Transgrid

People. Power. Possibilities.

Network Property Renewal and Maintenance Strategy

AMS Asset Class Strategy

2020/2021

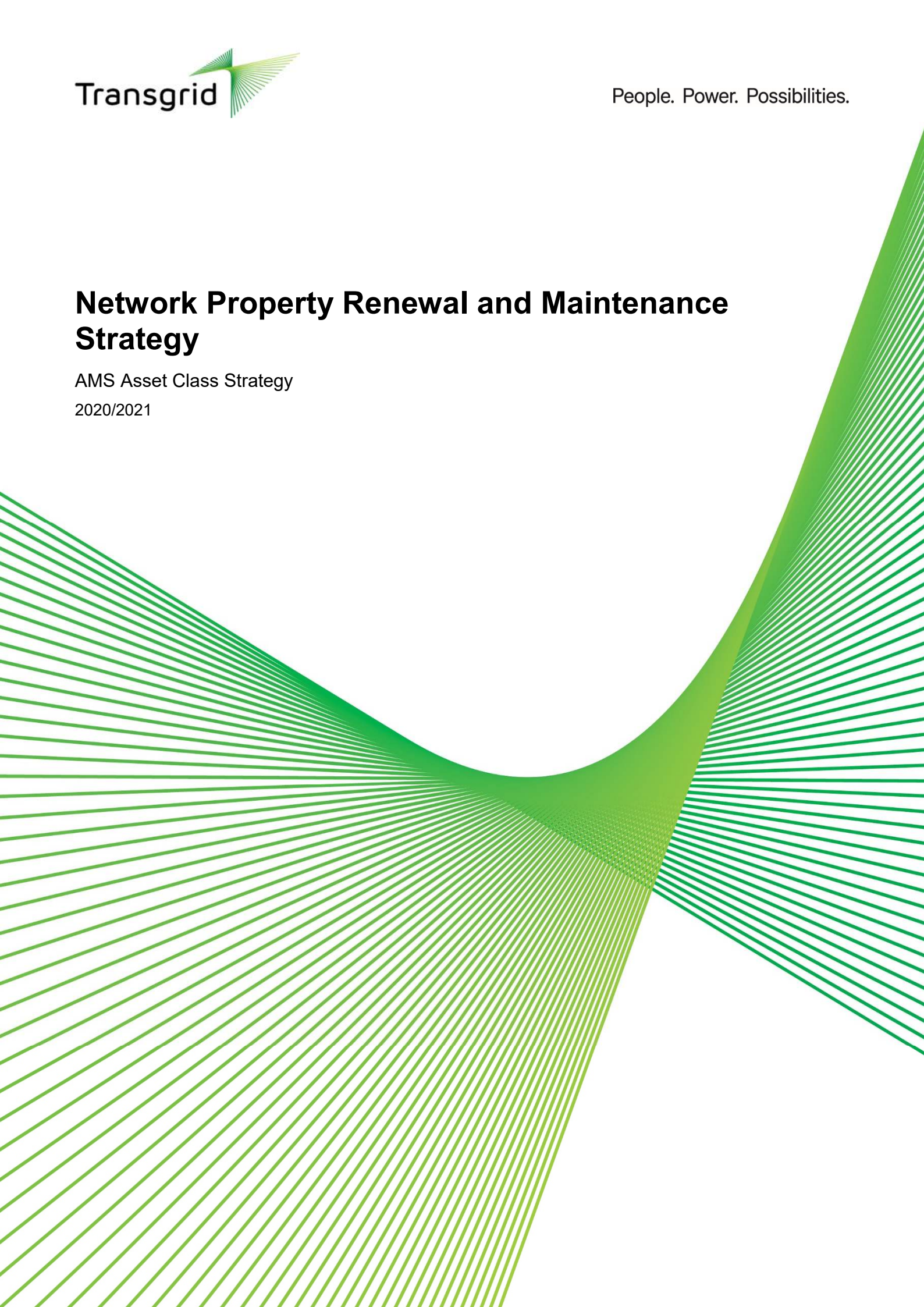

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Table 1 Change from previous version

Revision no	Approved by	Amendment
5	A. McAlpine A/ Head of Asset Management	New document structure. Review and update to deliver the 2021/22 AM Strategy and Objectives.
4	L. Wee Head of Asset Management	New document structure. Review and update to deliver the 2020/21 AM Strategy and Objectives.
3	L. Wee Manager/Asset Strategy	Review and update to deliver the 2017/18 Business Plan and further enhance the strategy. Breakdown into sub categories of assets.
2	L. Wee Manager/Asset Strategy	Review and update to deliver the 2016/17 Business Plan and further enhance the strategy.
1	L. Wee Manager/Asset Strategy	Separated into standalone document, review and update to deliver the 2015/16 Corporate Plan and further enhance the strategy.

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Executive Summary

Transgrid's network is made up of property assets covering over 150 sites and dating back to 1940.The aging asset base and increasing costs required to maintain fitness for purpose are presenting ongoing challenges. Asset condition information is being collected to better model asset health and ensure corrective and replacement activities are performed at an optimal time and cost.

Asset Review

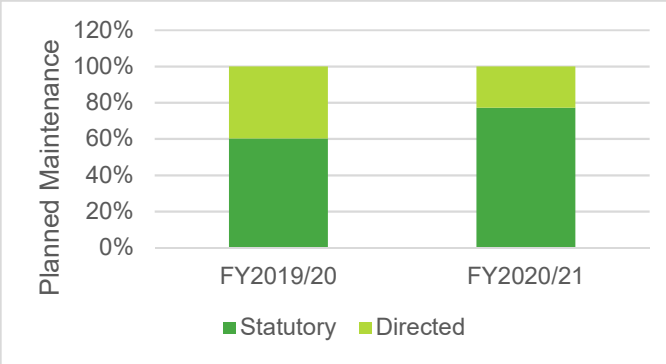
Transgrid's network property portfolio covers over 150 sites and all their associated infrastructure. These assets are a result of many different technologies, approaches and applicable standards.

The network property portfolio can be summarised as those assets which house and secure our electricity network assets to provide a safe working environment for our staff and ensure the reliable operation of our electricity assets.

During FY2020/21 network property assets underwent the following developments:

- Improved asset data and continued collection.
- Improved understanding of statutory activities

It has been established that over 70% of our property expenditure is driven by some level of statutory or regulatory obligation.



A single new site has been added to the network.

Achievements

In FY2020/21 Network Property achieved significant goals including:

- Enhanced portfolio level understanding of costs and maintenance requirements.
- Translation of new security standards into a delivery portfolio.
- Completion of accelerated Access Control upgrade.

Challenges

- Defects rates are exceeding available funding for correction.
- The linkage of property asset risks to the network assets they impact needs further effort.
- Achieving cost reductions and efficiencies with an aging asset base.
- Monitoring and improvement of systems to ensure consistent and accurate data capture by Transgrid or outsourced contractors.
- Alignment of systems for consistency between planned and corrective maintenance activities.

Initiatives

- Review of asset fitness for purpose
- Review of technology capabilities to improve asset monitoring and defect response
- Fire trail ownership audit
- Third party review of asset installation and maintenance requirements to meet legislative and regulatory obligations
- Third party review of APZ requirements

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1. Foreword

1.1. Foreword

This document defines the renewal and maintenance strategies for Transgrid's Network Property fleet. In doing this it applies the overarching asset management strategy and objectives, and relevant Lifecycle Strategies.

The document identifies the emerging issues with Transgrid's Network Property, and details the renewal and maintenance initiatives to be implemented in response to these issues. The output of the strategy is the asset management program of works, which is derived via distinct paths as follows:

- The renewal and disposal initiatives are considered through the Prescribed Capital Investment Process and managed through the Portfolio Management group, which then which then leads to the resource-optimised capital works program.
- The maintenance initiatives directly drive the maintenance regimes which are detailed within the relevant Maintenance Plan. The maintenance plans are then resource-optimised through Transgrid's Enterprise Resource Planning (ERP) system, Ellipse and supporting applications such as TRAC.

The strategies contained in this document cover the prescribed assets for a ten-year period from July 2022.

1.2. Overview

We have reviewed the historical technical performance and capital and operating expenditure for Network Property Assets within the network and we have determined that our current initiatives to date are in need of further investigation and investment to deliver value to our business.

Challenges are being faced by a reduced operating expenditure profile that cannot meet expenditure requirements to meet our statutory and regulatory obligations. We have a key initiative in place to achieve a third party review of property installations and confirm their alignment with our obligations.

Overall performance between FY2016/2017 and FY2020/21 has seen:

- An overall reduction in active capital expenditure
- A minimised maintenance portfolio to meet our performance requirements

A review of currently available property systems has identified a need for investment initiatives to modernise, standardise and consolidate deployed systems to facilitate our Strategic Objectives, these initiatives are estimated to cost:

- A committed $25 million in capital expenditure over the next three years
- A further proposed $53m over the following 7 years subject to our investment process

The proposed capital expenditure will assist in:

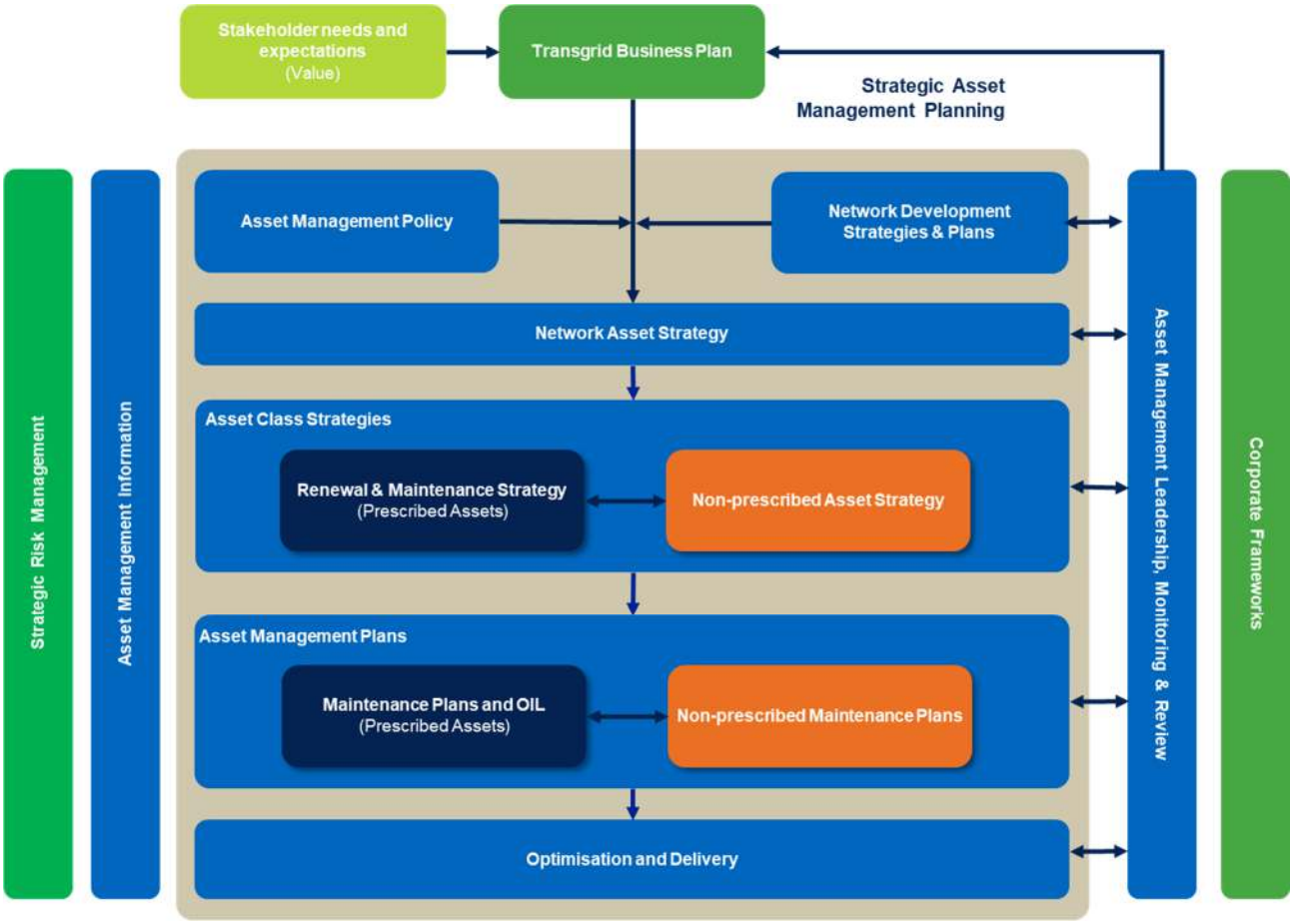
- Minimising cost impacts for corrective maintenance
- Limit the number of components in any system – effectively reducing lifecycle costs

2. Context and Background

2.1. Relationship to Asset Management Systems

This Renewal and Maintenance Strategy (RMS) document is one of several that comprise the Asset Management Strategies within Transgrid's Asset Management System. This document sits below the Network Asset Strategy document as shown in Figure 1.

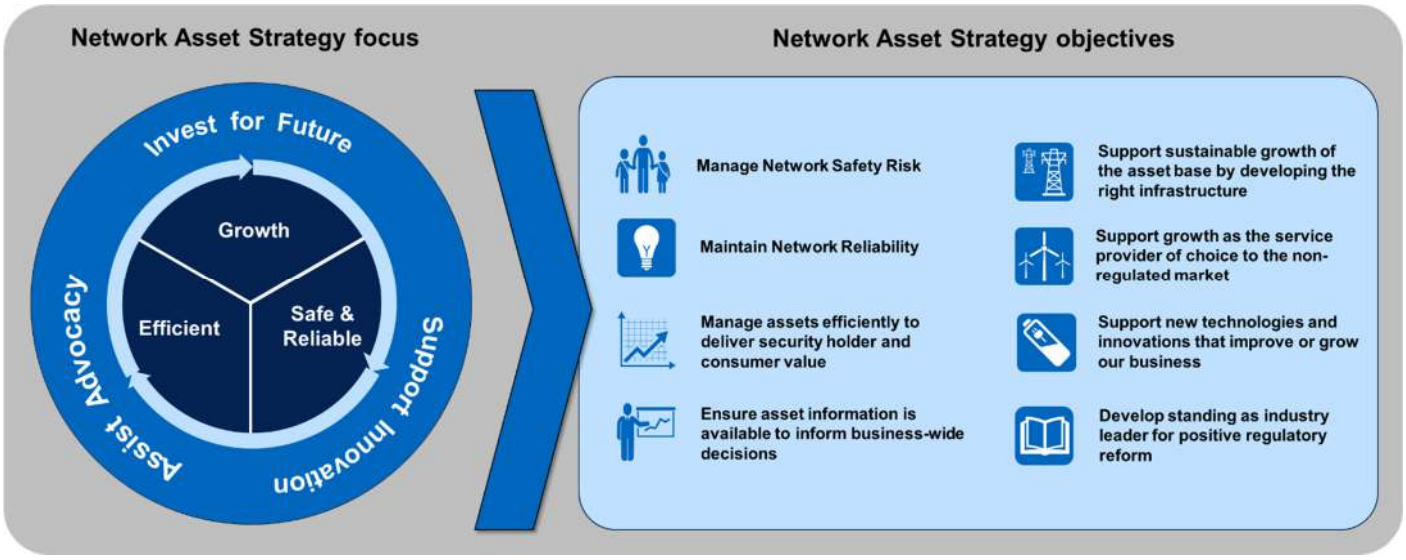
Figure 1 – Asset Management System Hierarchy



2.2. Asset Management Line of Sight

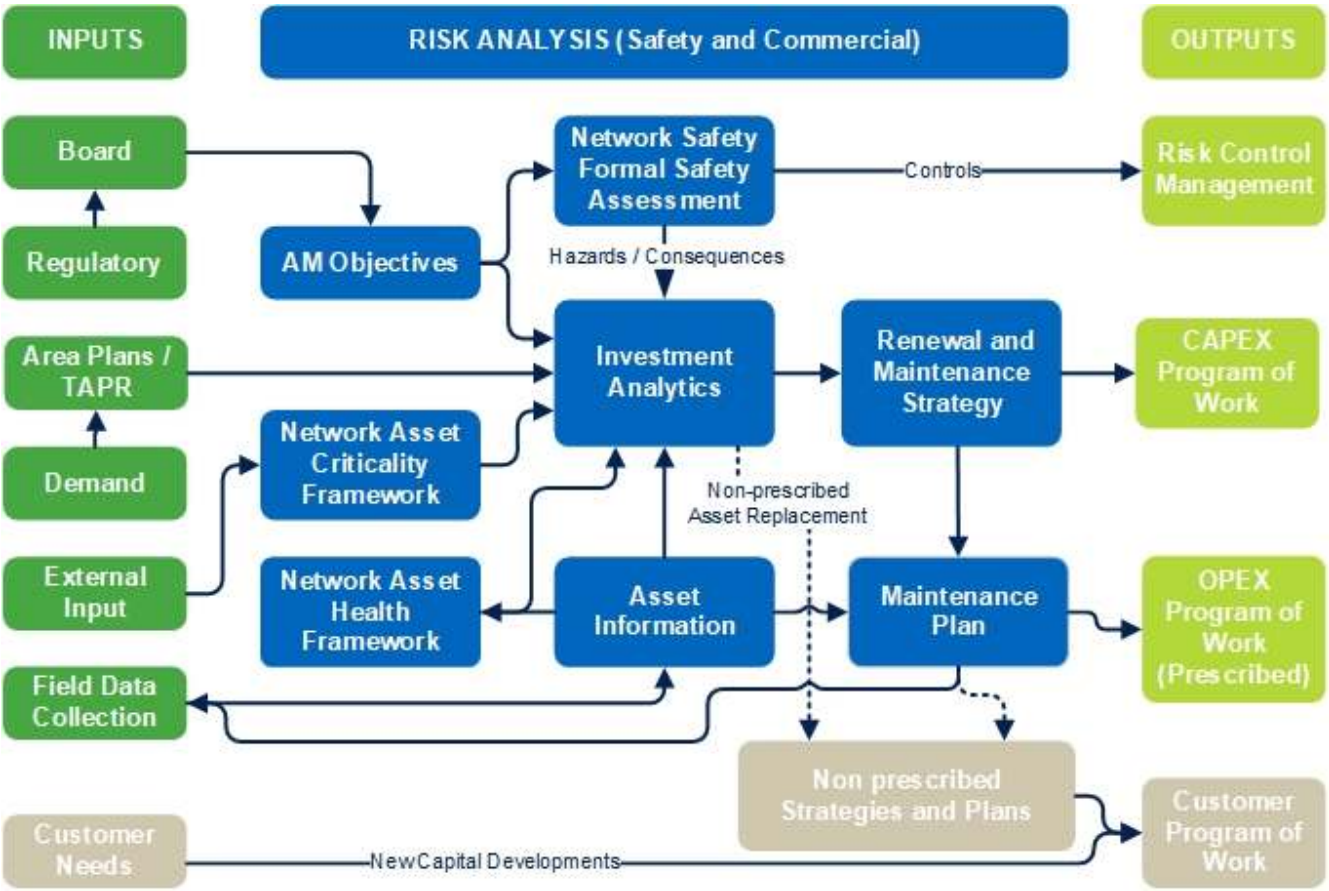
The renewal and maintenance strategic initiatives set out in this document support the achievement of the strategies set out in the Network Asset Strategy. The strategic alignment of the initiatives in this document to the Network Asset Strategy is based on meeting its strategic themes.

Figure 2 – Asset Management Strategy Key Themes


Network Asset Strategy focus
Invest for Future
Growth
Efficient
Safe & Reliable
Support Innovation
Assist Advocacy
Network Asset Strategy objectives
Manage Network Safety Risk
Maintain Network Reliability
Manage assets efficiently to deliver security holder and consumer value
Ensure asset information is available to inform business-wide decisions
Support sustainable growth of the asset base by developing the right infrastructure
Support growth as the service provider of choice to the non-regulated market
Support new technologies and innovations that improve or grow our business
Develop standing as industry leader for positive regulatory reform

2.3. Renewal and Maintenance Process Overview

Figure 3 – Investment Development Framework



2.4. Asset Overview

2.4.1. Scope of Assets

The following site types are within the scope of this strategy:

- Substations and Switching Stations
- Radio Repeater Sites
- Strategic Transmission Land

The following asset categories are within the scope of this strategy:

- Property (Land and Vegetation)
- Buildings
- Fire Protection Systems
- Physical Security Systems
- Hydraulic Systems
- Roadways

- Heating, Ventilation and Air Conditioning (HVAC) Systems
- Mains, Power, and Lighting (MPL) Systems – buildings only
- Fuel and Chemical Systems
- Pneumatic Systems
- Materials Handling Systems

The following assets are outside the scope of this strategy:

- Land Titles (management of licenses, titles, and leases)
- Metropolitan Regional Centre
- Newcastle Regional Centre
- Yass Regional Centre
- Tamworth Regional Centre
- Orange Regional Centre
- Wagga Wagga Regional Centre
- Ultimo Head Office

2.4.2. Property (Land and Vegetation)

The property asset category covers the physical land and vegetation associated with Network Property Assets. The property category has a virtually infinite life and is based upon the ongoing need for a site at a particular location. Property sites can be broken down into three types including:

- Substation and Switching Station Grounds
- Repeater Site Grounds
- Transmission Line Land holdings

Surrounding Grounds outside the perimeter of sites owned by Transgrid are considered as part of the site's property for the purposes of classification and quantification of assets.

Currently Transgrid's property quantities are summarised below. These numbers are subject to a detailed review to confirm ownership for a variety of historically ambiguous sites, the numbers provided should be used as indicative only at this time:

Table 2 Substation and Switching Station Property Asset Base

Responsibility Structure	Quantity	Description
Facilities and Land Management	105	Sites for which Transgrid has responsibility for facilities and land management over the entire site, usually through complete ownership of the site.
Limited Scope by Lease/License	4	Sites where Transgrid has management responsibility limited to facilities covered by a lease/licence
No scope	10	Sites containing Transgrid assets where Transgrid has no facility or land management responsibility

Responsibility Structure	Quantity	Description
Redundant Sites	1	Sites which are physically existent but have been decommissioned. Specifically this site is the old Tamworth 132kV (TA2) substation

Table 3 Radio Repeater Site Property Asset Base

Responsibility Structure	Quantity	Description
Facilities, Tower and Land Management	32	Sites where Transgrid owns the land and tower/pole
Limited Scope Land by Lease/License	37	Sites where Transgrid owns tower/pole (but not the land) and may have limited facilities management responsibility
Limited Scope Tower by Lease/License	1	Sites where Transgrid owns the land (but not the tower/pole) and may have limited facilities management responsibility
No scope	19	Sites containing Transgrid assets where Transgrid has no facility or land management responsibility

2.4.3. Buildings

Buildings are utilised at the majority of Transgrid's substation, switching station, and radio repeater sites for the purposes of housing and protecting network elements from the physical environment. Buildings throughout the network vary in materials and construction type including aluminium, brick, and concrete.

The numbers of buildings are estimates at this time and data improvements are foreseen to yield more accurate numbers in the future. The assets are comprised of three categories with different estimated technical lives for each as outlined below:

Table 4 Building Asset Base

System	Quantity	Description
Brick and/or Concrete	119	These are traditional buildings deployed until the late 2000s/ early 2010s. They consist of multiple rooms and resemble a traditional home in construction and materials. The anticipated technical life of these assets is 50 years.
Demountable	38	These are demountable aluminium buildings that are deployed in a swap in/swap out configuration for rapid renewal when required. These types of buildings have been in deployment since the 2000s. The anticipated technical life of these assets is 30 years.
Radio Repeater Sites	69	These are a mix of brick and/or demountable huts. Current works are in place to establish deployments in the network.

2.4.4. Fire Protection Systems

All of Transgrid's substation and switching station sites contain fire protection systems. Implementations vary from site to site and are generally comprised of the following components within the scope of this strategy:

Table 5 Fire Protection Systems Asset Base

Component	Quantity	Description
Fire Suppression	2372	These asset components form a means for extinguishing fires automatically, and are comprised of Water suppression and/or Gas suppression systems. The anticipated technical life of these assets is 30 years.
Portable Fire Suppression	1428	These asset components form a means for extinguishing fires while onsite, and are comprised of Portable Fire Extinguishers and/or Fire Blankets. The anticipated technical life of these assets is not quantified at this time.
Fire Detection and Warning	804	These asset components form a means for the detection and notification of fires automatically, and are comprised of Fire Indication Panels (FIP), Very Early Smoke Detection Apparatus (VESDA) and Smoke Detectors. The anticipated technical life of these assets is 10 years.
Passive Fire Protection	253	These asset components form a means for the passive mitigation of fire spread, and are comprised of Fire rated Doors and Fire Rated Penetrations. The anticipated technical life of these assets is not quantified at this time.

We are finalising the transfer of remaining fire protection assets under the scope of the Network Property portfolio. This involves the transfer of budget for required maintenance activities and will drive a complete review of our fire protection requirements and risk appetite in the coming years.

2.4.5. Physical Security Systems

We require and apply effective physical security arrangements to ensure:

- Protection of Transgrid's people, contractors and the public from foreseeable risks
- Ensure Transgrid's maintains reliable and economically efficient transmission services
- Transgrid ongoing commitment to strengthening Australia's Critical Infrastructure
- The potential for compromise of Transgrid's assets is limited

Implementations vary from site to site and are generally comprised of the following components within the scope of this strategy:

Table 6 Physical Security Systems Asset Base

Component	Quantity (Sites)	Description
Fencing	178	These asset components form a means for delineating secure areas and deterring and delaying unauthorised entry. The assets comprise Palisade and Chain Mesh installations dependent on the criticality of the site. The anticipated technical life of Palisade assets is 45 years. The anticipated life of Chain Wire assets is 25 years.

Fence Topping	178	These asset components provide additional security to fencing by providing a climbing prevention and deterrence that further delays unauthorised entry. These assets comprise Barbed Wire, Razor Wire and Electric Fence Topping. The anticipated technical life of Razor and Barbed Wire assets is 20 years. The anticipated life of electric Fence Topping assets is 10 years.
Access Control and Alarm Systems	119	These asset components facilitate the monitoring and access logging of our facilities and provide notification of unauthorised access. The anticipated technical life of these assets is 10 years.
Closed Circuit Television (CCTV)	94	These asset components form a means for the monitoring and viewing of site activities. I particular, they provide a means of reviewing activities at a site. The anticipated technical life of these assets is 10 years.
Locks	200+	These asset components form a means for the entry of a site or area during the unavailability of our Access Control and Alarm System. Historically, these have been manual locks which have recently been upgraded with intelligent locks that read RFID data from a programmable key. The anticipated technical life of these assets is 10 years.

2.4.6. Hydraulic Systems

Hydraulic systems are composed of multiple elements capturing the supply and disposal of water and waste within the network.

Implementations vary from site to site and are generally comprised of the following components within the scope of this strategy:

Table 7 Hydraulic Systems Asset Base

Component	Quantity	Description
Water Supply	428	These asset components form a means for the supply of freshwater to our sites. The assets comprise Backflow Prevention Devices, Valves and Hot Water Units. The anticipated technical life of these assets is not quantified at this time.
Safety Systems	52	These asset components provide safety functions from water sources and are currently limited to permanent Eyewash Stations. The anticipated technical life of these assets is not quantified at this time.
Water Treatment	116	These asset components facilitate the supply of clean water to sites and include pumps and filters. The anticipated technical life of these assets is not quantified at this time.

Infrastructure	66	These asset components cover the sewerage systems deployed at sites. The anticipated technical life of these assets is not quantified at this time.
Pumps	65	These asset components maintain water pressure as required for either fire mitigation or general use purposes. The anticipated technical life of these assets is not quantified at this time.
Sewer Systems	39	These asset components are legally maintainable sewer systems. The anticipated technical life of these assets is not quantified at this time.
Heater Systems	25	These asset components are legally maintainable hot water systems. The anticipated technical life of these assets is not quantified at this time.

2.4.7. Roadways

Roadways are available at all sites and cover those assets within our control facilitating vehicular access to and within our sites. A detailed audit of our roadways has not been completed at this time. These assets are comprised of the following categories:

- Driveways
- Site Internal Roadways
- Fire Trails

2.4.8. HVAC Systems

HVAC systems are primarily deployed throughout the network to maintain optimal operating temperatures for our high value assets. In particular, controlling temperature for our battery systems and communications systems is critical to maximising the life and performance of these assets. An additional function of our HVAC systems is for enclosed sites where ventilation is critical to ensure the safety of our people.

These assets are comprised of the following categories:

Table 8 HVAC Systems Asset Base

Component	Quantity	Description
Air Conditioning	1792	These asset components provide cooling and heating functions to maintain a consistent air temperature where installed. These components are often installed with redundancy and duty cycle in mind to ensure continued operation during a failure. The anticipated technical life of these assets is 10 years.
Heaters	79	These asset components provide heating. These components are often installed with redundancy and duty cycle in mind to ensure continued operation during a failure. The anticipated technical life of these assets is 10 years.

Ventilation	271	These asset components facilitate the movement of air either outwards from an area or inwards to the area. These components are deployed for NiCd battery rooms and indoor/underground sites. The anticipated technical life of these assets is 10 years.

2.4.9. Mains, Power and Lighting Systems

These assets are limited to the building and general access areas. They do not cover the switchyard electrical systems at this time. MPL is primarily deployed for the purpose of providing a workspace for people to perform their activities on-site.

These assets are comprised of the following categories:

Table 9 MPL Systems Asset Base

Component	Quantity	Description
Power Distribution	3165	These asset components provide the distribution of non-operational electricity supplies throughout a site where required. These assets comprise Distribution Boards and Residual Current Devices (RCD). The anticipated technical life of these assets is not quantified at this time.
Emergency Lighting	93	These asset components provide emergency lighting services to maintain a visible exit path during emergency situations. The anticipated technical life of these assets is 10 years.

2.4.10. Fuel and Chemical Systems

These systems are deployed for the safe management of hazardous fuels and chemicals. Within the operational network, these assets comprise the following category:

Table 10 Fuel and Chemical Systems Asset Base

Component	Quantity	Description
Gas Monitoring	29	These components are deployed at our GIS sites and monitor SF6 and Oxygen to ensure the safety of our people when working within the site. The anticipated technical life of these assets is 10 years.

2.4.11. Pneumatic Systems

These systems provide pressurisation capabilities and are deployed throughout the network in the form of Air compression. Implementations vary from site to site and are generally comprised of the following components within the scope of this strategy:

Table 11 Pneumatic Systems Asset Base

Component	Quantity	Description
Compressed Air	75	These components are deployed at various sites and are comprised of compressors and pressure vessels. The anticipated technical life of these assets is 10 years.

2.4.12. Materials Handling Systems

These systems provide a means of lifting and transporting heavy items. Implementations vary from site to site and are generally comprised of the following components within the scope of this strategy:

Table 12 Materials Handling Systems Asset Base

Component	Quantity	Description
Cranes	23	These components are deployed at various sites. The anticipated technical life of these assets is 20 years.
Hoists/Winches	17	These components are deployed at various sites. The anticipated technical life of these assets is 20 years.

2.4.13. Lift Systems

Lifts are available at multi storey and underground sites to easily transport people and goods as required. Implementations vary from site to site and are generally comprised of the following components within the scope of this strategy:

Table 13 Lift Systems Asset Base

Component	Quantity	Description
Personnel Lift	3	These components are deployed at various sites and are designed primarily for transport of people. The anticipated technical life of these assets is 20 years.
Goods/Service	1	These components are deployed at various sites and are designed with the capability to transport heavy goods. The anticipated technical life of these assets is 20 years.

2.5. Spares

Our current strategy for spares is to maintain holdings which are proportional to the installed quantities in the network as per practices specified in the Spares Policy. Additionally, we monitor the support availability for the different assets and a scale is applied as support is diminished. Due to the low impact of certain equipment outages on overall performance and the need for specialist skills for replacement or repair, many items do not require spares holdings and are acquired as part of the defect response

3. Current Performance

3.1. Review of Previous Renewal, Disposal and Maintenance Strategies

This section discusses the performance of the current prescribed asset base.

3.1.1. Historical Expenditure

Historical expenditure has been analysed from Transgrid's RIN submissions between FY2016/2017and FY2020/2021.

3.1.1.1. Capital Expenditure

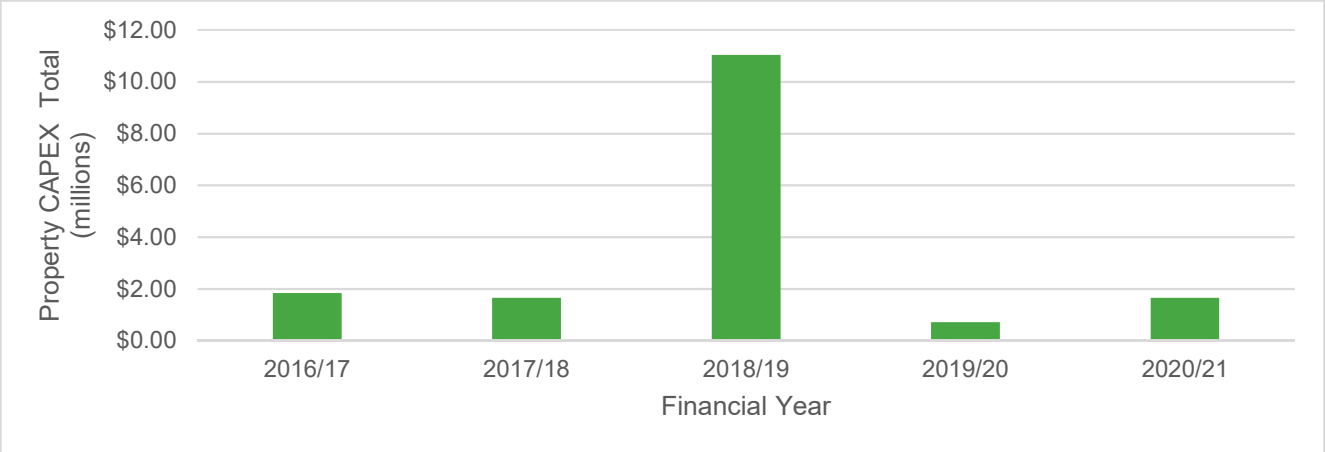
Previous initiatives identified the need to upgrade underlying infrastructure. Generally, initiatives have been targeted through the identification of significant failures. Many property issues have been addressed through targeted secondary system renewals where a building is vacated or rectified as part of a larger body of work.

Overall, there are four capital projects for property assets currently planned in the system:

- Access Card Security System Renewal – This project will renew our alarm and access control systems
- CCTV Renewal – This project will renew our aging CCTV asset base
- Motion Detector Renewal – This project will renew our ageing motion detector asset base
- Building Renewals – This project is targeting identified building roofing issues at various sites

FY2015/2016 saw the renewal of several depots, and no targeted expenditure for network sites

Figure 4 Total Historical CAPEX

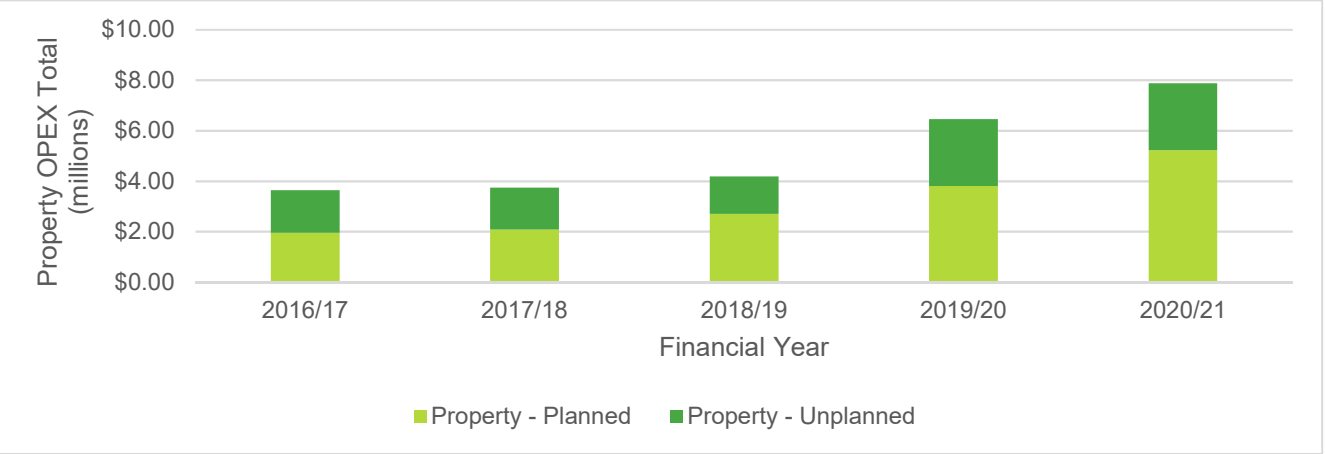


3.1.1.2. Operating Expenditure

Previous initiatives had targeted a review of our legislative and regulatory requirements for assurance that compliance related activities were being completed. These reviews have been achieved through several fronts:

- Visibility gains through collaboration with our maintenance delivery partners.
- Initiated and implemented improved data recording and asset information availability.
- Realignment of a number of maintenance activities including:
  - Electrical Systems
  - Fire Systems
  - Hydraulic Systems
  - Pneumatic Systems
  - Materials Handling Systems
  - Lift Systems

Figure 5 Total Historical OPEX



The increases in total expenditure highlighted above are believed to be a result of several factors:

- Investigations determined that Property Maintenance has historically been managed by different regions with no consolidated approach to budget, costing and reporting. Furthermore, the delivery method has been a mixture of internally resourced and multiple outsourced providers.
- FY2020/2021 saw the expenditure exceed budget and the subsequent emergency withdrawal of significant quantities of planned and corrective maintenance activities to meet budget constraints

A review of maintenance performance for property, actual versus budget costs, for FY2021 is shown in Table 14 below.

Table 14: Network Property maintenance expenditure FY2021

	Actual $	Budget $	Variance $
Routine Maintenance	$5,166,916	$3,265,422	$1,901,494
Inspections	$304	$-	$304
Condition	-$2,483	$1,000,006	-$1,002,486
Defect	$3,013,629	$1,550,000	$1,463,629
TOTAL	**$8,178,365**	**$5,815,428**	**$2,362,938**

Overall expenditure in this asset class exceeded allocated budget. This is the result of statutory obligations set by various legislative levels and the corresponding planned and corrective maintenance obligations. Furthermore, a mid-year stretch budget was applied and the resultant numbers were achieve through the re-allocation of funds from alternate budget within the AMPOW.

3.1.2. Review of Renewal and Maintenance Initiatives

Delivery of the existing Renewal and Maintenance Initiatives has continued to target the strategic objectives of Transgrid where the investment:

- can be shown to be in the best interest of consumers
- is required to add or maintain value to our stakeholders
- protects network performance and maintains our license

- supports future value and creates further opportunity

The inclusion of Network Property assets into the scope of the Asset Management System has led to an improvement in on-time delivery monitoring of maintenance activities and has removed the potential for inadvertent misrepresentation or misinterpretation of results within the system.

The transition of Network Property assets into scope of the Asset Management System has provided a clearer understanding of our maintenance obligations and effort required. Under the original deployment, the reported effort for maintenance appears to have been severely underestimated. The revised analysis has provided clearer visibility of activities improvement in completion rates:

3.1.3. Past Performance – Asset Management Performance Indicators

The KPIs that demonstrate the effectiveness of this Renewal and Maintenance strategy to mitigate the network related safety, reliability environment, financial, compliance and reputational risks in support of the achievement of the asset management targets and objectives are the number of Key Hazardous Events. These measures have been maintained at a low level historically, indicating the Renewal and Maintenance strategies have been effective at mitigating the risks and achieving the asset management objectives.

KPIs are represented across both prescribed and non-prescribed assets. Across all reportable exceptions applicable to the property portfolio.

We have endured one critical safety incident 2 years ago reportable to Safe Work Australia whereby a Palisade Gate had collapsed onto an Essential Energy employee. We have not incurred any incidents for bushfire planning and prevention.

Historical KPIs and objectives are shown in Table 15 below. Updated Objectives and KPIs are shown in Section **Error! Reference source not found.**.

Table 15 Asset objectives and performance indicators - Network property

Transgrid Strategic Theme	Asset Management Objective	Asset Management Performance Indicators
Deliver safe, reliable power	Manage Network Safety Risk	• Maintain Network Safety LTIs and Fire starts at zero *Achieved in FY2021*.
Deliver safe, reliable power	Manage Network Safety Risk	• No red reports in key result indicators provided to BARC regarding Bushfire, Reliability and Public Safety *Achieved in FY2021*.

Transgrid Strategic Theme	Asset Management Objective	Asset Management Performance Indicators
Create an efficient high performing business	Manage assets efficiently to deliver security holder and consumer value	• 7.8% reduction in AMPoW delivery FY2021 *AMWP budget outcome was met in FY2021. For asset class specific performance see Table 14 in Section 3.1.1.2.* • Achieve efficiency on regulated capital spend FY2021 *Targeted capital efficiency was achieved in FY2021 and reinvested into the business.*

3.2. Review of Strategic Initiatives

The status of relevant strategic initiatives from the Network Asset Strategy and other asset class specific strategic initiatives is provided in Table 16.

Table 16 Strategic Initiative Status

Network Asset Strategy Objectives	Initiatives / Reference	Status
Deliver safe reliable power		
Manage Network Safety Risk Maintain network Reliability	Implement a technical authority framework supported by competency assessment processes.	Scope of activities covered by the Technical Authority Framework has been developed. Technical Design competency framework developed with assessment process development underway.
	Review and revise Risk Assessment Methodologies to ensure our ability to quantify risk is both appropriate and balanced defensibly.	Risk Assessment Methodology has been updated and is under continuous improvement.
	Implement Critical Control Management for key areas of the business.	Ongoing
	Minimise numbers of deployed systems that pose safety risk	Ongoing
Create an efficient high performing business		

Network Asset Strategy Objectives	Initiatives / Reference	Status
Ensure accessible, relevant asset management information is available to inform business wide decisions	Continued collection of detailed asset condition data in AIM. Ready access to this data and integrating into the AAIT should empower the Asset Manager to make informed decisions. Improve asset performance monitoring through defect and AIM issue dashboards and analysis to inform asset strategies. Utilise newly implemented failure coding in AIM to allow better analysis and decision making.	Ongoing
Manage assets efficiently to deliver security holder and consumer value.	Control Assurance Reviews (CAR's) to identify weakness and non-conformances in cable asset management practices.	Two CAR's completed in FY2020/21.
	Development of information dashboards that provide relevant information to stakeholders to ensure asset management performance is accessible	Strategic risk dashboards have been implemented across operational and Executive committee meetings with further measures to be included in future iterations.
Invest in Transmission to support the energy transition		
Support sustainable growth of the asset base by developing the right infrastructure	Supporting the development of the Integrated System Plan and Renewable Energy Zone projects.	Ongoing - providing trusted advice for the development, procurement and design of new assets to achieve lowest lifecycle cost. Review and update of standard design manuals and IUSA functional specifications.
Support growth in our unregulated business		
Support growth as the service provider of choice to the non-regulated market	Supporting the development of non-regulated projects.	Ongoing - providing trusted advice for the bid and development of non-regulated opportunities. Non-prescribed maintenance plan developed. Works in progress to develop a non-prescribed spares plan.

4. Strategy

4.1. Strategy and Objectives

All strategic initiatives with respect to Transgrid's prescribed Automation assets are outlined in this section, including the renewal and maintenance initiatives that contribute to the asset management program of works. Further details can be found in the relevant Automation Systems Maintenance Plan, and the referenced governance documents.

Table 17 Asset management objectives and performance indicators – Network Property

Transgrid Strategic Theme	Asset Management Objective	Asset Management Performance Indicators
Deliver safe, reliable and low cost power	Manage Network Safety Risk	• Maintain Network Safety LTIs and Fire starts at zero • Maintain 5 year average level of High Potential Incidents (HPI): • Uncontrolled discharge of electricity • Third Party Activity resulting in asset damage / public injury • No red reports in key result indicators regarding Bushfire, Reliability and Public Safety Principal Risk Dashboards
Deliver safe, reliable and low cost power	Manage Network Safety Risk	Maintain 5 year level of environmental incidents
Deliver safe, reliable and low cost power	Maintain network reliability	Maintain 5 year average level of loss of supply events
Deliver safe, reliable and low cost power	Maintain Network Reliability	Target improvements to performance of the STPIS measures
Create an efficient high performing business	Manage assets efficiently to deliver security holder and consumer value	• Deliver AMPoW within +/- 5% • Delivery Capital Program within +/- 5% • Target capital efficiency improvements

5. Renewal and Maintenance Initiatives

5.1. Overall Initiatives

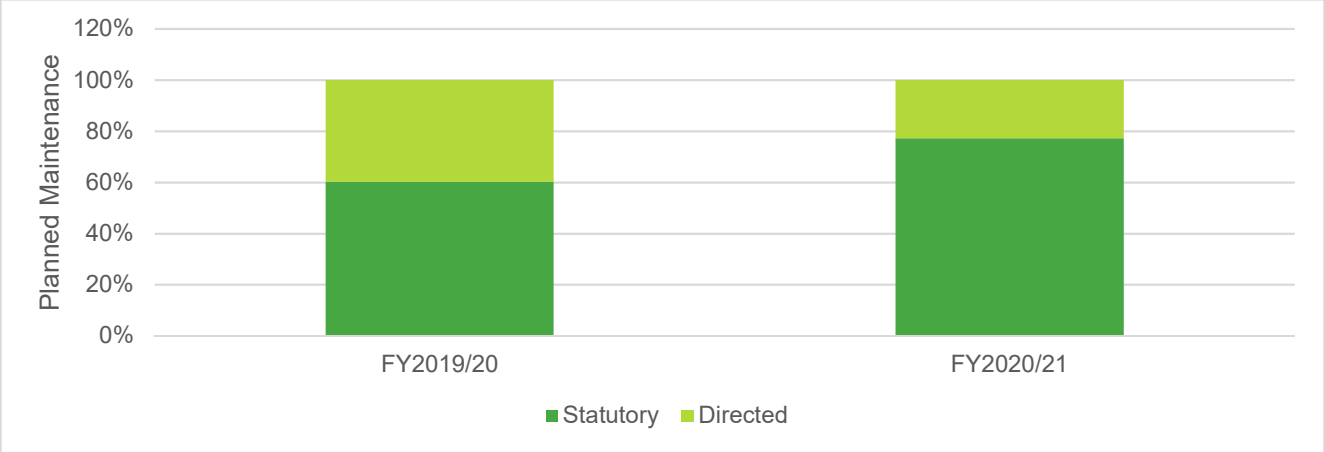
Our overall direction regarding Network Property is the move to a targeted renewal path and away from individual asset renewals upon defect detection where feasible. Due to the nature of Property assets and the heavy impact of statutory and regulatory requirements for the maintenance of installed systems, it has been identified that we would benefit greatly from reviewing the need for currently installed systems.

Implementation of a targeted renewal and disposal strategy is expected to provide the following benefits:

- Decreased corrective expenditure
- Normalisation of system health-profiles
- Minimisation of future capital write-off
- Decreased statutory and regulatory maintenance obligations
- Reduction in individual asset counts

The number of assets which carry statutory or legislative enforcement significantly outweighs those assets which are applying strategic maintenance activities to meet performance requirements. The breakdown is summarised below:

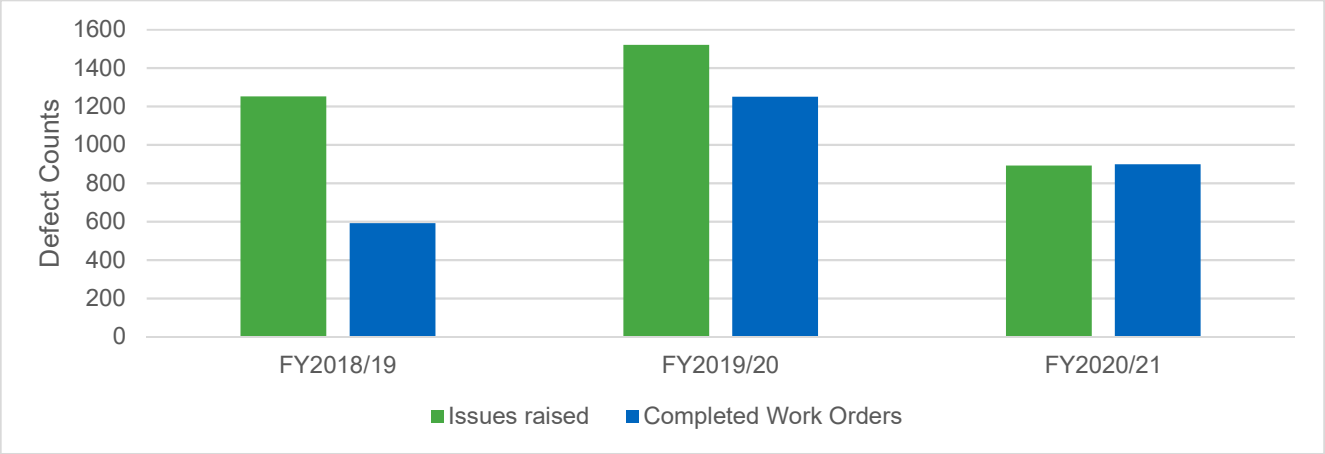
Figure 6 Planned Maintenance Requirement Summary



A detailed breakdown of active and planned renewal and maintenance initiatives is provided in Appendix A.

An analysis of defects raised has identified that the growth identified in FY2018/19 is indicative of the non-completion of planned preventative maintenance activities historically. There is a continuing issue of an under budgeted portfolio resulting in an ongoing gap between issues raised and work orders commissioned.

Figure 7 Issue creation rate verse work completion



5.2. Property (Land and Vegetation)

The current management of property is facilitated around the effective management of vegetation growth and statutory land obligations. We are specifically targeting the management of growth surrounding our bushfire prevention obligations and limiting the potential for fire ignition from within our properties and limiting the potential for damage to our assets from external fires.

The criticality applied for property maintenance aligns with our bushfire requirements and the categorisation of bushfire prone land.

5.3. Buildings

These assets have been targeted for minimal capital investment to refurbish and maintain their fitness for purpose with six sites planned for completion in RP2. We have initiated dilapidation reports to investigate and recommend corrective works that are needed to uplift our buildings.

Until FY2017/18 we had annual building inspections in place for the review of building capability and to facilitate the trending of building issues to help identify a renewal path. This was not delivering value to our business due to incomplete inspections.

A review of defects identified has uncovered a significant increase in damaged components to our buildings including roof leaks, door damage and tile damage. It has been determined that many of these defects cannot be addressed through preventative maintenance and that a targeted refurbishment program is required to effectively manage emerging issues within the network.

5.4. Fire Protection Systems

These assets have not been targeted for any renewal program to address the age and condition. We face additional challenges whereby Fire System maintenance is a statutory requirement where installed. The inclusion of Network Property into the Asset Management System has assisted in the improved understanding of our fire systems within the network and their requirements.

An analysis of defects has determined that fire panels and pumps systems form a majority of our defects year on year. These components require a targeted approach for their renewal to mitigate the significant expenditure from our corrective maintenance budget.

We have further identified that our currently installed VESDA systems, while displaying end of life defects, have been set to maximum sensitivity. This is not an ideal configuration due to the nature of our sites. This has been addressed through correction on defect callouts.

We have, through improved information collection in collaboration with our delivery partners, a more holistic view of our installed asset base. With over 3800 Fire Systems components units in the network (increase from our rudimentary view of 108 Fire Systems). A review and subsequent direction will be set regarding these assets.

5.5. Physical Security Systems

These assets have historically been managed individually and without any holistic vision or direction covering the underlying functionality. It was recently identified that many of our physical security components are either end of life, such as our CCTV and Access Control systems, whereby no more manufacturer support or cross compatibility is available, or that certain aspects deployed may no longer be providing value for the business against the costs to be incurred or additional safety issues posed, such as palisade systems.

Analysis of defects identified has determined that the increases in FY2018/19 onwards was largely due to the historical inactivity of defect rectifications. Many issues raised between FY2015/16 and FY2017/18 not being actioned and remaining open within our systems, resulting in a low number of newly created issues.

Overall trends are showing that the electronic systems we have in the network are beyond end of technical life and require broader mitigation measures. A recent incident has identified the risks posed by our palisade systems for fencing and particularly gates. Due to their weight, these gates have become a safety hazard requiring regular maintenance. The condition of our gates is in excess of their age profiles and indicates a medium term requirement to investigate the potential for refurbishment or renewal these assets.

5.6. Hydraulic Systems

These assets have not been targeted for any renewal program to address the age and condition. We face additional challenges whereby certain Hydraulic System maintenance is a statutory requirement where installed, particularly components such as regulating valves, pressure affected components, certain sewerage components and freshwater components. The deployment of a Facilities Contractor has assisted in the improved understanding of our hydraulic systems within the network and their requirements.

A review of defects identified in the last financial year has determined a significant number of issues being raised that are a result of compliance requirements with various legislative and regulatory bodies. In particular, fresh water supplies require significant amounts of regulatory activities, our review has determined that some of this compulsory activities can potentially be mitigated through the removal of the assets.

Due to the nature of water systems and their statutory and regulatory implications for maintenance, these systems would benefit from a review of their applicability. Such a review is foreseen to determine which

installations could be withdrawn from service to mitigate the imposed operating expenditure where they exist.

It has been identified that there are certain obligations for the following systems surrounding regular maintenance:

- Backflow prevention devices
- Potable water filtration
- Hot water systems and valves

5.7. Roadways

These assets have not been targeted for any renewal program to address the age and condition. We face additional challenges whereby corrective fixes are having a limited long term impact on the surfaces. Roadways pose a safety risk to our people as these are the primary access point for site accessibility.

Defects raised are all due to the wash-out of roadways leading to potholes and rough driving surfaces. There is additional risk recently identified around owner ship and responsibility of fire trails, it is an area that will be under investigation in the upcoming few years.

A review of the possible reasons surrounding the spike in FY2016/17 has determined that the increase was likely due to improvements in recording of issues and the record rainfall as summarised by the Bureau of Meteorology.

5.8. HVAC Systems

These systems have been historically managed individually and without any holistic vison or direction across all components. One of the key differentiators of these systems is that they are specifically installed for the operational assets at each site. Their function is to maintain the operating temperature of the area to ensure the longevity of our various Digital Infrastructure Assets.

The majority of defects are identified against air conditioning units. We have determined through detailed analysis that in many instances, A/C infrastructure has either been installed incorrectly or the system has had its temperature settings adjust manually and left the redundant installations hunting each other's set-points.

We have, through the collaboration with our service delivery partners, improved our asset data and developed a holistic view of our installed asset base. With over 900 A/C units in the network (increase from our previous view of 192 A/C systems). A review and subsequent direction will be set regarding these assets.

There is the potential for investigation into industrial cooling systems as a viable alternative to standard air conditioners as currently deployed.

5.9. MPL Systems

These assets have not been targeted for any renewal program to address the age and condition. We face additional challenges whereby certain MPL System maintenance is a statutory requirement where installed,

particularly components such as Residual Current Devices (RCD). The deployment of a Facilities Contractor has assisted in the improved understanding of our MPL systems within the network and their requirements.

We have applied a clear delineation between Network Property Assets (Mains Power and Lighting for general use) and Automation Systems AC distribution (Switchyard power and lighting). This delineation has been applied to facilitate the definition of applicable practices to each area, specifically determined by the risk profile of each component.

Defects have been largely driven by lighting issues at various sites. It has been determined that due to a lack of modernization, we have increasingly obsolete technology deployed at sites with installations still running on fluorescent lighting in certain cases.

We have, through the collaboration with our service delivery partners, improved our asset data and developed a holistic view of our installed asset base. With over 3000 MPL units in the network comprising a true count of RCDs and Switchboards (increase from our previous view of 409 MPL systems).

5.10. Fuel and Chemical Systems

These systems are comprised of Oxygen (O2) and Sulphur Hexafluoride (SF6) monitoring equipment located at various sites where we have deployed Gas Insulated Switchgear (GIS). These are a recent addition to the strategy.

We currently do not have any defect data for these assets, however we have successfully started monitoring the condition of these assets with a view to improve information and analysis capabilities.

We will initiate a detailed review of these systems and their expected performance and functionality and determine a suitable direction.

5.11. Pneumatic Systems

These assets have not been targeted for any renewal program to address the age and condition. We face additional challenges whereby certain Pneumatic System maintenance is a statutory requirement where installed, particularly components such as pressure vessels and compressors. We are developing a roadmap to review the need for these systems and how we address their condition.

We have implemented the requirement of maintenance of systems to meet regulatory requirements as part of the latest Maintenance Plan. We will continue to improve the direction regarding these assets.

We have, through the collaboration with our service delivery partners, improved our asset data and developed a holistic view of our installed asset base. With over 70 pneumatic units in the network comprising a true count of compressor and (increase from our original view of 0 pneumatic systems).

5.12. Materials Handling Systems

These assets have not been targeted for any renewal program to address the age and condition. We face additional challenges whereby certain Materials Handling System maintenance is a statutory requirement where installed.

There have been minimal defects identified and a recent analysis has determined that this is likely due to the consistent preventative maintenance program applied to these assets. Crane systems are unique in our portfolio in that their maintenance effectively prevents future damage.

5.13. Lift Systems

Lift systems carry with them a safety obligation for maintenance that adheres with the manufacturer's recommendations. This is a regulatory position held through the WHS Act and various legislative instruments.

We have only 3 lifts that form part of the Operational Network. These systems are only installed where a unique site arrangement contains multiple levels.

A review of defects within the system has identified a potential issue with the Haymarket Lift due to leaks leading to water ingress in the elevator shaft. All other issues in the system are reflective of random minor faults resulting in the callout of a lift professional to restart the system.

5.14. Emerging Issues and Renewal and Maintenance Initiatives

The emerging issues and renewal and maintenance initiatives to address them are summarised in Appendix A.

5.14.1. Property (Land and Vegetation)

We propose a continued review of land and vegetation management practices to fine tune our frequencies and quantity of land managed. One key emerging issue is that we do not currently have a maintenance activity associated with our boundary components.

These boundaries are generally the larger portions of land which fall under our ownership yet have no direct impact on or network assets. The key driver for this body of work is the review of our statutory obligations, in particular, the mitigation of fire risk if required.

5.14.2. Buildings

We have initiated a state-wide renewal of the majority of network buildings. This is inclusive of substations, switching stations and fibre and radio repeater sites. It is foreseen that our maintenance strategy will not significantly change in the upcoming years. However, our capital investment strategy will be driving significant expenditure to address the poor condition of our assets.

5.14.3. Fire Protection Systems

We have been witnessing a significant number of defects in this grouping of assets. It has been further identified that many callouts could have been avoided due to the nature of the alarm and that we are missing information to allow responders to decide upon the optimal rectification approach.

We will be continuing to pursue the following activities to start to address our fire protection systems:

- Renewal program to target fire system components that have reached end of life
- Investigation into the connection of fire indication panels to our Asset Monitoring Centre

- Reduction in the sensitivity of our installed VESDA systems to align with the type of environment they are installed
- Coordination with state fire services, fire system experts and our insurance providers to establish fire system requirements that are better suited to meet our unique fire prevention and fighting requirements and practices.
- Continued improvement of our asset information

Through these initiatives we will ensure the efficient delivery and operation of our fire protection systems.

5.14.4. Physical Security Systems

We are in the process of delivering a targeted security refresh across our most critical sites. We have recently published a rigorous Physical Security Design and Construction Manual which covers all aspects of our physical security requirements.

The following initiatives have been placed to ensure our physical security systems meet their intended purpose:

- Re-scoping of our renewal program to address cost variations from original estimates for CCTV and Access Control programs
- Renewal program for security installations not under delivery in RP2
- Renewal program to address motorised gates
- Renewal initiative to address gates with slings attached

5.14.5. Hydraulic Systems

It has been identified that we face several statutory obligations regarding the delivery and maintenance of our hydraulic systems. Of key note is the recent finding regarding the obligation for maintaining our hot water systems and valves and filtration for potable water supplies.

We have determined that our unmanned sites no longer require hot water systems as is our policy for the construction of new sites, and that potable water is commonly delivered through standalone water coolers with refills forming a part of maintenance crew's supplies. These activities have not formed part of our current and historical maintenance regime.

As such we will continue pursuing the following activities to mitigate expenditure in these areas:

- The withdrawal of hot water systems from substations
- The removal of potable water from fixtures where currently available and the application of appropriate signage

5.14.6. Roadways

We have discovered a gap in our maintenance activities regarding fire trails which provide access to many of our more remote sites, especially radio repeater sites. These are a unique and complex asset with very difficult accessibility and limited capacity for planned maintenance due to their remoteness and the lack of control over surrounding vegetation.

We will be pursuing the following activities to address these assets:

- A review regarding ownership and responsibility
- Development of a maintenance regime to address condition
- A renewal initiative for the most severely affected of these assets

5.14.7. HVAC Systems

These systems have been maintained regularly with a renewal approach based on defects only. This approach is displaying a need for a more efficient and targeted approach. Of key note are several findings of inadequately designed/positioned systems and the common occurrence of manipulation of temperature settings causing the systems to fail early.

We are continuing the following activities to address some of the identified issues:

- A lockout of our temperature control units to minimise exposure to changes by staff resulting in overburdening of systems and competing settings
- A review of the design approach for positioning of systems

5.14.8. MPL Systems

Our mains power and lighting installations across the state are of varying ages and standards. We face a continuing challenge regarding the delivery of safe power and lighting for our staff and visitors.

We have effected changes in this area through the delivery of a maintenance program to ensure that our protective devices meet our statutory obligations, specifically our RCD installations. We have determined that the maintenance of yard based RCDs is beyond practicable and as these are not consistently applied, current policy set by the business is to deploy staff with portable RCDs for working in the switchyard.

Due to the wording of regulations, we are proposing to withdraw yard based RCDs from service. However, this will require significant consultation with HSE, Delivery and LGR regarding its validity.

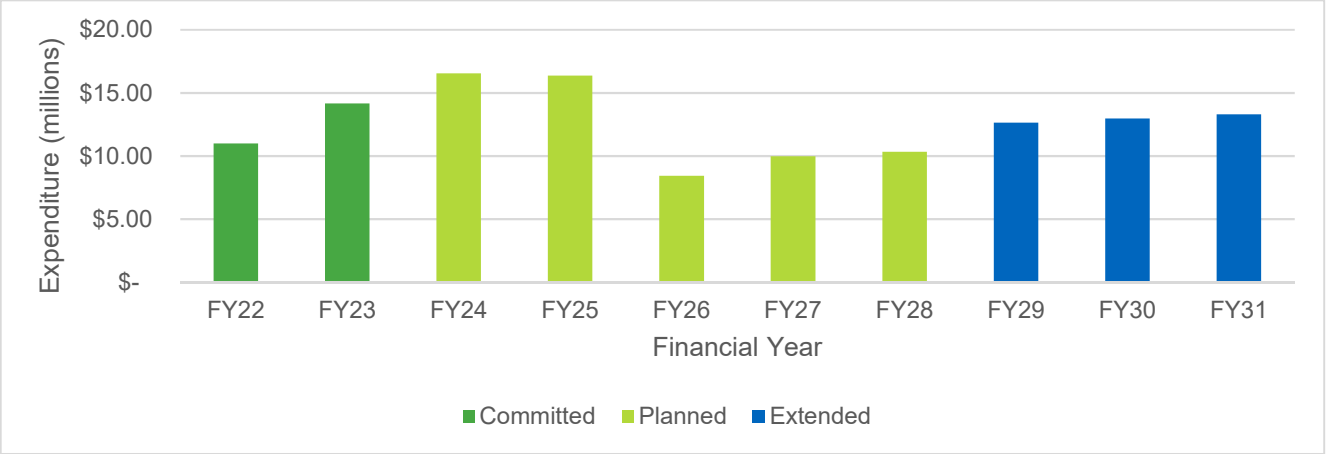
6. CAPEX Forecasts

6.1. Ten Year CAPEX Profile

Currently the ten-year CAPEX profile covers all replacement expenditure forecast and proposed for all Network Property assets.

The committed forecast is a bottom up build of all capital expenditure currently in the Capital program of works excluding any works that may be part of a Secondary Systems Renewal resulting in property refurbishments. The planned forecast is a top down build of systems recommended to be targeted that have not been progressed at this time and are subject to our investment process. These use an average of project cost from current and historical defect rates with a project management overhead. The figure highlights committed and planned expenditure.

Figure 8 Ten Year CAPEX Forecast



The data above represents a total expenditure profile of $25m of committed expenditure with planned further expenditure of approximately $60m planned for RP3. All investments remain subject to our investment processes prior to commitment:

- Completion of a state-wide security renewal
- Fire protection systems renewal
- Building renewal
- Gate renewal

6.2. Anticipated Changes to the Asset Base

It is anticipated that the proposed expenditure profile above will result in a safer and more operationally efficient network. This expenditure represents the modernisation of otherwise obsolete and unsafe design and implementation methodologies that currently limit the potential for efficient work practices during the attendance to any of our sites for Operational activities.

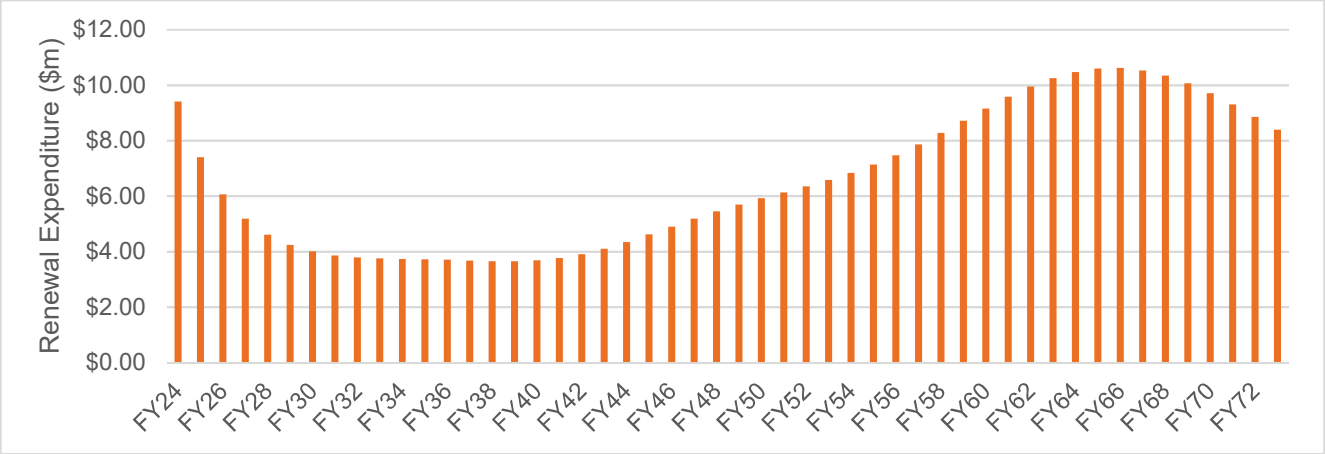
Through the efficient deployment of capital, we anticipate the following benefits:

- Improved security posture including visibility of activity and processes
- Improved management of security policies by leveraging technologies to minimise manual intervention
- Reductions in corrective maintenance expenditure by addressing ageing assets
- Efficient delivery of corrective maintenance through increased visibility of assets and issues

6.3. Long Term - REPEX Investment Framework

The 50 Year REPEX model is used by Transgrid to create a 50 year forecast, which is based on expected asset lives, standard deviations and unit costs. The assumptions within the model are based on industry standard information. This forecast includes REPEX volumes, costs and consequential average life profiles but no other consequential inputs/outputs (such as reliability and asset health). It does not include augmentation expenditure. The following output is derived from the FY2020/21 model.

Figure 9 Network Property Long Term CAPEX



RP2 (FY2018/19 – FY2022/23) has been excluded as it is currently in an active system with committed works using a bottom up approach through our asset analytics tool using a number of financial and non-financial (risk) inputs.

7. OPEX Forecasts

7.1. Discussion of significant changes to Maintenance Plan

We are currently maintaining our assets to almost all applicable statutory and regulatory requirements. Those assets that are categorised as strategic are reviewed annually with only minor changes to maintenance activities.

There are no key changes to planned activities in the maintenance plan at this time.

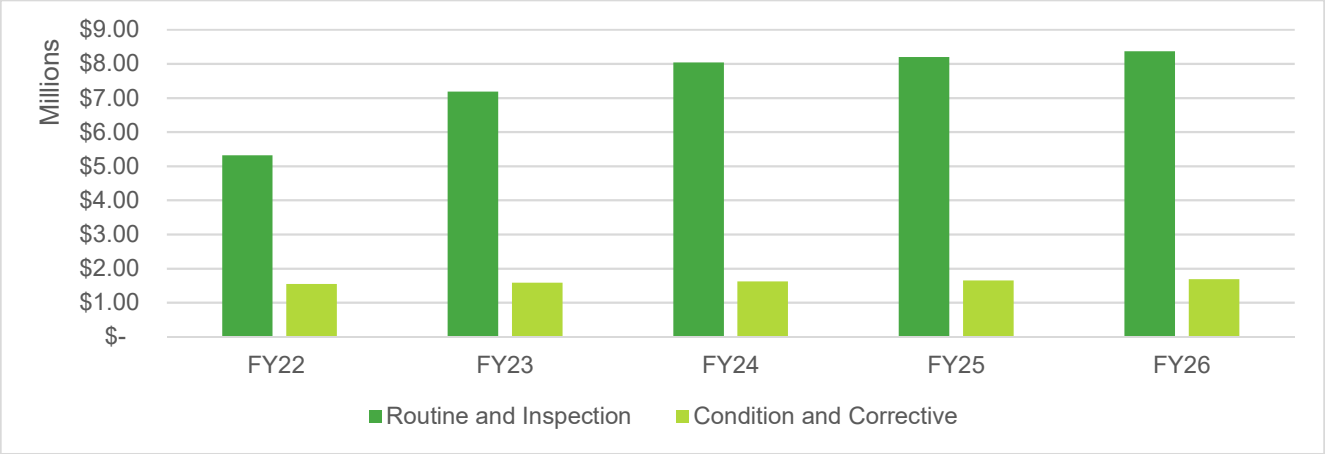
The key changes to our corrective activities in the maintenance plan include:

- Establishing risk quantification to corrective activity types to assist with prioritisation
- Monthly reviews of expenditure profile to target deferrals in alignment with budget constraints

7.2. Forecast OPEX Profile

The current OPEX profile highlights the proposed expenditure for FY2020/21 with a breakdown based on the statutory and strategic profiles.

Figure 10 OPEX Forecast



7.3. Long term OPEX

The current initiatives are foreseen to maintain the long-term OPEX at a relatively consistent rate. It is expected that there will be minor peaks and troughs in expenditure, these fluctuations are the result of maintenance frequencies and convergence of various install dates.

However, it is noted that the maintenance contract for Network Property has been issued for tender by our procurement partners. In its current conditions, the forecast for Operating Expenditure cannot be established as pricing from bids has not been provided. We are monitoring the progress of the tender process and will adjust our strategy accordingly.

The current and proposed initiatives are aimed at delivering efficiencies in OPEX expenditure through the removal of zero value components, and the whole of system review and analysis of performance to facilitate predictive maintenance. This will lead to a more predictable and consistent expenditure profile throughout the year and should minimise the probabilities of missed or unexpected activities due to systemic issues.

8. Implementing the Strategies

To implement the strategic renewal and maintenance initiatives stemming from this document, actions are to be established via the:

- Maintenance Plan – Network Property: The maintenance plan outlines the routine maintenance tasks and frequencies for each asset type.
- Capital Works Program: The capital works program outlines the approved asset renewal and disposal projects.

The Asset Manager is responsible for preparation of the maintenance plans and referring the renewal and disposal initiative to the network investment process. Works Delivery/Maintenance Programs is responsible for delivering the maintenance plans as per the Operating Model and Network Planning and Operations/Project Delivery are responsible for delivering the renewal and disposal initiatives detailed in the approved capital works program.

9. Definitions

Table 18 Definitions

Term	Definition
Asset Management Objectives	• Specific and measurable outcomes required of the assets in order to achieve the Corporate Plan and objectives; and/or • Specific and measurable level of performance required of the assets; and/or • Specific and measurable level of the health or condition required of the assets; and/or • Specific and measurable outcomes or achievement required of the asset management system.
Key Hazardous Events	They events of most concern associated with the assets that prevent the achievement of the corporate and asset management objectives.
Emerging Issues	Newly identified issues with an asset that pose a risk to the achievement of the corporate and asset management objectives.
Fault Outage	AER defined term - Fault outages are unplanned outages (without notice) on the prescribed network from all causes including emergency events and extreme events.
Forced Outage	AER defined term - Forced outages are outages on the prescribed network where less than 24 hours' notification was given to affected customers and/or AEMO (except where AEMO reschedules the outage after notification has been provided). Forced outages exclude fault outages.
Asset Management Plans	Documents specifying activities, resources, responsibilities and timescales for implementing the asset management strategy and delivering the asset management objectives.
RP1	Regulatory Period 2014/15 – 2017/18
RP2	Regulatory Period 2018/19 – 2022/23
RP3	Regulatory Period 2023/24 – 2027/28
Preventative Maintenance	Maintenance activities carried out to inspect and prevent assets from failing.
Corrective Maintenance	Maintenance activities carried out to address an asset condition that requires remediation.

10. Document Management

10.1. Monitoring and review

Implementation of the Strategy is monitored and reviewed by the Asset Manager, Head of Asset Management and Asset Management Committee annually.

This document will be reviewed in accordance with the requirements of the relevant document and records management procedure or when a material change occurs that requires its content to be updated.

10.2. Roles and Responsibilities to Develop this Asset Strategy

The roles and responsibilities of those responsible for the development of this asset strategy are as follows:

- The Head of Asset Management is responsible for the approval of this strategy.
- The Asset Manager is responsible for the development and regular review of this strategy.

10.3. References

- Asset Management System Description
- Network Asset Strategy
- Prescribed Capital Investment Process
- Spares Policy All Streams

Appendix A – Emerging Issues and Renewal and Maintenance Initiatives

Table 19 Emerging Issues and Renewal and Maintenance Initiatives

Assets	Network Asset Strategy Objective	Emerging Issues	Strategic Initiative	Progress (completion and expenditure)	Reference Documents
Physical Security • CCTV • Access Control	• Manage network safety risk • Improve capability to support future energy system development • Manage assets efficiently without compromising the security holder and consumer value	• Obsolete technologies and methodologies are deployed in the network • Cannot procure currently specified systems due to obsolescence • Cannot provide the functionality, visibility and operability required • Cannot provide the flexibility required for augmentation works and integration into modern systems and solutions	Renewal • Site wide renewals to modernise all Security assets and their associated infrastructure	• Ongoing – completion by 2022/23	• Need 1595 • Need 1398 • Need 1452
				• Planned – completion by 2027/28	• RP3 Completion of Sites
				• Maintenance by 2021/22	• Maintenance Plan – Network Property
Physical Security • Gates	• Manage network safety risk	• Identified risk of gate collapse due to poor condition of hinges • Identified risk of collapse due to poor hinge design and weight of palisade	Maintenance • Planned preventative maintenance applied for gates to inspect and lubricate hinges and general installation • Planned preventative maintenance to be applied to installed gate slings Renewal • New Standard setting the preference for more	• Policy by 2020/21 • Renewal by 2022/23	• Requirements elicitation from stakeholders • Research and Development IWR to be issued

Assets	Network Asset Strategy Objective	Emerging Issues	Strategic Initiative	Progress (completion and expenditure)	Reference Documents
			lightweight welded mesh fencing and gate design		
Air Conditioning Systems	• Manage assets efficiently without compromising the security holder and consumer value	• High defect rates year on year • Systems often identified with competing temperatures	Policy Review • Lock out temperature setting devices Renewal • Investigate new approach to system temperature control	• Ongoing – completion by 2022/23	• Maintenance Plan – Network Property
Hydraulic Systems • Potable Water Systems • Hot Water Systems	• Manage assets efficiently without compromising the security holder and consumer value	• Certain components carry statutory and regulatory maintenance requirements • These components add no value to our business or are an obsolete requirement	Policy Review • Review the need for certain components • Set a policy direction for removal	• Maintenance by 2022/23	• Maintenance Plan – Network Property
Buildings	• Manage network safety risk • Manage assets efficiently without compromising the security holder and consumer value	• Building condition deteriorating • No active investment for 5 years into building refurbishment	Renewal • Building refurbishment works	• Renewal by 2027/28	• Need N2553
Buildings • Building Management System	• Manage network safety risk • Manage assets efficiently without compromising the security holder and consumer value	• Haymarket BMS is end of life, with no support and an undocumented installation • Poses a risk to the site as it controls various systems	Renewal • BMS system renewal	• Ongoing – completion by 2027/28	• New Needs pending review
Fire Systems	• Manage network safety risk • Manage assets efficiently without compromising the	• No active investment into Fire systems • Ageing asset population	Renewal • Review Fire System components and deliver a renewal program	• Maintenance by 2022/23	• Condition Review IWR to be issued

Assets	Network Asset Strategy Objective	Emerging Issues	Strategic Initiative	Progress (completion and expenditure)	Reference Documents
	security holder and consumer value	• Lack of support for certain components • Component value to the business unknown	Policy • Review standards and fire system requirements	• Renewal by 2026/27	• New Needs pending reports
Roadways	• Manage network safety risk • Manage assets efficiently without compromising the security holder and consumer value	• Roadways displaying the outcome of recent severe weather conditions. • Need for renewal of certain roads • Lack of information regarding Fire Trails	Maintenance • Carry out ownership and condition review Renewal • Roadway refurbishment works • Fire trail refurbishment works	• Audit installations by 2022/23	• IWR to be issued
Network Property	• Manage assets efficiently without compromising the security holder and consumer value	• A desire to better understand our BCA regulatory obligations, and to assure our current maintenance plan remains fit for purpose.	Third-party review of: • Applicable BCA compliance requirements for our network sites • Current maintenance plan against industry best practice	• In progress	-
Buffered land	• Manage network safety risk • Manage assets efficiently without compromising the security holder and consumer value	• Business does not have specialist level skills in assessing Asset Protection Zone (APZ) conformance requirements at our network sites.	Engagement of expert third-party to review APZ requirements against our network sites	• Not yes started	-