhaul network.

NBN Co's FTTP footprint has been determined as follows:

- All communities with greater than 1,000 premises (determined by G-NAF data) were mapped, and then remote communities (i.e. those requiring extensive transit backhaul) were backed out, to provide the minimum FTTP coverage of 90%;
- Transit backhaul routes required to service this FTTP footprint and 8 satellite earth stations were then plotted, and any communities with greater than 1,000 premises excluded under the above criteria along these routes were added back in, resulting in 90.8% FTTP coverage;
- All additional communities with over 1,000 premises were then added back in, together with the additional transit backhaul needed to serve these communities, resulting in 91.4% FTTP coverage; and
- All communities with greater than 500 premises that are passed by the transit backhaul routes resulting from the above were added in, resulting in 92.3% FTTP coverage.

This approach results in an optimised coverage plan, balancing the additional expense of adding incremental FTTP premises and the associated transit backhaul with the improved service that fibre will offer compared with wireless or satellite. NBN Co would consider proposals to provide FTTP coverage to particular locations when external sources of funding were provided to offset the incremental costs involved (e.g. state or local government funding).

C.4.5 Fibre construction

i. Fibre rollout

NBN Co is rolling out the fibre network to existing communities in FSAs of up to 40,000 premises that are made up of up to 12 modules (Fibre Serving Area Modules or FSAMs), each module consisting of around 3,000 premises. In line with network design and planning rules, NBN Co will generally continue construction of new modules adjacent to existing construction locations until the entire fibre footprint in an area has been completed.

An important additional aspect of this rollout is specified in the Statement of Expectations as follows:

> *In progressing the rollout, the Government expects that NBN Co will take into account the Government's commitment that fibre will be built in regional areas as a priority.*[166]

ii. Overhead versus underground cabling

NBN Co will install underground cabling wherever useable existing ducting is located. Where aerial cabling is required, it is planned that the cabling will be strung from existing electricity infrastructure poles. No new poles will be installed by NBN Co as part of the rollout project.

iii. Network construction schedule

As described in the Corporate Plan, over the period covered by the Plan, NBN Co will ramp up its construction capacity to a daily run rate of 5,200 premises passed per day by March 2013 (total of Build plus Build-Operate-Transfer premises) in order to reach 1.27 million premises passed by Fibre at the end of FY2013. Afterwards, the daily run rate will increase to 5,900 premises passed per day (total of Build plus Build-Operate-Transfer premises) during peak construction (assuming an approximately 10-year roll-out and 250 working days per year).

In order to achieve this construction objective, NBN Co will deploy a modular approach to the fibre network deployment to allow construction to occur in a manner that can be replicated in multiple locations and improved over time.

NBN Co has also sub-divided the FTTP network into 16 Roll-out Regions. Deployment of the network is planned to take place concurrently across all Roll-out Regions in order to optimise workforce utilisation and avoid large peaks and troughs in labour requirements both nationally and regionally.

[166] The Statement of Expectations from shareholder Ministers, 17 December 2010, p.3

C.4.6 New developments

In accordance with the Statement of Expectations, NBN Co is also required to rollout the fibre-to-the-premises network to new developments.

The Statement of Expectations provides as follows:

- *The Government considers that people moving into new estates should be able to access affordable, high speed broadband as soon as practicable.*
- *The Government has now finalised the following expectations regarding NBN Co's role as wholesale provider of last resort within its fibre footprint:*
- *NBN Co will provide fibre in all new 'broadacre' developments;*
- *NBN Co will provide fibre in all infill developments in which 100 or more premises are built within a 36 month period in areas where NBN Co has not yet rolled out its network;*
- *NBN Co will provide fibre to infill developments in areas where it has rolled out its fibre network, gradually replacing Telstra as the provider of last resort (for infrastructure and wholesale services) in those areas;*
- *NBN Co may use whatever operational arrangements it chooses to service new developments, including sub-contracting and build-operate-transfer arrangements;*
- *Telstra will continue to be responsible for ensuring telecommunications delivering infrastructure and services for developments of less than 100 premises (pending NBN Co being able to provide services); and*
- *NBN Co will establish a panel of appropriately qualified providers who can install fibre on its behalf.*[167]

NBN Co estimates that during the NBN rollout, an estimated 1.9 million additional premises will be constructed across Australia. As NBN Co is the wholesale provider of last resort, NBN Co will install fibre into new developments of 100 premises (dwellings/units) or more, released over a three year period, which have received Stage Five approval (relating to civil works) after 1 January 2011, within the NBN fibre footprint.

Under a NBN Co Developer Agreement, NBN Co will cover the cost of fibre infrastructure in new developments with Single Dwelling Unit premises. Developers will be responsible for designing and installing pit and pipe infrastructure to NBN Co's Pit and Pipe Installation Guidelines and then transferring ownership of pit and pipe to NBN Co. If the development is a Multi Dwelling Unit (MDU)), developers will be responsible for ensuring that the pathways comply with NBN Co's MDU Building Design Guide for Developers.

[167] The Statement of Expectations from shareholder Ministers, 17 December 2010, p.6

C.5 NBN Co Wireless Network

In accordance with the Statement of Expectations, the NBN Co wireless network will provide a high speed fixed wireless service for approximately four percent of Australian premises beyond the fibre network.

The Statement of Expectations provides that:

> *The Government has agreed that it is cost effective to deliver peak speeds of at least 12 megabits per second services via a fixed wireless solution from the 94th to 97th coverage percentiles. The Government requests NBN Co to provide this network and expects NBN Co to use existing infrastructure in providing this service, where efficient and economic to do so. In support of the fixed wireless solution, the Government expects NBN Co to acquire suitable spectrum on commercial terms but not compete in the auction of 700 MHz spectrum.*[168]

In February 2011, NBN Co negotiated the purchase of 2.3 GHz and 3.4 GHz spectrum licenses from AUSTAR and on 1 June 2011 signed a 10 year equipment supply and managed services contract with Ericsson to design, build and operate the 4G fixed-wireless network. The first services are scheduled to be delivered over the network in mid-2012, with the network build scheduled for completion in 2015.

NBN Co has decided to utilise fixed wireless technology because NBN Co can develop a reliable service by building a network for a more predictable number of users in a given area using this technology. The antennae used are generally fixed and installed so that they are directed towards the fixed wireless base station. By comparison, with mobile wireless the number of users in a cell can vary widely, and the strength of the signal changes as users move closer or further away from the base station.

Unlike mobile broadband, the NBN Co fixed wireless solution is not impacted by a variable number of users on the network. Fixed wireless networks are engineered to meet the speed and service requirements for a known number of users in the coverage area, which means that the bandwidth per head and speed experienced can be much more consistent and stable, even in peak times of use.

[168] The Statement of Expectations from shareholder Ministers, 17 December 2010, pp.3-4

C.6 NBN Co Satellite Network

NBN Co's satellite network will provide services to approximately three percent of premises, including some of the most geographically isolated areas in Australia. The NBN Co satellite network will be rolled out in two phases: an interim solution and a long term solution.

The Statement of Expectations provides that:

> *The Government has also agreed that NBN Co provide a next-generation satellite service ensuring access to peak speeds of at least 12 megabit per second. The satellite service configuration should prioritise remote Australia. To the extent consistent with this priority, it should cover not only premises beyond the fibre and wireless footprints but also those notionally falling within such coverage areas that, because of geography or other technical impediments, are unable to access fibre or wireless services. In the interim, the Government expects NBN Co to explore options to bring forward a suitable satellite solution to ensure the availability of improved satellite broadband services for regional Australia, eventually replacing the existing Australian Government Australian Broadband Guarantee program.*[169]

As part of the direction provided above, NBN Co is implementing an interim satellite solution to act as a transition between the ABG Scheme (which expired on 1 July 2011) and NBN Co's Long-Term Satellite service (scheduled for 2015).

To fulfil this requirement, NBN Co entered into a contract with Optus in May 2011 to provide managed satellite services for an initial five years with one option to extend. A second contract was signed with IPStar for additional satellite capacity.

Later that month NBN Co released the eligibility criteria for potential users of the satellite service. A trial was conducted with approximately 200 users, with NBN Co's first commercial satellite services launched on 1 July 2011.

NBN Co is planning to launch two 80 gigabits per second next-generation Ka band satellites. The broadband access services available over satellite are designed to provide peak download speeds of 12 megabits per second - similar to those currently experienced by many metropolitan End Users.

NBN Co's next-generation satellites will be purpose-built to provide high speed broadband to more remote Australians, and not split capacity between a number of other tasks such as satellite phones and broadcast television, nor focus on providing services in other countries.

The NBN Co satellites will have multiple focussed high capacity beams that are designed to maximise spectral efficiency. NBN Co will also use leading edge ground equipment and acceleration techniques to maximise performance.

NBN Co's satellite network will require approximately 10 to 15 gateway sites across Australia, likely to be located in remote areas of Western Australia, South Australia, Victoria

---

[169] The Statement of Expectations from shareholder Ministers, 17 December 2010, p.4

and / or New South Wales to avoid areas of high population density and heavy rainfall in Northern Territory, Queensland, and Tasmania.

Their exact location will be determined by the capability of the vendors' equipment and NBN Co planning and design.

The procurement of satellites and ground segment equipment for NBN Co's long term satellite network continues. Contracts are expected to be signed during 2012.

C.7 Transit network

The active transport network is used to provide long distance communication where it is needed in the network to deliver communications to points of interconnect that cannot be directly serviced by the active access network elements. This long distance communication is referred to as 'transit backhaul'. It is required predominantly in rural and remote regions to enable aggregation of traffic to a scale required to provide effective and efficient POIs for NBN Co's Access Seekers. This network will be a common network used for all three network technologies (fibre, wireless and satellite) and NBN Co's own needs for managing the network.

In determining the requirement for transit backhaul, NBN Co has considered the routes currently being constructed as part of the Government's Regional Backhaul Blackspots Program. Where these routes overlap with NBN Co's transit backhaul requirements, the costs of NBN Co acquiring the routes in the future have been factored in to NBN Co's capex forecasts.

C.8 Points of interconnect

A POI is the inter-network location where traffic is exchanged between one network and another. In December 2010, the ACCC advised the Government that a semi-distributed POI model to for the location of the initial POIs was likely to best meet the LTIE.

The ACCC reached this view after applying the 'competition criteria' as an initial starting point. In the ACCC's view the initial POIs should be located where:

- it is technically and operationally feasible for NBN Co to allow interconnection (this will usually be at the fibre exchange for each FSA);
- there are at least two competitors with optical fibres within a nominated distance from that location which:
  - connect that site to an optical fibre network which is connected to a capital city; and
  - deliver wholesale transmission services which are suitable for use by service providers who wish to connect to the NBN at that location; and

- there is other evidence that the particular route is, or is likely to become, effectively competitive.

Consequently, the Government advised NBN Co in the Statement of Expectations as follows[170]:

> *The Government has determined that a semi-distributed POI structure which extends the NBN Co network to meet with, but not overbuild competitive backhaul routes is the preferred outcome. Non competitive backhaul routes are declared under the Trade Practices Act 1974. The Government expects the ACCC will use its new scrutiny and pricing determination powers to declare prices to ensure that any backhaul routes do not become the new choke point preventing effective retail competition – particularly in regional Australia.*
>
> *The Government expects that NBN Co will act to ensure that POIs are located in accordance with the 'competition criteria' formulated by the ACCC. It expects NBN Co to provision its physical infrastructure, including POIs and fibre exchanges, to accommodate reasonable expectations for retail competitors' equipment, in anticipation of multiple retail competitors. While NBN Co is expected to consult closely with the ACCC in relation to the POIs, the specific location of the POIs will be a matter for NBN Co.*

Following the application of the 'competition criteria' to derive a set of network planning rules, NBN Co has worked with the ACCC to identify 121 initial POIs for Access Seekers to connect to the NBN Co Network in order to provide services to their End Users or other Service Providers.

From these locations, Access Seekers will then acquire backhaul transmission services from one or more transmission providers to take the traffic from the POI to their Point of Presence (POP).

C.9 OSS/BSS

NBN Co's OSS/BSS will provide critical capabilities to ensure that NBN Co is able to build, operate and maintain its national network and activate, assure and bill for services provided on this network. The objective is to enable NBN Co and its Access Seekers to be able to perform these tasks in the most efficient and effective way possible with the maximum use of automation and self-serve processes being made available to Access Seekers.

In particular, in order to reduce operational costs for both NBN Co and Access Seekers, Access Seekers must be able to access NBN Co's network, to deploy services, as if it was their own network. This "virtualised" network concept is vital in ensuring NBN Co's Access Seekers are able to transact with NBN Co in a way that optimises their End User's experience. Therefore NBN Co will be offering its Access Seekers the opportunity to connect via business-to-business operational interfaces for ordering, provisioning and fault management purposes. This will involve the connection of our telecommunications Access Seekers'

[170] The Statement of Expectations from shareholder Ministers, 17 December 2010, p.7

business support systems with NBN Co's operational support systems using open, transparent and robust interfaces for performing the many transactions required at different stages of the End User lifecycle (ordering, provisioning, service management, billing, deactivation etc).

The capabilities to be delivered using the OSS/BSS are:

- Product Catalogue;
- Ordering and Activation;
- Service Assurance;
- Billing and Collections;
- Inventory Management; and
- Network Planning and Geospatial tools.

NBN Co has indicated to industry (Access Seekers and suppliers) its intention to use a standards-based approach wherever possible for transacting with third parties. In particular existing standards from the International Telecommunications Union and the TeleManagement Forum are being used and extended to enable this capability.

Three goals are driving the NBN Co systems delivery approach:

- Deploy off the shelf products for most capabilities, and customize only where absolutely necessary to meet regulatory, legal, or critical operational requirements;
- Select "best of suite" solutions, to minimize integration cost, rather than selecting the very best product for each specific capability; and
- For a select few systems (notably internet and intranet portals and business-to-business gateways) NBN Co will consider in-house development to ensure maximum flexibility and speed to market.