GREX CONSULTING

Independent Expert Report

NBN Co SAU Variation Expenditure

24 April 2023

Final Draft

Contents

Part B: NBN Co Expenditure Process

1 Part B summary

- Based on the ACCC Briefings, RFI Process and SAU Variation, this Part B provides a summary of the description by NBN Co of its expenditure process.
- The expenditure process encompasses the Integrated Operating Plan (IOP) process and SAU process, and a description of the link between the two sets of processes is provided in section 4 of this Part B.
- Part B is not intended to provide analysis of the processes described by NBN Co, but rather to set further context to the review of the various documentation described in this Report as analysed and assessed in Part C.

2 IOP Process

2.1 Summary

The Integrated Operating Plan (IOP) described by NBN Co to ACCC underpins NBN Co's investment plans over the four years from FY23 to FY26 and is a requirement for Government Business Entities (GBEs) under the Public Governance Performance & Accountability (PGPA) Act 2013. The IOP is the outcome of a bottom-up planning across NBN Co's business units by capital expenditure initiative and operating expenditure spend category that is subject to the following (summarised) governance and approval processes:

1. Pre-IOP workstreams financial guidance. For this IOP23, financial guidance is based on FY22 run rates, risks, and opportunities,
2. Refresh of the Integrated Enterprise Roadmap (IER) initiative list, and update business cases to inform the IOP,
3. Business Unit bottom-up operational and financial planning,
4. Consolidation of IOP financials and review of targets and trade-offs,
5. Prioritisation across the IER, and Business Unit, alignment of execution, and costs and benefits of key initiatives,
6. Executive Committee (ExCo) workshop to review final consolidated plans, and
7. Board review (the latest iteration, IOP23, was approved by NBN Co's Board on 28 June 2022).
8. Final Board Approval of IOP23 incorporating the 1.5m additional FTTN to FTTP upgrade program was 27 September 2022.

The operational and financial planning as described by NBN Co is supported by the governance review and approval process which is at the core of the methodology. NBN Co describes the process as highly flexible so that NBN Co can better account for changes of context such as those NBN Co is now going through with the transition from building to running the NBN network.

IOP23 was informed by and aligned with much longer term (10 year) product and network roadmaps that are built on robust long-term demand forecasts. IOP23 has continued to have a strong focus on driving efficiency improvements and on the prudency of all planned expenditure (in respect of meeting both the current and future needs of end users).

In developing the IOP, NBN Co re-applies its forecasting methodology, informed by actual outturns and forecasting forward four years. Undertaking this process on an annual, cyclical basis has been described by NBN Co as allowing it to ensure that forecasts for the four-year period best reflect the expenditure implications of current expectations and market conditions, new or revised Government policy directions, and lessons learned from the actual expenditure undertaken in the previous year – including any additional efficiencies identified that may be realised in the next IOP period.

NBN Co has described that it is subject to a continuing objective to pursue productivity gains across all areas of activity, including its transition to operating the NBN network, for example:

- forecast productivity gains in Service Assurance in parallel with increases in the volume of network traffic and the number of activated premises requiring assurance,

- labour costs have been subject to top-down benchmarking and bottom-up requirements analysis, and reflect a substantial workforce redesign to position NBN Co for efficient long-term operations and delivery of high performance and value for customers, and
- capital expenditure-related productivity gains that will reduce the quantity of inputs required to deliver network outputs over time – these include the truck roll reduction program (relevant to Customer Connect), management of the triggers for capacity augmentation, and the Enterprise Simplicity Initiative.

2.2 Governance

The IOP Governance Process described by NBN Co is a combination of top-down financial guidance and bottom-up financial and operational initiatives.

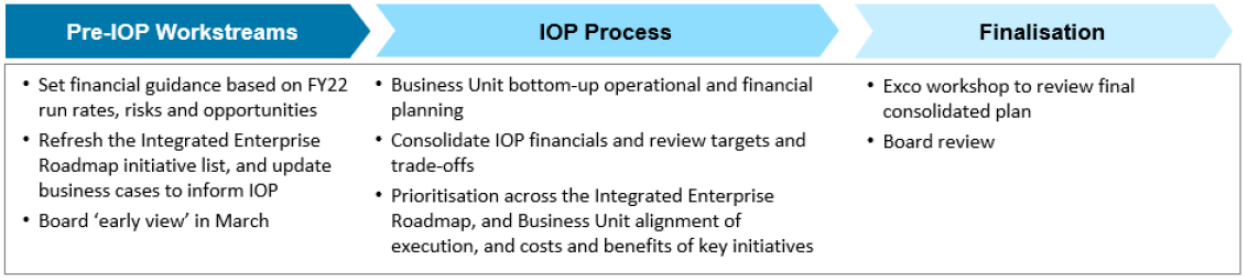

Figure 1: IOP Governance Process[1]

As part of that process, NBN Co's Executive Committee, Board, Shareholder Departments and Shareholder Ministers have formal roles in reviewing and endorsing the plan.

Governance Process[2]

After the IOP is completed, each year there is a transition from planning to implementation, and NBN Co's expenditure governance processes are applied to all operating expenditure and capital expenditure. For capital expenditure, NBN Co's Approval Forum provides oversight of all projects (for example, IT projects are subject to annual and quarterly prioritisation exercises).

2.3 Risk Management

NBN Co IOP Expenditure Risk Management[3]

As described in Part F, NBN Co's expenditure forecast is subject to a number of risks and uncertainties including:

- demand (new developments, access speeds, busy hour traffic, high-speed upgrades, business upgrades),

[1] 001 nbn ACCC Briefing – IOP23 Expenditure Overview – CONFIDENTIAL
[2] "[CIC] NBN Co – SAU supporting submission – Efficiency of NBN's expenditure and demand forecasts – 16 December 2022 ("SAU Supporting Submission Part F")", Chapter 21.5.8, Expenditure governance processes, Page 26, Chapter A.1.9, Expenditure governance processes, Page 36.
[3] "[CIC] NBN Co – SAU supporting submission – Efficiency of NBN's expenditure and demand forecasts – 16 December 2022 ("SAU Supporting Submission Part F")", Chapter 21.5.7, Risk & Uncertainty, Page 25

- the nature and extent of future competition and the uptake of alternative networks and services (which will affect demand, and potentially also the timing of upgrade plans),
- technology change relating to the network itself and how it is used (which will affect the optimal upgrade path by changing both the supply and demand side, e.g., through advances in FTTP technology/cost, and video compression technology),
- timing and extent of projects under the Regional Co-Investment Initiative, and
- future (Commonwealth) government requirements.

It is NBN Co's position (as described in Part F) that these risks and uncertainties can be addressed through a relatively short period for the First Regulatory Cycle (1 July 2023 to 30 June 2026).

3 SAU Process

NBN Co's SAU variation has included the following key elements[4] across the SAU regulatory framework.

General regulatory framework and modular structure	
Regulatory module applications and determinations	Approach to make determinations ahead of each regulatory cycle through the replacement module process will continue. Under the proposed variation, each regulatory cycle would last between 3 and 5 years, and the assessment process would be streamlined and specified in the SAU, rather than relying on the statutory SAU variation process.
Post-2032 arrangements	
Post-2032 arrangements	This would split the remaining term into pre-and-post 30 June 2032 periods. The replacement module application and determination process would operate differently. The rules in Module 2 for determinations made by the ACCC, would change with post-2032 determinations according to high-level terms and principles (including Module 3).
Pricing and product constructs	
Move to flat rate pricing offers	Residential grade 100 Mbps and higher speed tiers to be offered on a flat monthly charge basis from 1 July 2023 or three months from acceptance. The remaining residential grade speed tiers to transition to flat rate offers by 1 July 2026, and would involve the CVC overage charge being reduced each year of the first regulatory cycle from $8/$7$/6 Mbps/month and then being set to zero. The CVC allowances in the bundled offers would be adjusted every 6 months over the initial regulatory period.
Price controls and transparency measures	
Price controls	Establish new individual product price controls for the flat rate and bundled product offers, along with an overall WAPC covering NBN Co's core product offerings. For the speed tiers that remain subject to CVC charging over the first regulatory cycle, the price controls will apply to the bundled charge amounts as calculated on a weighted average basis across retailers.
Regulated price path to 30 June 2032	There are regulated price paths for the period up until 30 June 2032[5]. Until NBN Co's annual revenues align with its regulatory allowances (projected for 2030 financial year) the WAPC would be limited to increases in CPI. From that time, the annual change in average price can be either above or below CPI, driven by NBN Co's regulatory allowances and forecasts of demand. Price changes for speed tier offers would be limited to no more than 5 percent or CPI (whichever the higher), except for entry level data access offer which would be limited to CPI increases. Prices across speed tiers need to comply with the WAPC.
Other price certainty measures	NBN Co will publish by 1 May of each year a binding tariff list for the forthcoming financial year and roadmap of prices for the next three financial years. Subsequent year tariff list prices would not differ significantly from roadmap prices previously published for that year, as relativities between monthly prices would be maintained to within $1 per month of the relevant roadmap pricing. NBN Co would publish a statement of pricing intent for each regulatory period, with tariff list and roadmap prices consistent with the statement of pricing.
NBN Co's approach to the BBM	
Building block model	Continue current SAU framework with composition of the annual building block revenue requirement (ABBRR) and regulatory asset base (RAB) roll-forward. There is separate identification of costs attributed to core regulated services, and competitive services. Economic lives of some asset classes are to be revised in the updated model, including recent investments in fibre to the premise (FTTP) and fixed wireless networks, which alters capital cost profile compared to earlier BBMs
Recovery of accumulated losses	
Recovery of historical losses	Specify the balance of the ICRA as $12.5 billion in current nominal terms[6]. This balance would be maintained in real terms, but no further losses added to it. The balance would be

[4] ACCC, "Proposed variation to the NBN Co Special Access Undertaking, Consultation paper", January 2023, Chapter 4.1, Key Elements, Page 19-21

[5] Note: Appears to be dependent on the operation of the price controls specified in the SAU rather than regulatory determinations made at each reset

[6] This is significantly below the balance accumulated under the current SAU

	progressively recovered by adding drawdown amounts to the ABBRR, projected to the 2030 financial year, to give an overall annual regulated revenue allowance. NBN Co considers the recovery of this additional amount is required to provide a reasonable opportunity to achieve and maintain an appropriate investment grade credit rating during the SAU term.
Cost allocation and accounting separation	
Cost allocation methodology	Separate cost bases for 'core' and 'non-core' services using cost allocations. Services supplied in competitive markets will be allocated to the non-core cost base, with prices for these services outside the SAU controls. Residential grade and all other services would be core services, and their costs would be allocated to the core services cost base and SAU price controls would apply. New services would be categorised ahead of each regulatory cycle through the replacement module process. The full ICRA balance would be allocated to core services.
Expenditure criteria	
Expenditure criteria	NBN Co would submit a BBM proposal at each regulatory reset, including forecasts for operating and capital expenditures. The forecast expenditures are to reasonably reflect those that a prudent and efficient operator in NBN Co's position would incur in achieving the 'expenditure objectives', having regard to a number of 'expenditure factors'. The ACCC would have regard to the expenditure objectives and expenditure factors in making a regulatory module determination. Similar considerations would apply to the assessment of cost pass-throughs and whether capital expenditures ought to be included in the RAB.
Weighted average cost of capital	
Weighted average cost of capital	A nominal WACC (that is a weighted average of the pre-tax cost of debt and the post-tax cost of equity) would be applied to determine the allowed rate of return on capital, which is based on individual estimates for all key parameters. NBN Co has proposed specific values for WACC parameters for the first regulatory cycle using a detailed methodology. ACCC would have the power to undertake a review of the WACC methodology ahead of each regulatory cycle.
Service quality	
Service quality	A framework for specifying benchmark service standards for each regulatory cycle[7]. These could be changed for each regulatory cycle, and mid-regulatory cycle changes (e.g., in response to retail regulatory changes; a systemic service standard event; or an application lodged by NBN Co). In the post-2032 regulatory period, NBN Co has the option of nominating benchmark service standards, but would be under no obligation unless requested by the ACCC in its statement of approach. The ACCC could specify benchmark service standards for a regulatory cycle in a replacement module determination.
Incorporating other access technologies	
Expanded scope of SAU to cover other access technologies	Services supplied over the fibre to the building/curb/node (FTTB/C/N) and HFC networks are subject to the SAU. Some service specifications have been included into the SAU, including peak information rate, committed information rate objectives and service boundary points.
Reporting	
Reporting and transparency	Introduces commitments to report on service levels, operational matters such as network availability, network utilization and corrective action[8].
ACCC functions and powers	
ACCC functions and powers	Confer additional functions and powers on the ACCC, such as administering a specific regulatory process.

Table 1: SAU Variation Key Elements Summary

Set out below are the elements of the SAU that are relevant to this Report.

3.1 Building Block Model

3.1.1 Overview

A Building Block Model (BBM) is an economic regulatory mechanism used to determine and calculate costs incurred efficiently when deploying government owned or backed infrastructure

[7] The initial service levels are associated with the performance objectives and rebates, applying under WBA4

[8] This reporting mostly mirrors current reporting under WBA4.

for the purpose of setting a maximum allowable revenue for the entity. Use of the BBM by regulated entities is common practice in electricity network regulatory regimes.

The BBM is used to determine NBN Co's Annual Building Block Revenue Requirement (ABBRR) for the FRC using its RAB, operating expenditure, and other cost components as illustrated in the figure below. The ABBRR will inform NBN Co's pricing decisions both in terms of structure and price levels.

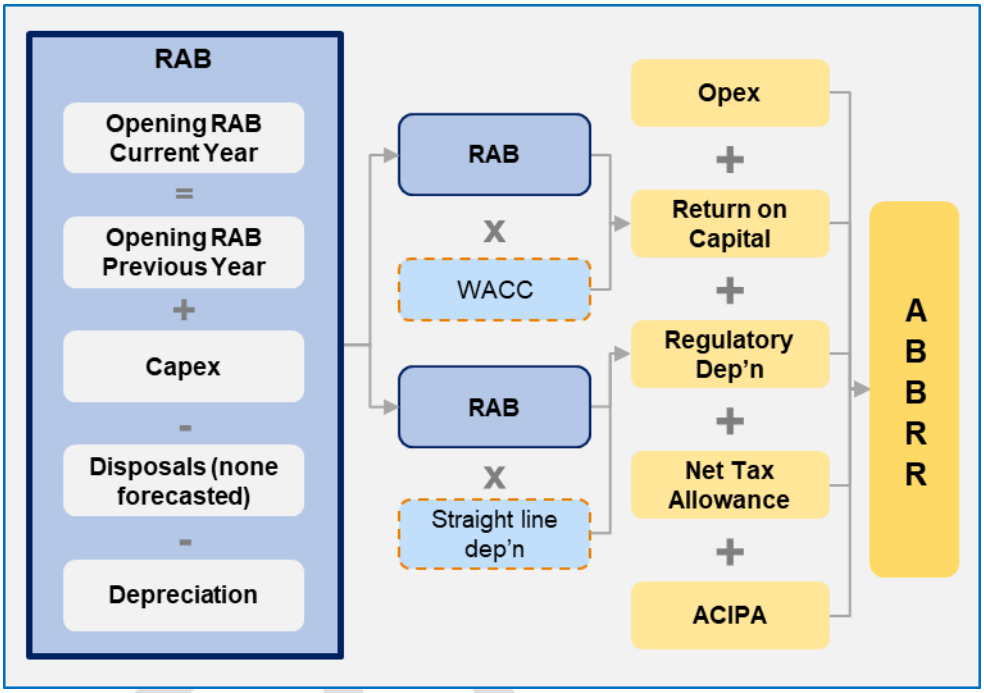

Figure 2: Building Block Model (Source: Grex)

The components in Figure 2 are detailed in Table 2 below.

BBM Component	Description
RAB	The base of NBN Co's regulated costs, used as an input towards its ABBRR. NBN Co's RAB aggregates the actual amount of capex permitted under the SAU incurred on any NBN Co Relevant Assets by NBN Co or any of its related bodies corporate since the commencement of NBN Co's operations. Relevant Assets include 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. The RAB is calculated using real values and converted to a nominal value for its use as an input to the ABBRR.
Opening RAB Current Year	The Opening RAB Current Year, or Opening Asset Value, is a function of the Opening RAB, capex incurred, and the disposals and depreciated in the previous period.

Capex	NBN Co's capital expenditure, as determined by the IOP process as an aggregate number. From there, capex is split by asset from NBN Co records in the current LTRCM (>600 items). This includes capital expenditure, assets received for nil consideration, and asset additions and subtractions.
Disposals	Disposals are reported by asset up to 2022-23 and are currently 0, with nothing forecast during the FRC.
Regulatory & Tax Depreciation (Return of Capital)	Real straight-line method depreciation and nominal tax depreciation based on the opening value and remaining life for each asset class. Tax depreciation is used to calculate the Net Tax Allowance.
Indexation	Indexation or the Cumulative Inflation Factor (CIF) is used to convert real values into nominal figures and is calculated by cumulatively adding inflation to an index. The index uses FY14 as the base year (t=1).
WACC	The Weighted Average Cost of Capital refers to NBN Co's nominal rate of return and is calculated using the Capital Asset Pricing Model (CAPM).
Opex	NBN Co's operating expenditure, as determined by the IOP process and included as a high-level forecast not split by technologies or asset classes within the BBM.
Return on Capital	Return on Capital refers to the required amount of capital for debt and equity financiers, and is determined by multiplying the RAB against the appropriate WACC.
Net Tax Allowance	The Net Tax Allowance incorporates the cost of corporate tax into the same year's ABBRR. This applies when the sum of taxable profit (nominal revenue less nominal opex less interest expense less nominal tax depreciation) and tax loss carried forward is greater than 0. This value is multiplied by the statutory company tax rate in the given financial year multiplied by 1 less gamma, which is the value of imputation (franking) credits.
ACIPA	The Annual Construction in Progress (CIP) Allowance (ACIPA) includes a yearly actual and forecast CIP for a start and end of the period.
ABBRR	The ABBRR is the sum of Return on Capital, Nominal Regulatory Depreciation, Nominal Opex, Net Tax Allowance, and the ACIPA for a given year.

Table 2: Building Block Model Components

3.1.2 Revised BBM[9]

NBN Co has developed a revised forward-looking BBM which is based on the model currently used for the LTRCM provisions. The revised BBM differs from the current LTRCM model, in that the revised BBM allocates the RAB and ICRA to Competitive and Core Regulated Services. In the revised publicly released BBM, only the Core Regulated Services are modelled, with the allocation to Competitive Services occurring outside the public BBM and in the confidential BBM sent to ACCC. The revised BBM also models the ABBRR and ICRA recovery amounts going forward and provides more detail at an asset class level basis.

The revised BBM is a forward-looking model and uses forecast capital expenditure and operating expenditure (from NBN Co's IOP Process) to determine the forecast ABBRR. The forecast ABBRR is used to calculate the tax allowance on a forward-looking basis. The revised BBM calculates inputs to the Core Services ABBRR for the First Regulatory Cycle to inform NBN Co's pricing decisions both in terms of structure and price levels.

The revised BBM implements the building block economic regulation approach to determine an ABBRR and calculations regarding NBN Co's recovery of ICRA, as well as NBN Co's allocation of costs between Core Regulated Services and Competitive Services, i.e. contains cost allocations between Core Regulated and Competitive Services. *Note: The public BBM consists of only the Core Regulated components of the BBM. The revised BBM separates calculations across Core and Competitive Services across all elements of the model, including inputs such as capital expenditure, depreciation, operating expenditure, asset disposals, and tax calculation.*

The revised BBM has been split into two models:

1. A backwards-looking model that captures FY2009 to FY2022 and one year of forecasts for FY2023. The model calculates inputs into the revised BBM, including the RAB and remaining lives for each asset class.
2. A forward-looking model from the beginning of the Subsequent Regulatory Period (FY2024) which captures calculations using forecast data.

The proposed SAU will move from the backwards-looking LTRCM model to be replaced by the forward-looking model from the start of the Subsequent Regulatory Period.

The cost allocation methodology to determine Core versus Competitive cost allocation is discussed further below.

3.1.3 Core versus Competitive Cost Allocation[10]

As set out by NBN Co in its supporting submissions[11], whilst all of NBN Co's eligible services are declared and subject to regulation, not all eligible services are subject to the same terms set out in the SAU Variation. NBN Co proposes that most Core Regulated Services will be covered by the SAU Core Services WAPC. However, there are two kinds of exceptions to this:

[9] Refer to nbn FY24-FY40 Building Block Model handbook, December 2022
[10] nbn initial Cost Allocation Manual, Applicable for the proposed nbn F09-FY23 BBM and nbn FY24-FY40 BBM, December 2022
[11] NBN Co SAU Variation Supporting submission Part E, section 17.2.

1. Services that do not fall within the scope of the NBN Co Access Service or Ancillary Services: These services will not be subject to the SAU's pricing and product development / withdrawal provisions, although some services, such as Sky Muster Plus, will be accounted for in the Core Services WAPC even though they are not captured by the NBN Co Access Service, and
2. Services defined as Competitive Services can be covered by the SAU as they may fall within the scope of the 'NBN Co Access Service' but will not be subject to the same SAU obligations as Core Regulated Services.

The regulatory treatment of Competitive Services reflects the different commercial and competitive environment in which these services are provided. Competitive Services include:

1. NBN Co Enterprise Ethernet (EE), which uses a dedicated, high-performance fibre optic cable connected from a business' premises to NBN Co's fibre access node.
2. NBN Co Business Satellite Service (BSS), which is an enterprise level satellite solution that combines access to satellite infrastructure with additional business services, such as a specialist Business Satellite Operations Centre to manage connections, service requests and service incidents.
3. NBN Co Satellite Mobility for Large Commercial Passenger Aircrafts, which is a wholesale satellite access service which can be used for Wi-Fi services onboard large passenger aircraft.

Core Services comprise everything else. The allocation of these costs is defined in the SAU Variation and summarised in the initial Cost Allocation Manual (CAM) (2 December 2022) in accordance with clause 2G.6.3 of the SAU Variation. The CAM describes methodology for costs allocated in accordance with cost allocation principles set out in 2C.6.2 of the SAU Variation and summarises NBN Co's network and access technologies; the products supplied by NBN Co (including Core Regulated Services and Competitive Services); and the role of cost allocation (including the Cost Allocation Principles and this CAM) under the SAU Variation. Should the SAU Variation come into effect, NBN Co must submit the CAM to ACCC for review.

NBN Co determines in the first instance whether a new or varied existing product or service is Core or Competitive, and NBN Co can also propose that an existing product or service is re-categorised as part of a Replacement Module Application. As part of an ACCC Replacement Module Determination, the ACCC may determine re-categorisation. Any party proposing re-categorisation must propose consequent allocation of BBM costs.

Costs are then allocated to Core, Competitive, or shared costs. Directly attributable costs are allocated to Core or Competitive Services. The remaining shared costs are allocated to reflect causal relationships between supplying services and incurring costs, unless establishing a causal relationship would require undue cost or effort in which case an alternative suitable allocator will be used. The allocation methods used are premises passed, premises connected or provisional bandwidth. Operating expenditure is allocated between Core and Competitive Services based on revenue proportions.

Table 3 below summarises each allocation factor.

Allocation Factor	Definition	Used to allocate	Methodology
Premises Passed (Available Footprint)	Actual or forecast total number of premises that are able to connect to an NBN Co Core Regulated Service or Competitive Service	Network assets that are planned around the footprint size rather than the number of active premises or active services	Number of premises passed by a given cost category in that year, divided by the total number of premises passed in that year
Premises Connected (Active Services)	actual or forecast number of premises with an active connection to an NBN Co Core Regulated Service or Competitive Service	Network assets that have port constraints or other capacity constraints around the number of end-users	Number of premises connected by a given cost category in that year, divided by the total number of premises connected in that year
Provisioned Bandwidth (Total Provisioned Bandwidth on the Network)	actual or forecast provisioned download capacity in respect of active NBN Co Core Regulated Services or Competitive Services	Network assets that are driven by throughput capacity or traffic growth	The amount of provisioned bandwidth in a year is calculated from the FY21 provisioned capacity per premises per cost category scaled by the number of premises connected. The provisioned bandwidth cost allocation factor by cost category in a year is calculated by taking the total amount of provisioned bandwidth in a given cost category in that year, divided by the total provisioned bandwidth in that year.

Table 3: Allocation Factors

The revised BBM calculates a Core Services RAB Portion, Core Services ABBRR, and Core Services ICRA, as well as a competitive RAB portion, a competitive ABBRR and a competitive ICRA allocation. This allocation between Core Regulated Services and Competitive Services includes further breakdowns of ABBRR elements including Core Regulated and Competitive capex, depreciation, opex and asset disposals, and a revised tax calculation.

4 IOP process and its relationship to the proposals made by NBN Co in the SAU Variation

NBN Co has based its (overall) expenditure forecasts for the First Regulatory Cycle on the IOP that underpins NBN Co's FY23 Corporate Plan, i.e., IOP23.

The actuals and forecasts from the IOP act as inputs to the BBM. The BBM reflects the calculations in the SAU and the principles in the Cost Allocation Manual (CAM). NBN Co has prepared an updated BBM to support its SAU Variation. The current SAU does not require cost allocation between services or product components, whilst the LTRCM BBM has been revised to include cost allocation.

The BBM receives its capex and opex values at an aggregate level from the IOP process. The differences in aggregate numbers presented are due to inflation factors for capital expenditure and operating expenditure and factoring in grants and movement in construction in progress for capex.

These forecasts are then calculated by asset and technology type for capex to split across core and competitive services, and allocated using revenue proportion for operating expenditure, as illustrated in Figure 3 below.

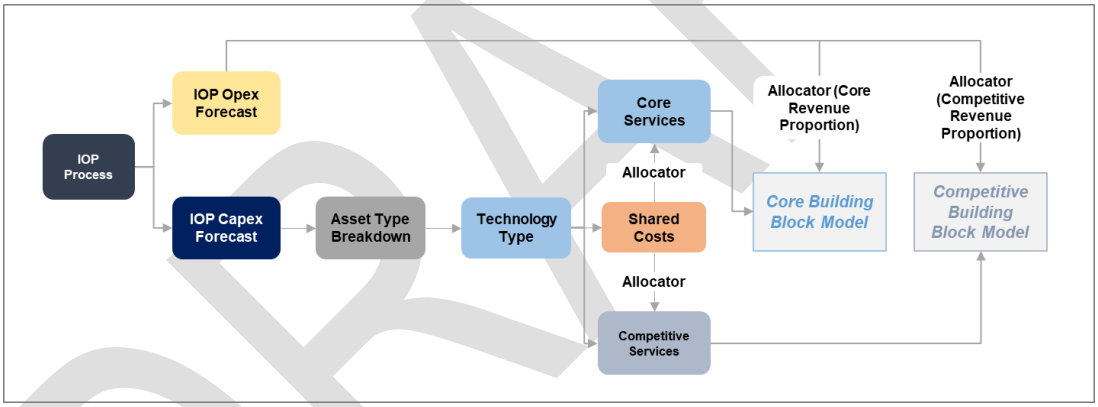

Figure 3: IOP & BBM Calculation Diagram

After the IOP is completed, each year there is a transition from planning to implementation, and NBN Co's expenditure governance processes are applied to all operating and capital expenditure.

5 Expenditure Forecasting[12]

NBN Co's Supporting Submission Part F of the SAU Variation[13] includes the product and network roadmaps, and descriptions of the technology initiatives that provide the context for the expenditure over the First Regulatory Cycle.

For the long-term and short- to medium-term demand forecasts, NBN Co maintains linked product and network roadmaps that extend out 10 years and are an input into the IOP development process.

The forecast has been summarised into five categories relating to capex and six categories relating to opex, described below[14].

5.1 Capital Expenditure[15]

The total capex between FY24 and FY26 is forecast to be 9.3% lower in real terms than the total capex between FY21 and FY23. The capex forecast comprises the following 5 categories:

Category	Summary
Expansion	After the last remaining parts of the initial build are completed, NBN Co will continue to invest capex to enable ongoing growth in the coverage of the NBN network to ensure premises in new developments are ready to connect as the population of Australia continues to expand. The capex in this category is associated with servicing new developments, which is driven by NBN Co's forecasts of construction commenced. Connecting individual premises to the network in the street is captured as part of Take-up & Usage. Approximately 12.7 million premises are forecast to be ready to connect to the NBN network by FY26. The incremental change is largely represented by an additional approximately 500,000 greenfield FTTP sites.
Take-up & Usage	Following the end of the initial rollout, capex required to connect premises migrating from legacy networks to the NBN network is forecast to taper off, but there will still be substantial ongoing capex required to connect individual premises on demand (in brownfield and greenfield areas) to the NBN network, undertake other continuing activities in relation to connection and service assurance, and to augment shared capacity with incremental growth to accommodate increasing usage per use of the NBN network over time. Forecast connections include new developments and take-up of NBN Co services on-demand. Forecast demand is related to upstream and downstream usage and traffic. Over the First Regulatory Cycle, NBN Co will connect

[12] "[CIC] NBN Co – SAU supporting submission – Efficiency of NBN's expenditure and demand forecasts – 16 December 2022 (***"SAU Supporting Submission Part F")***", Chapter 21.5.5, Product and network roadmaps, Page 25, **AND**, Chapter A.2.1, Capital Expenditure, Overview page 37-38

[13] "[CIC] NBN Co – SAU supporting submission – Efficiency of NBN's expenditure and demand forecasts – 16 December 2022 (***"SAU Supporting Submission Part F")***", Chapter 21.5.5, Product and network roadmaps, Page 25, **AND**, Chapter A.2.1, Capital Expenditure, Overview page 37-38

[14] "[CIC] NBN Co – SAU supporting submission – Efficiency of NBN's expenditure and demand forecasts – 16 December 2022 (***"SAU Supporting Submission Part F")***", Chapter 21.5.5, Product and network roadmaps, Page 25, **AND**, Chapter A.2.1, Capital Expenditure, Overview page 37-38

[15] "[CIC] NBN Co – SAU supporting submission – Efficiency of NBN's expenditure and demand forecasts – 16 December 2022 (***"SAU Supporting Submission Part F")***", Chapter A.2, Capital Expenditure 37-52

	approximately 688,000 premises to the NBN network across all technology types, increasing total activations to 8.9 million by FY26.
Maintaining	Given that the initial rollout of the NBN network has been completed, NBN Co does not face any major lifecycle replacements across the majority of the network over this forecast period. Maintaining capex largely relates to ongoing Copper Remediation for the FTTN network to offset asset degradation due to time and weather events. The forecast accounts for the effect of the Network Upgrade without which there would be a greater need for Copper Remediation over time. NBN Co will continue to maintain quality for premises served by all access technologies, including the FTTN network. This is further supported by the Benchmark Service Standards incorporated in the SAU.
Capability	This category reflects capex used to upgrade and increase the capability of the NBN Fixed-Line and non-Fixed Line network through the Network Upgrade Initiative, Fixed Wireless Upgrade Program, SMB Enablement Initiative and Regional Co-Investment Initiative. With respect to Fixed Line upgrades, Capability includes both the build (to roll out the Local Fibre Network in the selected footprint) and the connect (to build the fibre lead-in on demand). Driven by SOE and Government policy, and end-user demand and need for access to higher speeds. These initiatives, together with the Fixed Wireless Upgrade Program and Regional Co-Investment Initiative, will meet growing demand from end-users for access to higher speed TC-4 services and business-grade services over the period to FY26 and beyond. NBN Co will enable 3.5 million premises to migrate from the FTTN to FTTP network by FY26. In combination with upgrades on the FTTC network, 89% of Fixed Line premises will be able to order 1 Gbps services by December 2025. NBN Co will upgrade the fixed wireless network to enable access to 'typical busy hour speeds' of 50 Mbps (download). For download speeds[16], NBN Co plan to launch two high speed tier products: (1) Fixed Wireless Home Fast will enable all premises within the fixed wireless footprint to access download PIR speeds of 100-130Mbps, and (2) Fixed Wireless Superfast will enable approximately 85% of premises within the fixed wireless footprint to access download PIR speeds of 200-325Mbps.
Other	This reflects the ongoing operation of NBN Co and the NBN network – including IT, Systems Engineering, Network Engineering & Security, i.e., across several other categories, including IT (Software Engineering). Driven by Lifecycle management of supporting systems, and the addition of new system capabilities. NBN Co will complete an Enterprise Simplicity initiative to rationalise the number of systems, products and applications required to efficiently deliver services to end-users.

Table 4: Capex Forecast

[16] As provided in the document referred to in Part C as "NBN Commentary NBN Commentary 19 April", this report has been updated with new fixed wireless products and PIR speeds, superseding the original information provided in ""SAU Supporting Submission Part F", Table F7, page 38.

Refer to the figure and table below for a summary of expenditure across the different categories.

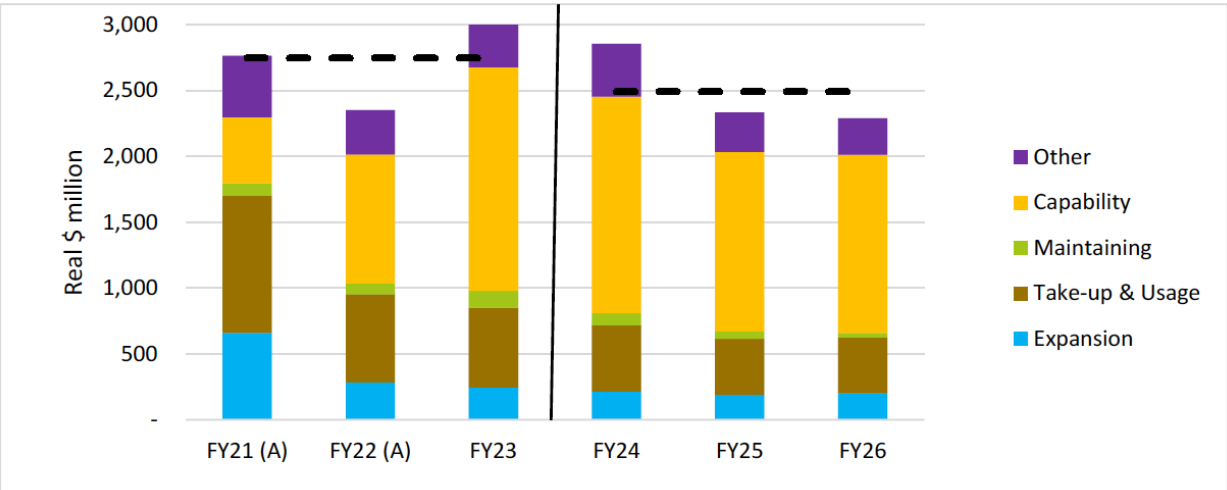

Figure 4: Capex by category, Real $million (June 2021) [17]

Capex by category	FY21 (A)	FY22 (A)	FY23	FY24	FY25	FY26
Expansion	660	286	245	215	191	201
Take-up & Usage	1,041	669	606	503	426	424
Maintaining	95	80	126	92	55	33
Capability	501	981	1,698	1,643	1,364	1,353
Other	468	334	450	402	300	276
Total Capex	**2,764**	**2,351**	**3,127**	**2,855**	**2,335**	**2,289**

Table 5: Capex by category, Real $million (June 2021) [18]

As described, a key focus for NBN Co across the categories above and forecast period is the progression and completion of the following five major initiatives.

1. Network Upgrade Initiative.
2. Fixed Wireless Upgrade Program.
3. SMB Enablement.
4. Regional Co-Investment.
5. Enterprise Simplicity.

These will deliver increased network capability to meet growing end-user demand, better quality of service, and ongoing efficiency gains.

[17] "[CIC] NBN Co – SAU supporting submission – Efficiency of NBN's expenditure and demand forecasts – 16 December 2022 (***"SAU Supporting Submission Part F"***)", Chapter A.2, Capital Expenditure 39

[18] "[CIC] NBN Co – SAU supporting submission – Efficiency of NBN's expenditure and demand forecasts – 16 December 2022 (***"SAU Supporting Submission Part F"***)", Chapter A.2, Capital Expenditure 39

5.2 Operating Expenditure[19]

NBN Co's forecast operating expenditure for the First Regulatory Cycle (FY24 to FY26) is based on NBN Co's IOP for FY22 to FY26.

NBN Co has described its latest significant transformation process. As a result of this process, and due to ongoing efficiency initiatives, the level and nature of operating expenditure activities described by NBN Co have not yet reached a steady-state level consistent with the ongoing operation of the NBN network. As such, NBN Co has asserted in the ACCC Briefings that the detailed activity-by-activity forecasting approach applied within the IOP process, and subject to NBN Co's governance processes, provides more accurate forecasts of required opex over the period to FY26 than potential alternative approaches.

With respect to top-down approaches, such as base-step-trend applied in other regulated sectors, NBN Co has described how it considers that such approaches are not currently appropriate for assessing opex levels in this First Regulatory Cycle given the transition and transformation NBN Co is undergoing[20].

Forecast operating expenditure has been summarised into six categories by NBN Co, relating to the purpose and nature of the expenditure:

1. **Infrastructure Payments:** Use (under Telstra Arrangements) of ducts, exchanges and dark fibre that form part of the NBN network. The rates are set out under long-term contracts with Telstra. Expenditure is driven by network size, and volume of infrastructure to be leased.
2. **Direct Operating Costs:** Operation and maintenance of the NBN network, excluding the cost of NBN Co's internal field workforce. This is largely influenced by asset management (Assurance, Restoration and Maintenance) activities, which are informed by the volume of network faults requiring truck rolls, and the agreed rates with Delivery Partners.
3. **Labour Costs:** Activities undertaken by NBN Co's internal workforce associated with the build and operations of the NBN network. Labour costs are influenced by the size of NBN Co's internal workforce and workforce strategy (i.e. headcount of FTEs and TSAs). Salaries are influenced by external economic conditions.
4. **Other Operating Costs:** Support of all other aspects of NBN Co's operations – including non-network facilities, IT and software costs, outsourced functions and insurance. This includes different cost items that are influenced by a range of factors including levels of ongoing transformation and the level of required support for capital works.

[19] "[CIC] NBN Co – SAU supporting submission – Efficiency of NBN's expenditure and demand forecasts – 16 December 2022 (***"SAU Supporting Submission Part F"***)", Chapter A.3, Operating Expenditure 52-63

[20] "[CIC] NBN Co – SAU supporting submission – Efficiency of NBN's expenditure and demand forecasts – 16 December 2022 (***"SAU Supporting Submission Part F"***)", Chapter A.3.1, Operating Expenditure page 52.

5. **Service Level Rebates:** Payments to RSPs where NBN Co fails to perform in accordance with its Service Level commitments. Driven by volume of activations (by technology type), volume of service assurance activities.
6. **Subscriber Payments:** Payments for disconnections from legacy networks under the Telstra Arrangements and migrations from legacy networks under the Optus Arrangements. Subscriber Payments are not forecast to be incurred in the First Regulatory Cycle