Strategic Asset Management Plan (SAMP)

If this strategy is a printed version, to ensure compliance, reference must be made to the Energy Queensland Controlled Documents to obtain the latest version.

Abstract: The Strategic Asset Management Plan (SAMP) sets out how we apply the principles of asset management stated in our Asset Management Policy to achieve our strategic objectives. Two key elements of the SAMP are asset management objectives and providing an overview of asset management systems and processes.

Keywords: SAMP, Asset Management, Asset Management Policy, Asset Management Plan, AMP, Asset Management Objectives, ISO55000, Asset Management Activities

Table of Contents

Executive Summary

Energy Queensland (EQL) is committed to maximising value from its assets for the benefit of its customers, shareholders and the communities in which it operates. In line with our corporate vision and purpose, Energy Queensland will look to safely deliver secure, affordable and sustainable energy solutions to its communities and customers by optimally managing its assets throughout their life-cycle.

EQL has shaped the strategic planning approach to consider what we need to do to deliver financial sustainability whilst balancing our ability to transform in an environment of significant market disruption and increased competition as we evolve towards an 'electric life'.

Our Strategic Asset Management Plan (SAMP) sets out how we apply the principles of asset management stated in our Asset Management Policy to achieve EQL's strategic objectives.

The two key elements of the SAMP are the development of the Asset Management Objectives (set out below) and providing an overview of our Asset Management Systems & processes, including framework (Section 7), governance (Section 8), management and activities (Section 9) and investment approach and portfolio optimisation (Section 10)).

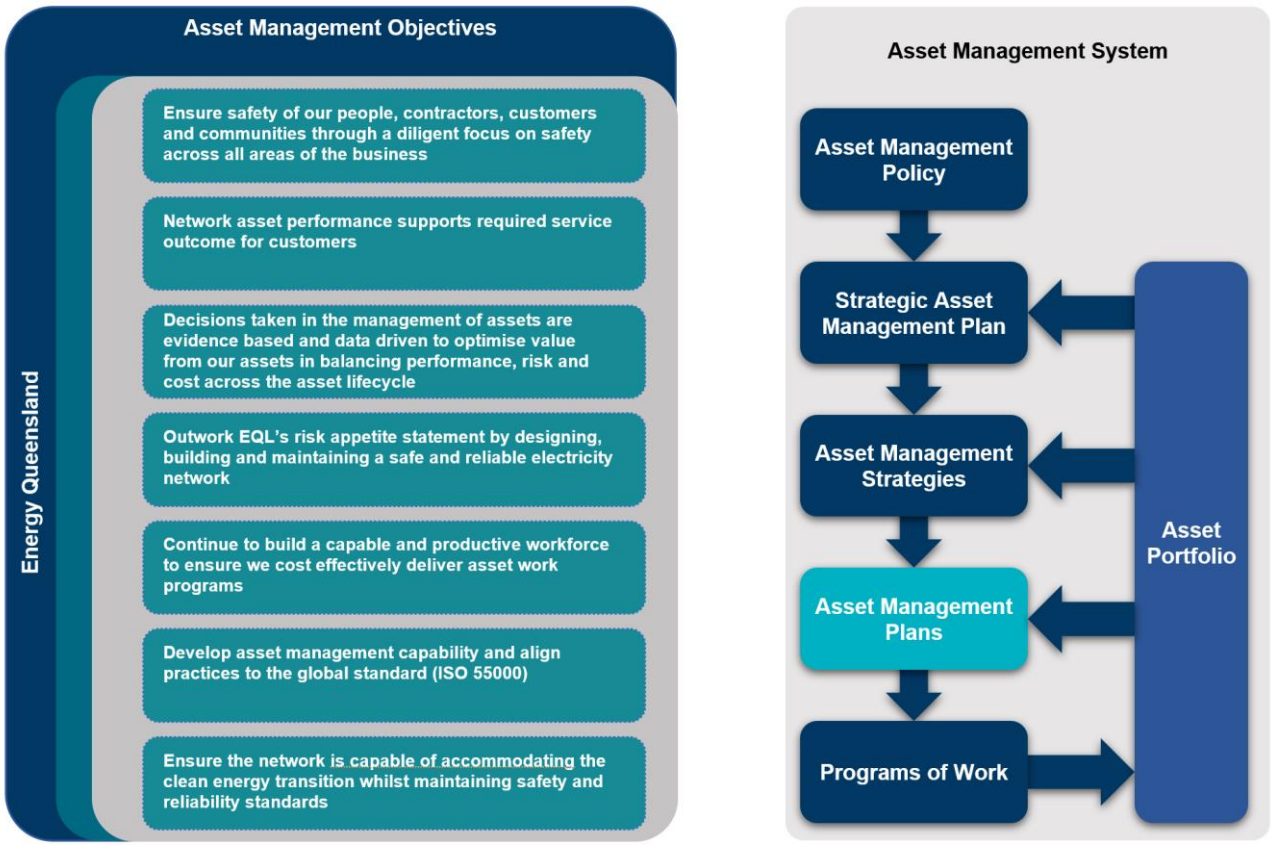


Figure 1.0 Asset Management Objectives and Asset Management System

The Asset Management System provides the framework for operationalising and achieving the Asset Management Objectives as well as demonstrating our progress towards alignment with ISO55000, the international standard for asset management. Asset Management Objectives have been reviewed and updated in 2023 in parallel with EQL's corporate planning cycle.

The scope of this document is limited to the network assets managed by the Distribution Network Service Providers (Ergon Energy including isolated networks, and Energex) of EQL. The network assets include infrastructure assets, telecommunication assets, system data and information services and asset management capability. Non-network assets such as fleet, property, tools and equipment, and IT, as well as people, development and training are not currently within scope.

1 Overview

1.1 Purpose

The Strategic Asset Management Plan (SAMP) sets out how we will apply the principles stated in our Asset Management Policy to fulfil Energy Queensland's strategic objectives. This Plan:

- Summarises the translation of the corporate strategic objectives into the Asset Management Objectives. These objectives provide direction for Asset Management Activities and form the basis for developing the more specific asset mangement strategies and plans.
- Sets out the medium to longer term direction of asset management for the network asset portfolio.
- Describes the Asset Management System, which conceptualises the integration and interrelationship between Asset Management Activities that are necessary to optimise the value from assets and contribute to the achievement of the Asset Management Objectives.

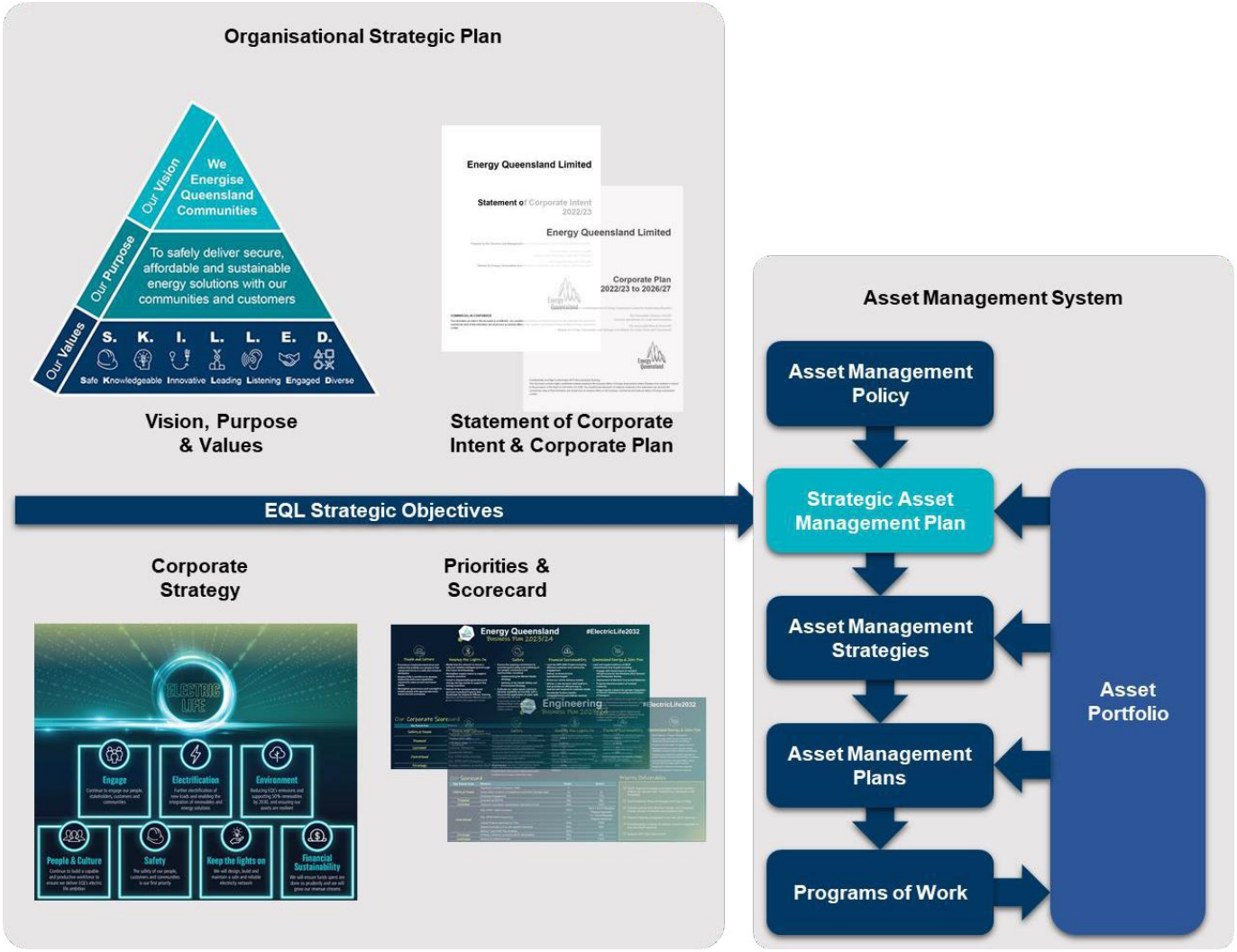


Figure 1.1 SAMP Overview and purpose

1.2 Scope

The scope of the Asset Management System is limited to the regulated network assets managed by the Distribution Network Service Providers (Ergon Energy including isolated networks, and Energex) of EQL. The network assets include infrastructure assets, telecommunication assets, system data and information services and asset management capability.

Non-network assets such as fleet, property, tools and equipment are not currently within scope.

1.3 Responsibilities

The Investment Optimisation (IO) team within Engineering Division is responsible for developing and maintaining the SAMP. The General Manager (GM), Grid Investment is responsible for the approval of the SAMP.

2 References

Governance and Delegation Policy

Sustainable Procurement Policy

Risk Management & Resilience Policy

Asset Management Policy

Asset Management Strategies & Plans

Board approved risk appetite statement

Network Risk Framework

Strategy and Business Plans

Queensland Energy and Jobs Plan (QEJP)

3 Management Systems

Energy Queensland is currently certified to three management system standards:

- ISO 9001 Quality Management Systems
- ISO 45001 Occupational Health and Safety Management System
- ISO 14001 Environmental Management System

The scope for this certification is 'For the provision of providing planning, designing, constructing, installing, operating, maintaining, and managing assets of an electricity transmission and distribution network along with associated ancillary services such as telecommunications, training, metering installation and maintenance, contestable extra-high voltage (EHV), high voltage (HV), and medium voltage infrastructure delivery, HV and energy storage operations and maintenance, solar and wind generation, battery storage, Electric Vehicle (EV) charging infrastructure and services, laboratory testing and calibration, and supply and distribution of electrical infrastructure equipment.'

The Asset Management System as defined by this SAMP will operate within the larger scope of these certifications and ensure compliance with their requirements. The Asset Management System and other management systems will have common areas of inputs, processes, systems and outputs that will have inter-related dependencies and outcomes.

4 Definitions, acronyms, and abbreviations

4.1 Acronyms and abbreviations

The following acronyms and abbreviations appear in this document.

AER	Australian Energy Regulator
AM	Asset Management
AMP	Asset Management Plan
Capex	Capital Expenditure
CP	Corporate Plan
DAPR	Distribution Annual Planning Report
DER	Distributed Energy Resources
DNSP	Distribution Network Service Provider
EAM	Enterprise Asset Management
EGM	Executive General Manager
EQL	Energy Queensland Limited
ERP	Enterprise Resource Planning
GI	Grid Investment Group
GIP	Grid Investment Plan

GOC	Government Owned Corporation
ICT	Information and Communication Technologies
IO	Investment Optimisation team
IWP	Integrated Works Program
KPI	Key Performance Indicator
KRA	Key Result Area
LTIFR	Lost Time Injury Frequency Rate
MSS	Minimum Service Standards
NER	National Electricity Rules
NPAT	Net Profit After Tax
NPV	Net Present Value
Opex	Operating Expenditure
PoW	Program/Portfolio of Work (commonly referred to as Grid Investment Plan)
PV	Photovoltaic
QEJP	Queensland Energy and Jobs Plan
RIT-D	Regulatory Investment Test for Distribution
SAMP	Strategic Asset Management Plan
SCI	Statement of Corporate Intent
SCS	Standard Control Services
SiD	Safety is Defence
SIFR	Significant Incident Frequency Rate
STEP	Sustainable Transformation and Efficiency Program
STPIS	Service Target Performance Inventive Scheme
Totex	Total Expenditure
TRIFR	Total Recordable Injury Frequency Rate

5 Organisational Context

5.1 About Us

Energy Queensland, which was formed in June 2016, is the group of electricity distribution, retail and energy services businesses 100% owned by the state of Queensland.

Energy Queensland plays a key role in providing secure, affordable and sustainable energy solutions across Queensland. As a Government Owned Corporation ultimately owned by the people of Queensland, Energy Queensland is committed to delivering valued energy-related products and services for the communities in which we serve.

Energy Queensland supports the provision of energy to more than five million Queenslanders and has over 7,000 employees, who work and live in communities throughout Queensland. The infographic below showcases Energy Queensland's major statistics.

Since becoming Energy Queensland in June 2016, the organisation has grown, to a workforce of over 7,600, and an asset base of over $28 billion. EQL energises Queensland communities from Tweed River to Torres Strait and from Brisbane across to Birdsville; which includes more than 200,000 kilometres of electricity networks, and 33 stand-alone microgrids.

Below is a summary of our key statistics:

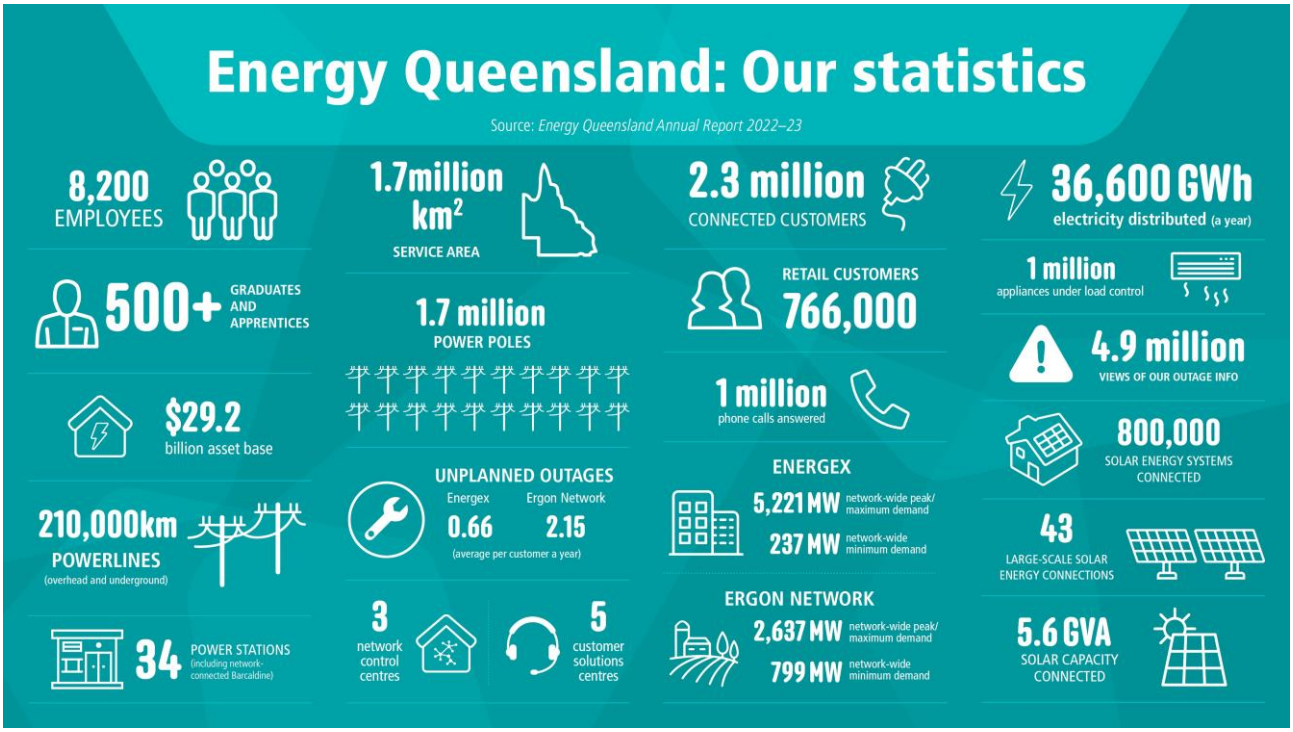


Figure 5.1 EQL statistics at a glance

5.2 Our Networks

Ergon – Around 70% of the Ergon Energy network runs through rural Queensland, across a vast service area, by far the largest in the NEM, with the second lowest customer density per network kilometre. It has a proportionately high investment in sub-transmission assets, compared to the more urban networks, and one of the largest Single Wire Earth Return (SWER) networks in the world. Ergon Network also has 33 stand-alone power stations supplying communities isolated from the main grid in western Queensland, the Gulf of Carpentaria, Cape York, various Torres Strait islands, and Palm Island – to around 7,000 homes and businesses.

Energex – Energex's network distributes across Southeast Queensland and services high density population areas, such as the Brisbane Central Business District (CBD), and the Gold Coast and Sunshine Coast areas, as well as the South East's large urban and rural areas. The inner Brisbane suburbs have extensive older, meshed underground cable networks that supply the zone substations. The newer outer suburbs and the rapidly growing areas to the north, south and west of Brisbane are supplied via modern indoor substations of modular design, and by underground Low Voltage networks with padmount substations.

5.3 External Environment

In the last 12 months, the environment in which Energy Queensland operates has continued to change at an accelerated rate with several challenges and opportunities, including:

- Queensland Energy and Jobs Plan (QEJP) – transformation and decarbonisation of the energy system and the pathway to the continued delivery of clean, reliable and affordable energy. Additionally, the landmark initiative is expected to require us to focus on:
    - People and Skills: recruitment, training, upskilling and building capability, as the industry faces competition for skilled resources
    - Customer and Community Engagement, as customers embrace new energy technology
    - Connections and Demand Management: facilitating the connection of large scale and customer renewables across our networks
- Brisbane Olympics 2032 – will have direct impacts on EQL as it supports the delivery of the world's largest sporting event and the delivery of various city shaping projects this entails across South East Queensland
- Renewable energy targets – 50% renewable energy by 2030, moving to 70% renewable energy by 2032, and 80% by 2035-36; and the resulting push by several large businesses pursuing these targets.
- Increased population growth in Queensland accelerated by the post pandemic interstate migration.
- Increasing complexity of the regulatory policy and reform landscape.
- DER adoption particularly solar PV is accelerating including increasing volume of large-scale renewable generation.
- Accelerating adoption of electric vehicles (EV's) and energy storage.
- Volatility and inflationary impacts to both material and labour sourcing.

The above developments and market externalities add an increased focus on asset management from a financial, risk, and performance perspective. Some of these include:

- Asset Safety – prioritising the safety of our people, customers and communities in all our activities
- System Security – keeping the lights on and ensuring a reliable supply to our customers
- Financial Sustainability – delivering value to improve our financial position

5.4 EQL Corporate Strategy

EQL's ambition for 2032 is Electric Life and provides the impetus for our business to change. It gives some indications about what life will look like in 2032, how the energy industry and customers will change leading to 2032, and therefore, how and why EQL needs to adapt and change to meet this future in a positive way.

Electric life is still our long-term ambition to support the Energy Transition in Queensland and ensure targets set by the Queensland Energy and Jobs Plan (QEJP) can be achieved. This includes supporting the delivery of Queensland's 70% renewable target, a climate positive 2032 Olympics and setting us on the path to 2050 net zero emissions.

To maintain relevance from now to 2032 and beyond, Energy Queensland needs to stay a step ahead to deliver what our customers want and position ourselves to be at the core of this future. We need to provide safe, secure, affordable and sustainable electricity for our customers. As Queensland already leads the world in solar penetration, increasing customer adoption of renewable technology requires us to transform our grid to be the resilient and an interconnected platform for this renewable future. Proactively engaging in regulatory reform is also critical to deliver customer outcomes.

By 2030 the objective for Queensland is to have 50% renewable energy with a further target of 70% renewable energy by 2032. Queensland is already leading the world in the integration of solar from residential and commercial customers and we are increasingly seeing people start to use EV's and batteries. Our Electric Life ambition, aims to set us on a transformational path and embrace our new energy future.

Ultimately, Energy Queensland and Queensland's energy sector will look to position for the future Electric Life ambition. It heralds a future with Energy Queensland partnering with customers in a well-integrated, reliable and digitally enabled electricity system underpinning our economy with a large proportion of energy generated through renewable and decentralised sources. Our strategic building blocks to evolve towards and enable our Corporate Strategy are illustrated below:

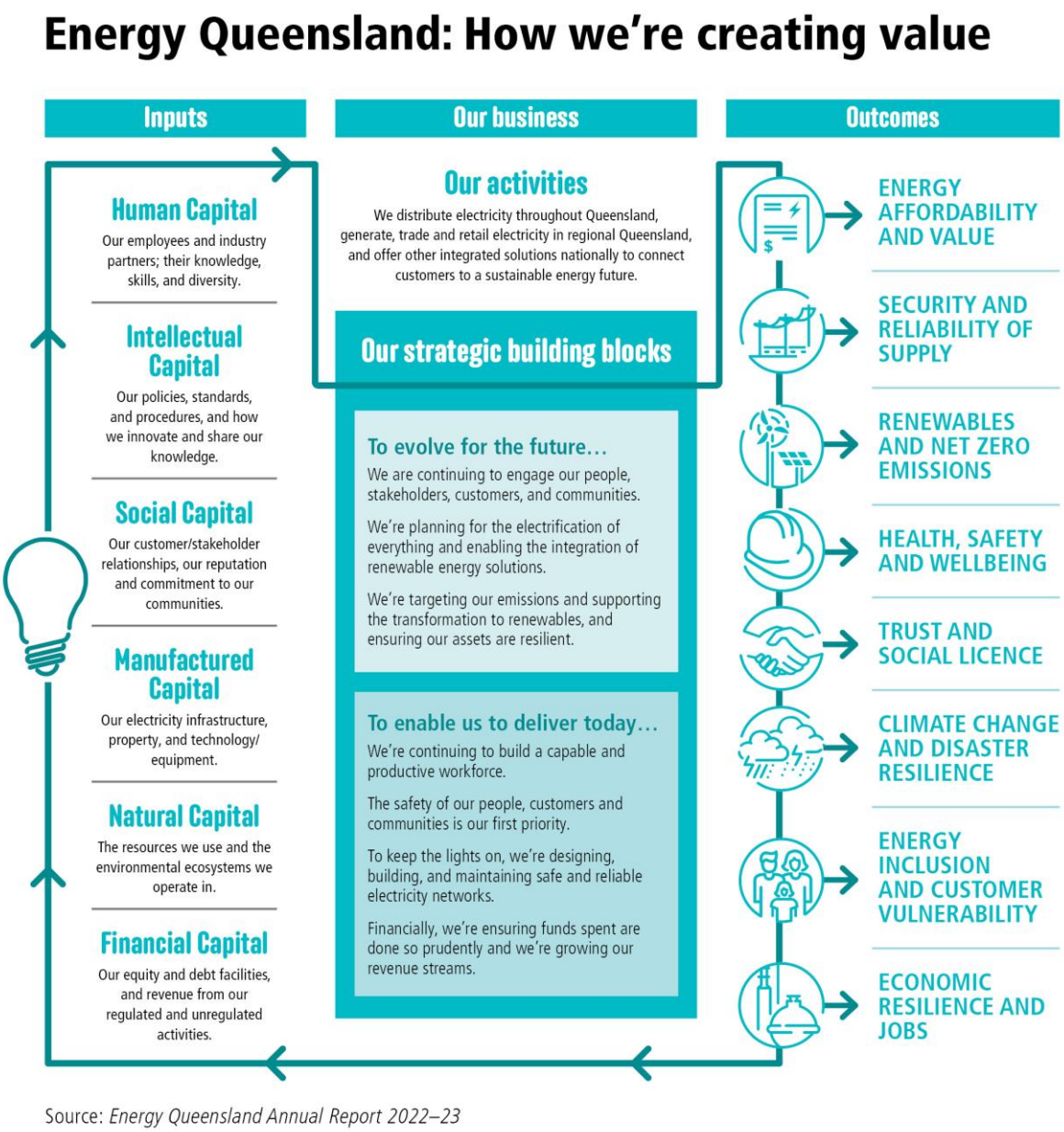
Figure 5.4.2 Building blocks empowering Electric Life

Energy Queensland continues to invest in asset inspection, maintenance, refurbishment and replacement works to address the performance challenges of an ageing network to meet community safety expectations.

For the distribution networks this translates to:

- A no-compromise approach is taken to asset safety
- Support is provided to the areas of the network that continue to grow
- Focus is maintained on cyber security
- We manage network reliability within the constraints of our safety-based Grid Investment Plans
- Appropriate standards, systems and network capability, including network control, are in place to successfully integrate new technologies as they emerge
- We continue to implement new technology at Fringe of Grid where it can provide customer and economic benefit
- We continue to lead the industry with innovative pilots and trials.

Whilst the SAMP primarily addresses infrastructure assets and the value these create, the impacts are far reaching and enable the creation of value and influence outcomes across a host of other areas, illustrated in Figure 5.4.3.



Source: *Energy Queensland Annual Report 2022–23*

Figure 5.4.3 Value creation

5.5 Environmental, Social and Governance (ESG)

In 2022 Energy Queensland undertook an assessment of the Environmental, Social and Governance (ESG) topics material to our stakeholders and to achieving Energy Queensland's objectives. EQL is making a significant contribution to sustainability, most notably through the enabling energy transformation underway.

Our priority remains Energy Affordability and Value. As an essential part of modern life, affordable clean energy, along with choice and control, and a sense of value, are important to our customers from both a cost of living and a business competitiveness perspective. Security and Reliability of Supply also remain central. With an ageing distribution network infrastructure, and an industry challenge of reliably integrating renewables into the energy system, the risk of power system failures could bring significant economic and social impacts.

From an ESG perspective, there is focus by Energy Queensland on the transition to Renewables and Net Zero Emissions. Energy Queensland's strategies and planning supports the Queensland Energy and Jobs Plan (QEJP) which targets cleaner, affordable energy and 70% Renewable Energy by 2032. As energy is a major emissions contributor, Energy Queensland has a pivotal role to play. Solutions are needed to support the renewable energy transformation and the electrification of transport and industry required for effective climate action.

6 Asset Management Objectives

6.1 Developing Asset Management Objectives

The enabling priorities set out in our Electric Life vision include:

- Safety;
- Keeping the lights on;
- Financial Sustainability;
- People and Culture; and
- Queensland Energy and Jobs Plan

Asset management objectives have been set out in alignment with the above priorities as seen in Table 6.2 below.

Corporate Building Block	Asset Management Policy – Principles & Implementation	Asset Management Objectives	Measures	How are we achieving this?
Safety - Ensure the ongoing commitment to prioritising the safety and wellbeing of our people, contractors & communities - Proactively drive and support #safebydesign network assets underpinned by supporting safety culture	- Application of principles of safety by design to eliminate or minimise safety risks throughout the life of assets so far as is reasonably practicable - Compliance with all relevant statutory requirements, industry standards and codes of practice that apply to assets and asset management	- Ensure safety of our people, contractors, customers and communities through a diligent focus on safety across all areas of the business	- SIFR - Asset safety incidents investigations cycle time (average days) - Strategic Initiatives - Network Compliance Index	- Development of the Grid Investment Plan, considering network risk, customer expectations and balanced commercial outcomes, through the use of existing and new system functionality being implemented - Continuous improvements on asset Data Quality and targeted business initiatives e.g. clearance to ground (CTG), clearance to structure (CTS) and privately owned electricity lines (POEL) - Optimising Asset Maintenance dashboards to monitor unassisted failures and asset defects. - Improve Asset Predictive Modelling and Risk Quantification - Proactively drive and support #safebydesign network assets - Cumulative Safety Risk Project
Keeping the Lights on - Modernise the network to ensure a safe and reliable intelligent grid through the Future Grid Roadmap - Strengthen supply chains to support network evolution - Deliver fit-for-purpose assets and Services	- Engagement of customers and other stakeholders to understand how its assets can best deliver value around security, affordability and sustainability	- Network asset performance supports required service outcome for customers	- STIPIS SAIDI (minutes) - STIPIS SAIFI (frequency) - Capital Projects approved on time - Defects forecasts in line with agreed tolerance - Rolling 7 year PoW Plan available	- Rolling 7 year Grid Investment Plans for Energex and Ergon - Asset (Lifecycle) Management Plans (AMP) - Network Strategies
Financial Sustainability - Lead the AER 2025 Project including effective customer and community engagement - Deliver on financial and operational targets - Evolve our works delivery models	- Ensuring decisions taken in the management of assets are evidence based and data driven to optimise value from our assets in balancing performance, risk and cost across the asset lifecycle - Provide the necessary resources to deliver the asset management objectives supporting the achievement of the organisational objectives and overarching business strategies	- Decisions taken in the management of assets are evidence based and data driven to optimise value from our assets in balancing performance, risk and cost across the asset lifecycle - Outwork EQL's risk appetite statement by designing, building and maintaining a safe and reliable electricity network	- EBITDA	- Deliver on financial and operational targets to achieve sustainable business Efficiencies - Rolling 7 year Grid Investment Plans for Energex and Ergon - Support AER 2025 Submissions - Asset (Lifecycle) Management Plans (AMP) - Network Strategies

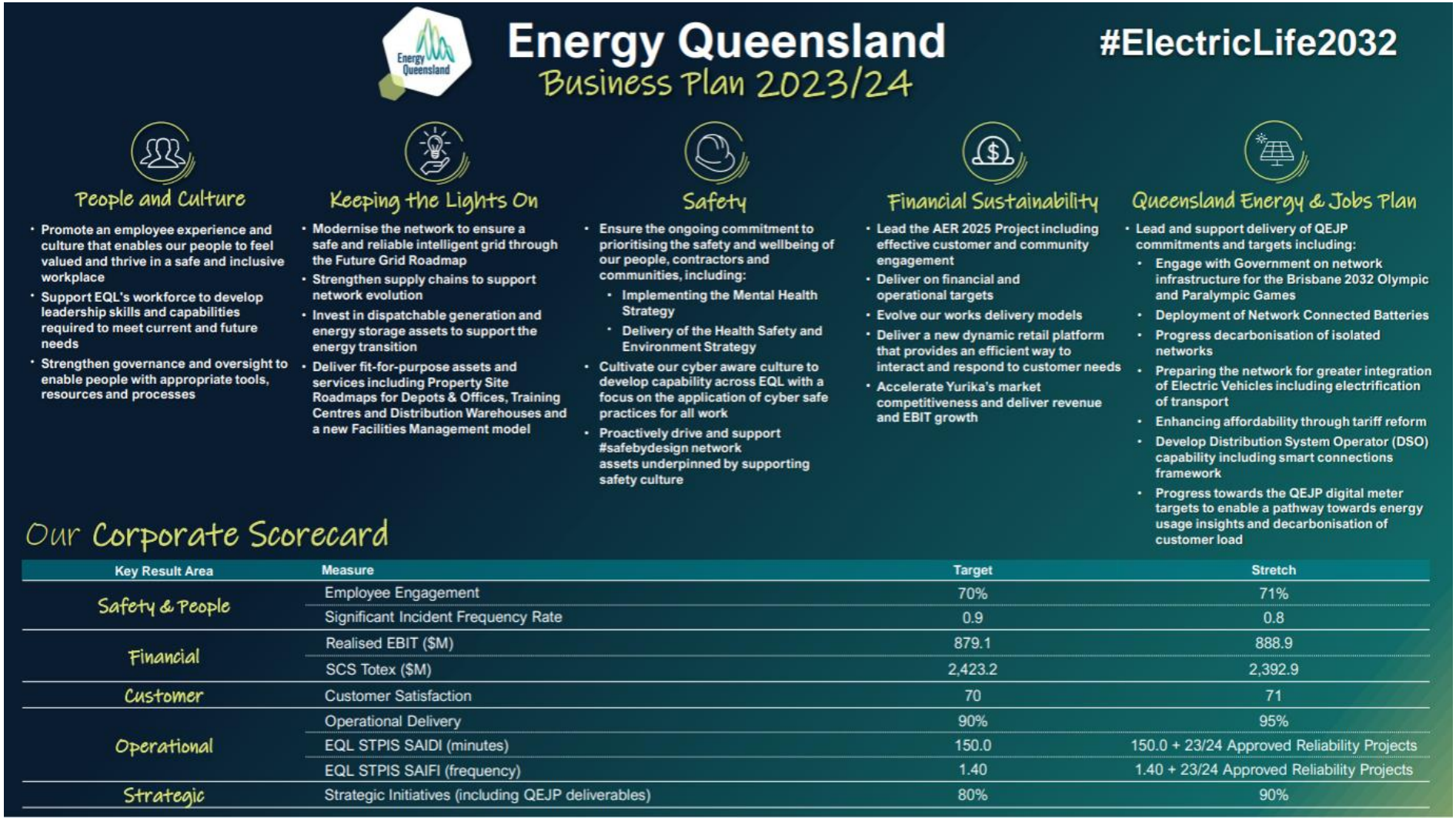
Corporate Building Block	Asset Management Policy – Principles & Implementation	Asset Management Objectives	Measures	How are we achieving this?
People and Culture - Support EQL's workforce to develop leadership skills and capabilities required to meet current and future needs. - Strengthen governance and oversight whilst enabling people with appropriate tools, resources and processes	- Undertaking performance monitoring to facilitate continual improvement on Energy Queensland's asset management practises and the asset management system - Develop and sustain a system for asset management that is aligned with AS/NZS ISO55001:2014 Asset Management System Standard - Ensure its people and contractors (through the underpinning of effective contractor management system) are sufficiently trained, authorised and competent to undertake their work activities	- Continue to build a capable and productive workforce to ensure we cost effectively deliver asset work programs - Develop asset management capability and align practices to the global standard (ISO 55000)	- Employee engagement - Strategic initiatives	- Development of Enterprise and leadership skills - Model future regulated PoW resource Requirements - Power BI dashboards - Maturation roadmap for asset management decision making, including risk awareness and knowledge.
Queensland Energy and Jobs Plan - Engage with Government on network infrastructure for the Brisbane 2032 Olympic and Paralympic Games - Deployment of Network Connected Batteries - Progress decarbonisation of isolated networks - Preparing the network for greater integration of Electric Vehicles including electrification of transport - Develop Distribution System Operator (DSO) capability including smart connections framework - Progress towards the QEJP digital meter targets to enable a pathway towards energy usage insights and decarbonisation of customer load	- Per the above four categories	- Ensure the network is capable of accommodating the clean energy transition whilst maintaining safety and reliability standards	- QEJP response themes/ strategic initiative KRAs and KPIs.	- QEJP response managed at portfolio and cross-industry level (e.g. Copperstring coordination with Powerlink) - Climate positive 2032 Summer Olympic and Paralympic Games network investment and resilience plan - Network batteries progressed in line with QEJP response - Smart meter rollout progressed in line with QEJP response. - Decarbonisation projects for isolated systems progressed in line with QEJP response - Future Network Strategy, Energy Queensland Electric Vehicle strategy, Demand Management Plan - Define and enact role of DSO to manage the network.

Table 6.2 Mapping Corporate Building Blocks to Asset Management Policy and Objectives

Note: Asset Management Policy implementation items including, the requirement to provide customers with consultation channels, information, tools and service options to facilitate their energy choices and needs is applicable to all Corporate building blocks.

6.2 Performance Measures

The Engineering Business Plan outlines the business priorities and the key result areas (KRA's) that underpin the delivery of our Corporate Strategy. EQL monitors and tracks the performance of our key initiatives and metrics set out per the below business plan:



Key Result Area	Measure	Target	Stretch
Safety & People	Employee Engagement	70%	71%
	Significant Incident Frequency Rate	0.9	0.8
Financial	Realised EBIT ($M)	879.1	888.9
	SCS Totex ($M)	2,423.2	2,392.9
Customer	Customer Satisfaction	70	71
Operational	Operational Delivery	90%	95%
	EQL STPIS SAIDI (minutes)	150.0	150.0 + 23/24 Approved Reliability Projects
	EQL STPIS SAIFI (frequency)	1.40	1.40 + 23/24 Approved Reliability Projects
Strategic	Strategic Initiatives (including QEJP deliverables)	80%	90%

Figure 6.2 EQL Business Plan

7 Asset Management Framework

7.1 Asset Management System Map

The AM System includes a number of elements that provide the line of sight from EQL's corporate objectives to the lifecycle asset management activities. Key system elements are set out below:

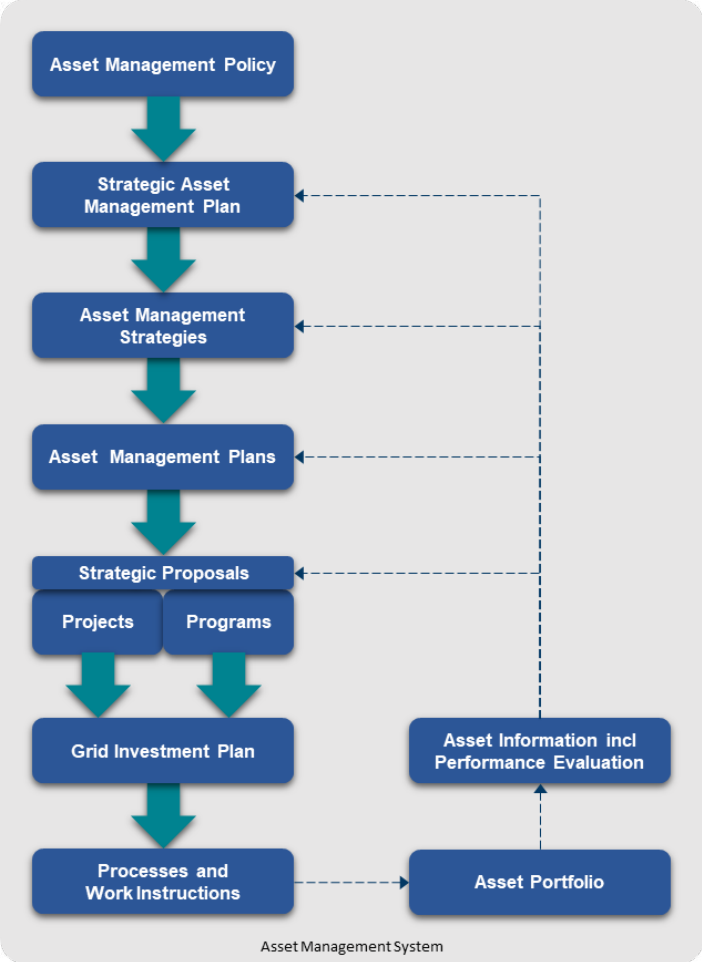


Figure 7.1 Asset Management System Artefacts

Asset Management Policy

Outlines the high-level principles by which the organisation intends to apply asset management to achieve its organisational objectives.

Strategic Asset Management Plan

Outlines the asset management objectives EQL intends to achieve from its activities and how this will be done within the organisational context. The SAMP also defines:

- The Asset Management System
- The asset portfolios within the scope of the SAMP
- Governance approach and
- Asset Management Activities.

The SAMP is approved by the General Manager, Grid Investment within the Engineering Division

Asset Management Strategies

AM Strategies are narrative documents that set out specific needs and how we will address them. They capture how EQL systematically approaches specific challenges and/or requirements and sets the scene for how asset management plans will address these challenges/opportunities. The documents also provide a place to capture internal and external forces that drive demand as well as any constraints about how we deliver. Examples include: customer reliability strategy, demand management plan, future grid roadmap, etc

Accountability of Asset Management Strategies sits across various teams and/or groups across Energy Queensland

Asset Management Plans (AMPs)

AMPs are documents that demonstrate how EQL manages an asset class or an asset system to deliver the AM objectives.

Each Asset Management Plan sets out:

- The definition and purpose of the asset
- Specific legislative and regulatory considerations
- Current and desired levels of service
- Asset related risks
- Health, safety and environmental issues
- Current and emerging issues and opportunities for innovation
- How the asset is managed over its lifecycle
- Needs/limitations/actions to be addressed

The plans present the need for maintenance, refurbishment and construction activities required for the assets to meet the AM Objectives. Plans may include high level costings for the purposes of assessing options, however, the specific programs required to deliver the needs, limitations and actions identified in the plans are set out in the Program of Work (PoW).

Accountability of Asset Management Strategies sits across various teams and/or groups across Energy Queensland.

Business Cases

Business cases provide the strategic Grid Investment Plans with a forward view of the resources required to meet the needs identified in the AMPs in line with the asset managmeent strategies, the asset management policy and objectives.

The proposed projects and programs are consolidated and assessed prior to inclusion in the strategic PoW through one of the following methods.

- Specified Projects – specific project scope, estimate, risk assessment and options analysis to address a specific set of limitations through a specific solution.
- Planning Programs and Allocations– standardised project scope, estimate, risk assessments and options analysis to address forecast limitations with a typical solution. Option analysis is typically limited to varying the volume of work undertaken.

Accountability of Business Cases sits across various teams and/or groups across Energy Queensland.

Grid Investment Plan

The Grid Investment Plan is a prioritised/optimised collection of programs and projects that will be delivered over a 7-10 year period to best meet the asset management objectives and address the needs identified in AMPs, within applicable business constraints.

Processes and Work instructions

Documents that outline the detailed steps required to undertake AM Activities.

Asset Portfolio

ISO 55000 defines an asset as an item, thing or entity that has potential or actual value to an organisation. The Asset Portfolio includes assets that are within the scope of the AM System.

Asset Information

Asset information is one of the key elements underpinning the AM System. Asset information is a combination of data about assets and the context in which they operate. It also provides the basis to assess condition, performance, capability, utilisation and service against the AM Objectives and the service levels set out in the AMPs.

7.2 Document Map

Several Asset Management Plans and Strategies have been developed to achieve the AM Objectives. A summary of these documents is set out in Figure 7-2.

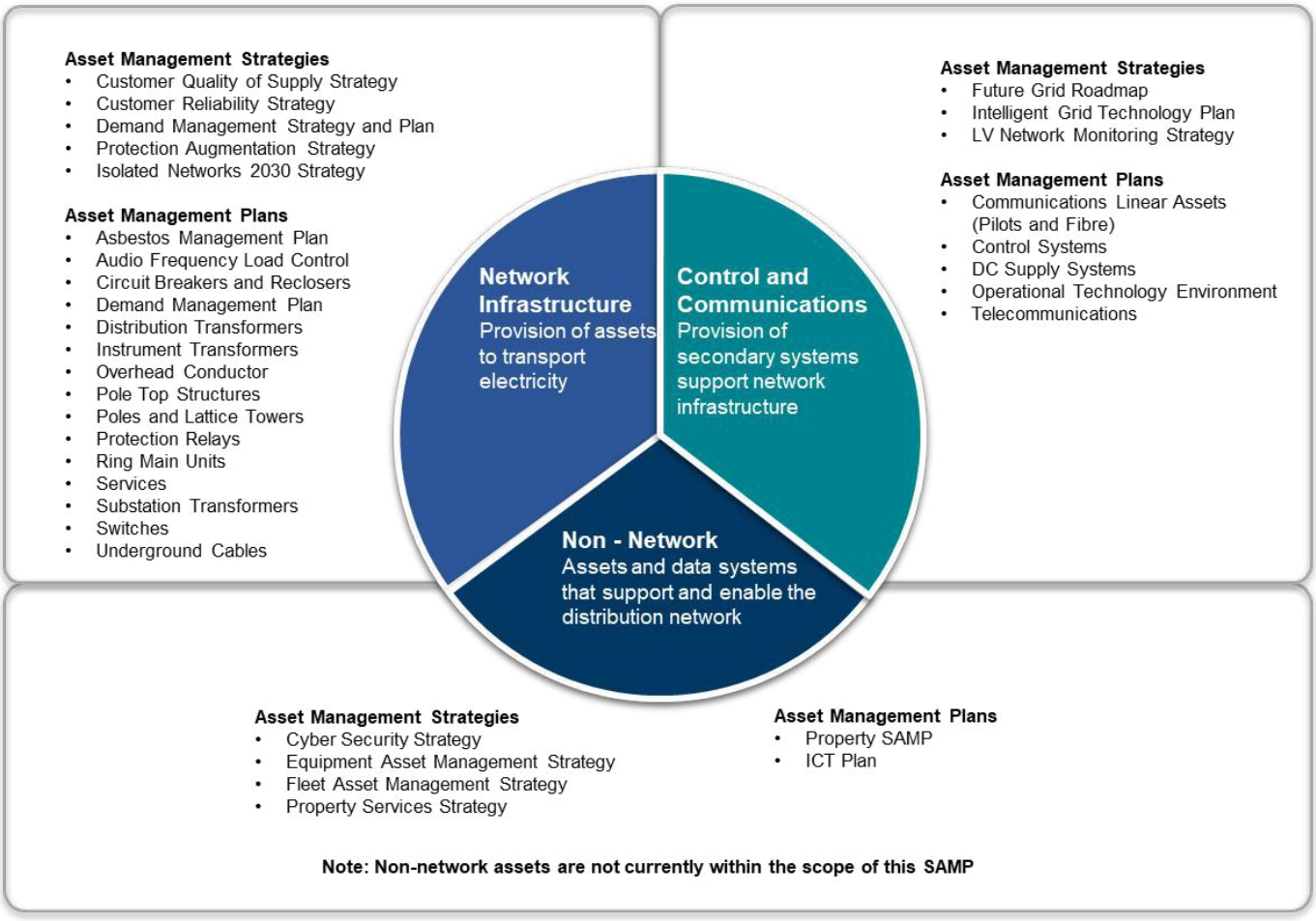


Figure 7.2 Asset Management Strategies and Plans (Documentation Map)

8 Governance of Asset Management System

EQL has a governance process to oversee future planning and expenditure on the asset portfolio as shown below.

Central to EQL's governance process is legislative compliance. The Government Owned Corporations (GOC) Act requires the submission of a Corporate Plan (CP) and Statement of Corporate Intent (SCI) while the NER requires preparation of the DAPR. The network investment portfolio expenditure forecast is included in the five-year SCI/CP.

Figure 8.1 Strategy and Planning Governance

The four areas related to the asset management system are set out below:

1. **Asset Management Policy & Strategy:** Alignment of future network development and operational management with EQL's strategic direction and policy frameworks to deliver best practice asset management.
2. **Grid Investment Plan:** Development of seven year rolling expenditure programs and a 12-month detailed program of work, established through the annual planning review process. The Governing entities:
   - oversee fulfilment of compliance commitments
   - ensure the network risk profile is managed and aligned to the corporate risk appetite and
   - oversees approval of the annual network Programs of Work and forward expenditure forecasts.
3. **PoW Performance Monitoring:** EQL has specific corporate Key Result Areas (KRA) to ensure the PoW is being effectively delivered and ensures performance standards and customer commitments are being met. Program assurance checks including review of operational and financial program performance is overseen by senior management through the monthly Works Program Committee (WPC) to ensure optimal outcomes with appropriate balance between governance, variation impact risks, emerging risks and efficiency of delivery.

   A comprehensive program of work scorecard is prepared monthly, and key metrics are included in the Program of Work Delivery Index which is a corporate key performance

indicator (KPI) that, with monthly performance reporting for key projects, informs the Executive and Board. Quarterly Program of Work updates are provided to the Board.

EQL reports asset safety performance, including a review of asset related safety issues and emerging asset safety risks, monthly to an Executive Committee and quarterly to the Health, Safety and Environment sub-committee of the Board.

4. **Project and Program Approval:** Network projects and programs are overseen by senior management and subject to an investment approval process, requiring business cases to be approved by an appropriate financial delegate.

8.1 Risks and Opportunities for the System

EQL undertakes a comprehensive Enterprise Risk Management (ERM) process to identify both strategic and operational risks and opportunities. This assessment spans the breadth of EQL's activities and as well as identifying risks in other areas of the business, captures the risks to the AM System and to the delivery of the overall strategic objectives. EQL has a corporately defined Risk Appetite wherein the Board and Management have consciously agreed on different risk appetites across various areas of business activity. The business has then delegated the ability to make risk-based decisions within the bounds of this endorsed risk guidance.

8.2 SAMP Review and Continuous Improvement

The validity and currency of the SAMP planning process must align with annual corporate planning reviews. When the annual corporate planning process is completed, the SAMP is also reviewed and updated where necessary to ensure alignment. The SAMP, and therefore the AM Objectives, are a product of the EQL's strategic planning process and are the translation of EQL's Strategic Objectives into the AM Objectives. It is through the SAMP that further strategies and plans are developed which in turn influence the decision making that occurs within the Lifecycle Delivery element of the system. The AM Activities have processes and systems that enable risk and review to be fed back into EQL's Strategic Plan. In this way, the planning loop is completed such that the process of managing the assets informs the "Strategic Risk and Opportunity Assessment" in the planning process. This ensures the continual improvement of corporate strategies, the AM Objectives and the AM System.

Review of the SAMP occurs at least every two years, with off-cycle reviews occurring as the internal/external landscape changes and/or new risks/opportunities arise. The performance of the system is analysed against the measures identified under each AM Objective to determine areas of improvement to be captured in the SAMP. Revisions of the SAMP generally include:

- An assessment of the environment to determine any new areas for consideration in the SAMP
- Review of the latest strategic direction, initiatives and business plans
- Assessing the relevance and accuracy of the AM Objectives and adjusting if required
- Determining the success of the system in delivering to the performance measures and articulating strategies and plans to better deliver on the objectives.

9 Asset Management Activities

The Asset Management Activities shown below support the achievement of EQL's AM Objectives by ensuring that all essential elements of AM practice are operationalised. The system illustrates the breadth of activities within the scope of AM, the interrelationships between activities and need to integrate them, and the critical role for AM to align and deliver the goals of the organisation's strategic plan.

The six asset management activities include:

- Strategy and Planning
- Asset Management Decision Making
- Lifecycle Delivery
- Risk and Review
- Organisation and People
- Asset Information

For each Asset Management Activity, the following sections provide an overview on the context for EQL, how the activity supports the Asset Management Objectives and the relationship to the other activities.

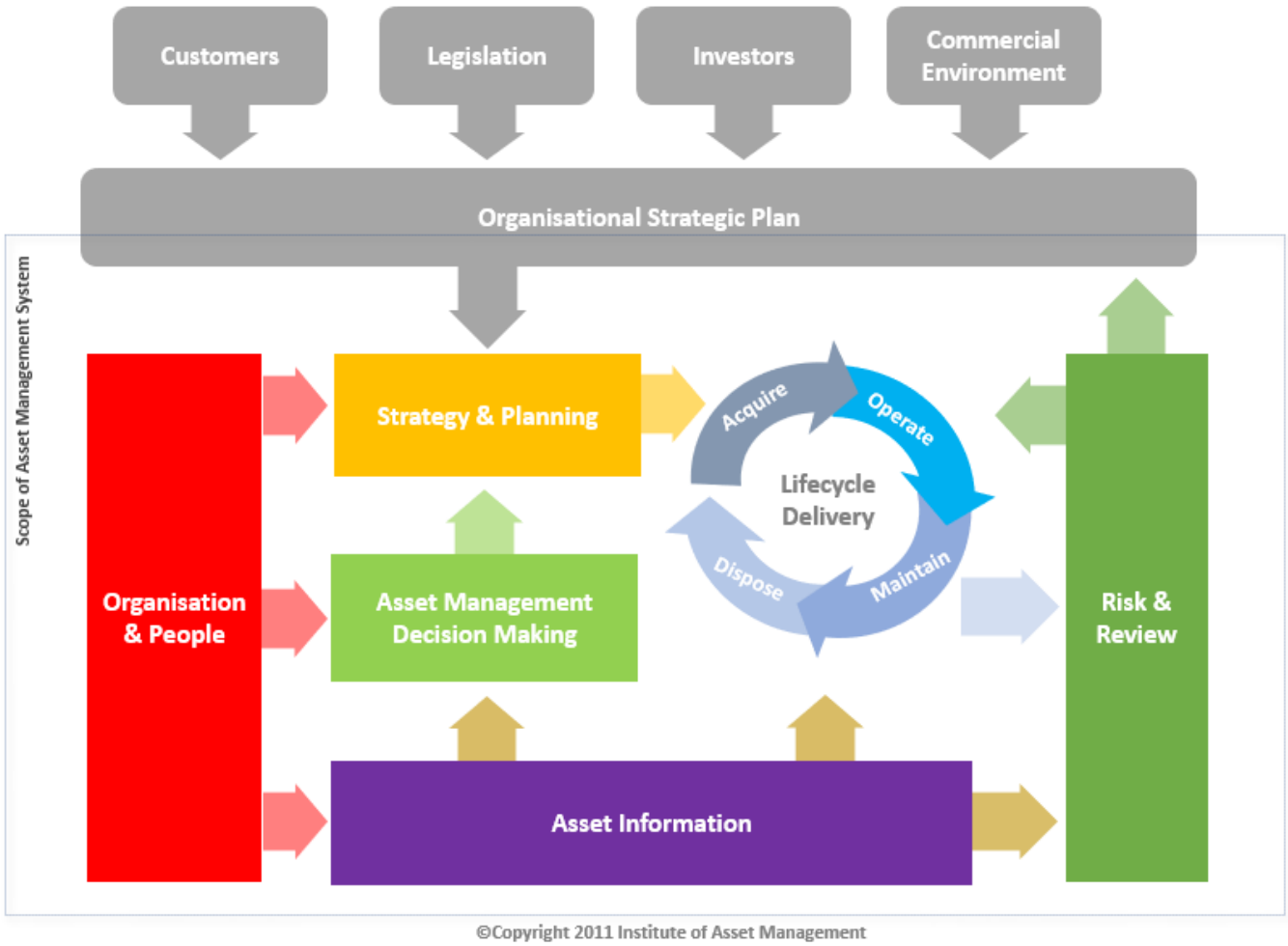


Figure 9.0 Asset Management Activities

9.1 Strategy and Planning

The *Strategy and Planning* element is a critical element in the AM System in ensuring effective *Lifecycle Delivery* outcomes and the achievement of the AM Objectives. It utilises the Business Plans, Statement of Corporate Intent, Corporate Plan and other strategic documents developed in the *Organisational Strategic Plan* and the criteria outlined in the *Decision Making* element to develop the AM Policy, AM Objectives, SAMP, AM Strategies and AMPs used in *Lifecycle Delivery*. The "line of sight" between the elements enables individuals to carry out their day-to-day activities and trace what they are doing through AMPs and objectives.

The general approach is outlined below and illustrated in Figure 9.1, with inputs showcased on the left in blue and outputs showcased on the right in teal:

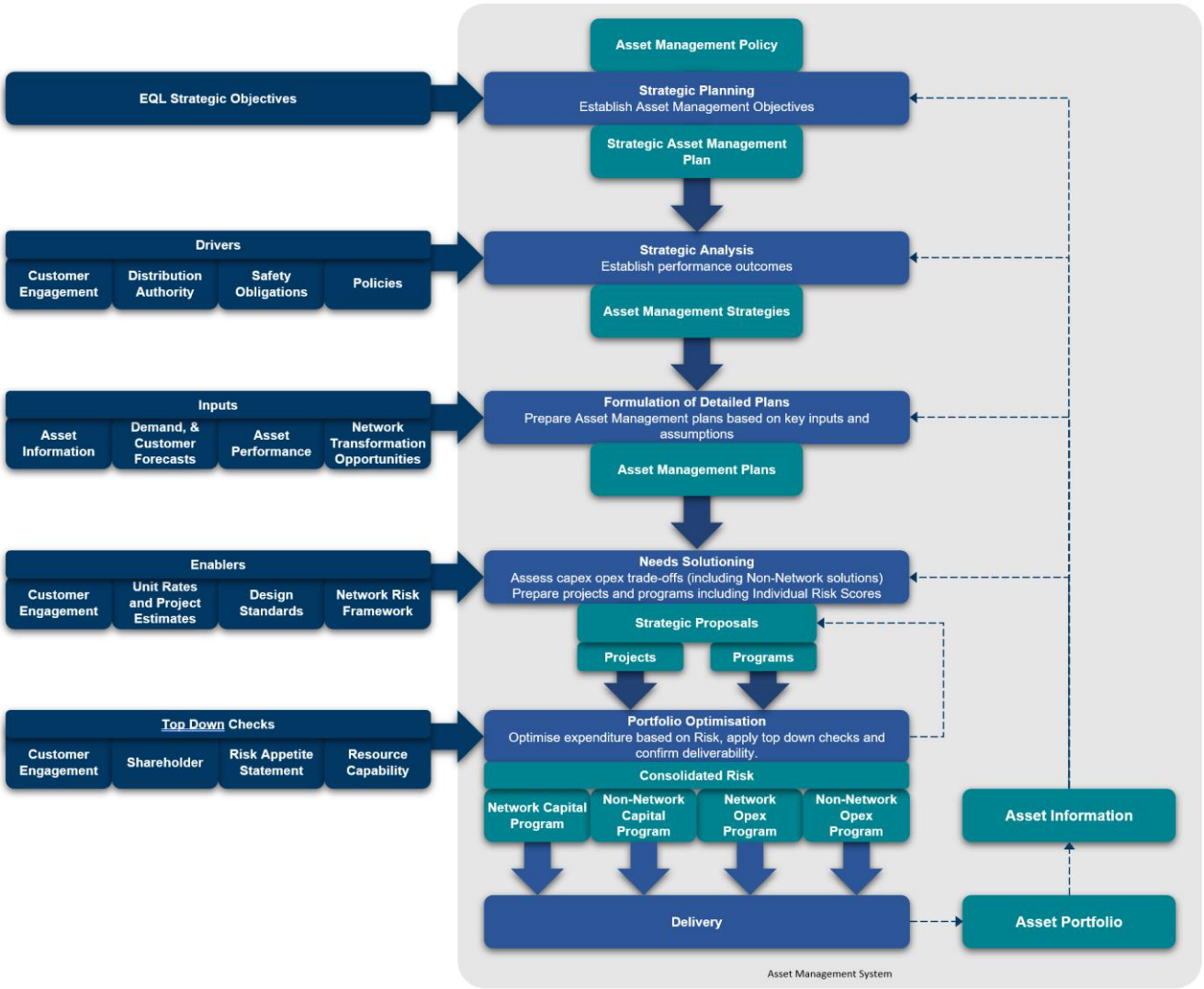


Figure 9.1 Strategy and Planning Overview

Key elements of this process include:

- **Strategic Planning** – Alignment of future network development and operational management with the EQL policy, strategic direction and management plans to ensure best practice asset management.
- **Strategic Analysis** – Establishing network performance outcomes to deliver organisational targets, including in areas such as safety performance, responsibilities to the environment, financial outcomes and commitments to customers, as well as obligations to the community.

Key inputs to this step include Customer Engagement initiatives and Asset Management and other internal policies. Moreover, EQL's ***Distribution Authorities (DA),*** Section 10 - Safety Net, obliges Ergon Energy and Energex to plan, design and operate their network in a manner that effectively mitigates the risk of high consequence - low probability events (outages). The objective of this is to avoid unexpected customer hardship and/or significant community or economic disruption. EQL also has ***safety obligations*** under the Queensland Electrical Safety Act 2002, EQL has a duty to eliminate electrical safety risk so far as is reasonably practicable, and where not practicable, to mitigate the risk so far as is reasonably practicable.

- **Formulation of Detailed Plans** – Critically review key inputs such as asset condition information, asset performance, network load growth (demand and customer forecasts) and new technology against established performance outcomes to determine areas requiring intervention. Asset Management Plans (AMPs) are the key output of this phase and are intended to monitor population trends and asset performance and risk, identify current and emerging issues, identify opportunity for improvement and innovation and set the direction for the lifecycle management of the asset class. Replacement plans are then developed in accordance with the strategies in the AMPs.
- **Needs Solutioning** – Prepare projects and programs that address the identified needs. This step includes capex-opex trade-offs and investigation of non-network solutions (including the RIT- D process) with the potential to defer the timing of major projects. The projects must include scope, estimated costs, and risk assessments to enable portfolio optimisation. Major projects and asset business cases include quantification of risk and benefits of investment to inform recommended solutions, and optimal individual investment timing, which act as initial inputs towards informing the Grid Investment Plans and a starting point for portfolio prioritisation or optimisation. The EQL Cost Benefit Analysis Framework and Principles document outlines the approach.
- **Portfolio Optimisation** – Reconcile projects and programs against top-down expenditure targets and prioritise/optimise having regard for a tolerable network risk profile. This step often entails iterations and several scenarios prior to finalisation and approval. This is explained further in Section 10.This is further explained in Section 10 of this document.
- **Delivery** - Deliver projects and programs following established business processes and work instructions to address the "needs" identified in the AMPs and ultimately achieve the AM Objectives.

9.2 Risk informed Decision Making

Effective decision making is essential for EQL to maximise the value from its assets. This element outlines the criteria and assessment strategies put in place for EQL to make decisions on its current and future assets. AM decisions must balance capital and operating expenditure to manage identified risks, and asset performance. This element of the system considers the challenges faced and the approaches to decision making for the three main stages of an assets life (acquisition/creation, operation/maintenance, end of life).

Decision making in EQL is informed by several key elements set out below in Table 9.2. Although there are other specific obligations imposed on EQL the core basis underpinning decision making include:

- Progressing towards our purpose and vision;

- Maintaining consistency with our values;
- Complying with obligations to work in the best interest of customers; and
- Exercising our duties as an electrical entity.

Element	Requirements
EQL Vision, Purpose and Values	Vision – We Energise Queensland communities Purpose – To safely deliver secure, affordable and sustainable energy solutions with our communities & customers Values – Safe, Knowledgeable, Innovative Leading, Listening, Engaged & Diverse
National Electricity Objective[1]	"The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity with respect to - (a) price, quality, safety, reliability and security of supply of electricity; and (b) the reliability, safety and security of the national electricity system."
National Electricity Rules[2]	network projects (subject to RIT-D) should: *"maximises the present value of the net economic benefit to all those who produce, consume and transport electricity in the NEM."*
Electrical Safety Act (Qld) 2002	29 - Duty of electricity entity (1) An electricity entity has a duty to ensure that its works— (a) are electrically safe; and (b) are operated in a way that is electrically safe. (2) Without limiting subsection (1), the duty includes the requirement that the electricity entity inspect, test and maintain the works.
	10 - Meanings of electrical risk, electrically safe and electrical safety (1) Electrical risk means— (a) in relation to a person, the risk to the person of death, shock or injury caused directly by electricity or originating from electricity; or (b) in relation to property, the risk to the property of— (i) damage caused by a cathodic protection system; or (ii) loss or damage caused directly by electricity or originating from electricity. (2) Electrically safe means— (a) for a person or property, that the person or property is free from electrical risk; and (b) for electrical equipment or an electrical installation, that all persons and property are free from electrical risk from the equipment or installation; and (c) for the way electrical equipment, an electrical installation or the works of an electricity entity are operated or used, that all persons and property are free from electrical risk from the operation or use of the equipment, installation or works; and (d) for the way electrical work is performed, that all persons are free from electrical risk from the performance of the work; and (e) for the way a business or undertaking is conducted, that all persons are free from electrical risk from the conduct of the business or undertaking; and (f) for the way electrical equipment or an electrical installation is installed or repaired, that all persons are free from electrical risk from the installing or repairing of the equipment or installation. (3) Electrical safety, for a person or property, means the person or property is electrically safe. (4) In this section free from electrical risk, for a person or property, means that— (a) electrical risk to the person or property has been eliminated, so far as is reasonably practicable; or (b) if it is not reasonably practicable to eliminate electrical risk to the person or property, the risk has been minimised so far as is reasonably practicable.
Distribution Authorities (Ergon Energy Corporation & Energex Limited)	Distribution Authorities are issued under the Electricity Act (Qld) to authorise the supply of electricity within a distribution area subject to a number of conditions. The conditions set out below influence how we plan and operate our network as well as how we report and provide data.
	Compliance with Laws Protocols, Standards and codes; Guaranteed Service Levels; Distribution Network Planning; Minimum Service Standards; Safety Net; Improvement Programs;
	Audit; Information; Periodic Reports and Plans; Distribution Authority Fees; Publishing of Distribution Authority; and Giving of Notices.

Table 9.2 Drivers of Decision Making

[1] National Electricity (South Australia) Act 1996 - cl 7
[2] National Electricity Rules V111 – cl 5.17.1 (b)

A further key component of the decision making framework is the risk management process set out in the Network Risk Framework and individual subordinate risk assessment procedures in the areas of Health and Safety, Environment and Network Risk Assessment and the Board Approved Risk Appetite.

Having assessed the risk level and determined that rectification or action is required, EQL identifies a range of reasonably practicable risk mitigations and controls to address the asset management objectives.

This element also facilitates the evolving trade-off between performance, cost, risk and opportunity. Review of AM activities helps EQL better understand its assets and can help in responding to asset failure and/or asset safety related incidents. In applying risk management throughout the AM System to decision making and in reviewing asset lifecycle performance, EQL can effectively assess the performance of assets against the AM Objectives.

The network risk management approach set out below aligns to the process stages described in AS/NZS ISO 31000. The EQL Risk Management Standard details the high-level approach adopted by EQL in applying this model.

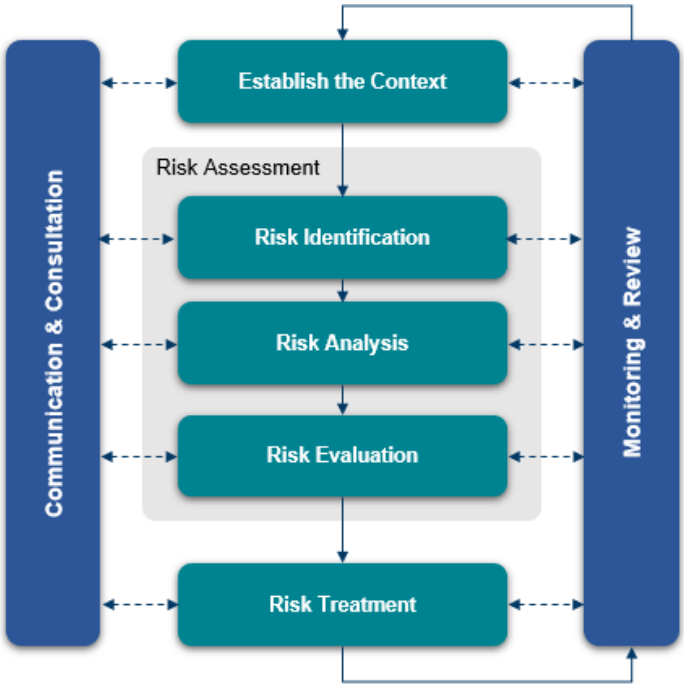


Figure 9.2 Risk Management Framework

It is important to understand that risk does not necessarily need to be avoided, but understanding the risk throughout the system ensures that the potential rewards should be sufficient to proceed with the exposure to the risk, whilst also considering EQL's Risk Appetite.

EQL's network risk framework is required to:

- Understand the performance of assets through risk assessments and
- Enable prioritisation of scarce resources to maximise the efficient delivery of the AM Objectives.

By reviewing and assessing assets and AM activities, EQL can determine the extent to which the AM Objectives are being achieved and what actions can be taken to better align its activities with its objectives.

EQL is in the process of evolving a decision making framework, to better include consideration of the value of investment benefits such as value of customer reliability (VCR) and quantification of safety risks. Whilst the current approach informs recommended solutions and optimal individual investment timing, elevating visibility of these assessments to a portfolio level is the next step to further assist portfolio prioritisation or optimisation. This is explained further in Section 10.

9.3 Lifecycle Delivery

Lifecycle delivery is the element in which assets are acquired, operated, maintained and disposed of in accordance with the AMPs. The activities of owning and operating assets (construction and commissioning, fault response, decommissioning etc.) are undertaken as part of this element. Areas such as standards development and compliance, network planning, systems engineering, maintenance and operational manuals are also developed in this element to ensure successful delivery of the AMPs.

The majority of the direct asset related expenditure occurs in this element where assets are acquired, maintained and disposed of. A focus on the integration of activities across the lifecycle can enable EQL to reduce avoidable downstream costs. Good design, procurement and asset operation practice all reduce the levels of asset corrective maintenance, and increase asset reliability and availability, delivering associated value at a lower cost. The general approach is illustrated in Figure 9.3:

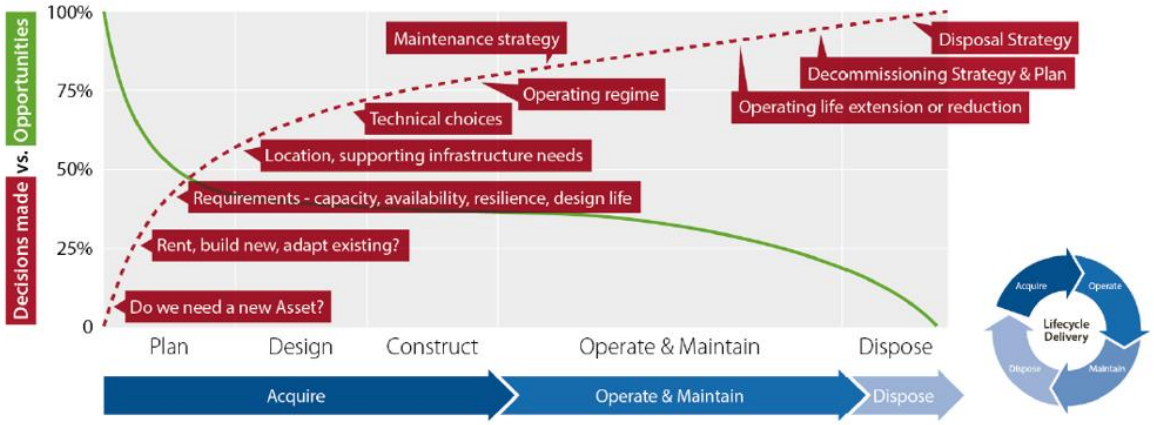


Figure 9.3 Decision Making Across Asset Lifecycle

The programs of maintenance, refurbishment and replacement required to outwork the strategies of the AMPs are documented in the PoW and reflected in corporate management systems. Programs are coordinated to address the requirements of multiple asset classes at a higher level such as a substation site or feeder to provide delivery efficiency and reduce travel costs and overheads. The PoW documents provide a description of works included in the respective programs, as well as the forecast units.

9.4 Organisation and People

This element introduces and embeds AM thinking and practice into all areas of EQL. Of particular importance is the organisational leadership, structure and cultural aspects as well as procurement and supply chain such that whole of life costs are considered in sourcing labour and materials. In this way, this element is central to establishing AM practice within EQL.

While EQL has always undertaken a range of AM activities, aligning the system to ISO 55000 will formalise the practice of it within the organisation and ensure that data-driven risk-based decision making and effective AM is undertaken at all levels of EQL. This alignment will question the traditional ways of thinking within the organisation, but importantly any changes in practice will be supported by EQL leadership. The initial stages of its implementation will be driven by Engineering Division, where the focus must be on developing the capability, knowledge, skills and experience in EQL's people. As best practice is implemented more broadly, EQL will implement an integrated approach to the system where all divisions have key roles in implementing good AM practice.

Procurement and supply chain areas are vital cogs in supporting the delivery and success of asset strategies and plans required to deliver the AM Objectives.

9.5 Asset Information

Asset information is a combination of data about assets and the context in which they operate. This information is used to inform decisions about how our network assets are managed. Data and information requirements, including quality requirements, need to be identified and defined in asset strategies to ensure data that is collected, organised and analysed in ways that fully support our AM Objectives.

Data-driven, risk-based decision making is central to EQL's AM System and asset data and information is a key enabler across the breadth of AM Activities. As such, EQL has a range of asset information systems that collect, store, process and analyse network data and information.

EQL is currently transitioning from legacy Ergon Energy Network and Energex systems to enterprise-wide ERP (Enterprise Resource Planning), EAM (Enterprise Asset Management), Geospatial Information System (GIS), Design Tools and Asset Inspection technology and processes. This transition will be enabled through the alignment of data standards and introduction of integrated network models designed to deliver efficiencies for managing our physical network assets. This will be most evident in the benefits to be realised by our operational teams as data-acquisition, sharing, integration and utilisation becomes more efficient, effective, accurate and timely.

Collecting and analysing accurate data, at the required granularity, is essential in ensuring that all AM Activities align with the AM Objectives. In accordance with the principles of ISO55000 EQL recognises the value and importance of applying a total lifecycle approach for managing data across our 5.5 million network assets. Having integrated systems capable of sharing this information across the business, with our customers and stakeholders is essential for positioning our business to achieve our Future Grid objectives and deliver a decarbonised electric life for EQL customers.

9.6 Performance Monitoring

The AM System is monitored through several Key Performance Indicators reported through the corporate performance management gateway.

The monitoring and reporting of the network program of work forms part of the Asset Management System and focuses on three key areas:

1) Measuring and reporting of actual performance against annual targets for defined key result areas;
2) Evaluating current and emerging risks and issues associated with delivery of the program of work; and
3) Instigating actions to mitigate risks that are impairing performance.

Operational and portfolio level committees have accountability for ensuring that the annual program of work performance targets and overarching corporate goals are met. Energy Queensland has Key Performance Indicators (KPIs) to ensure the Program of Work is being effectively delivered while maintaining performance standards and customer commitments.

The Operational Delivery Index comprises of five measures to track effectiveness and efficiency in the delivery of network and customer investments.

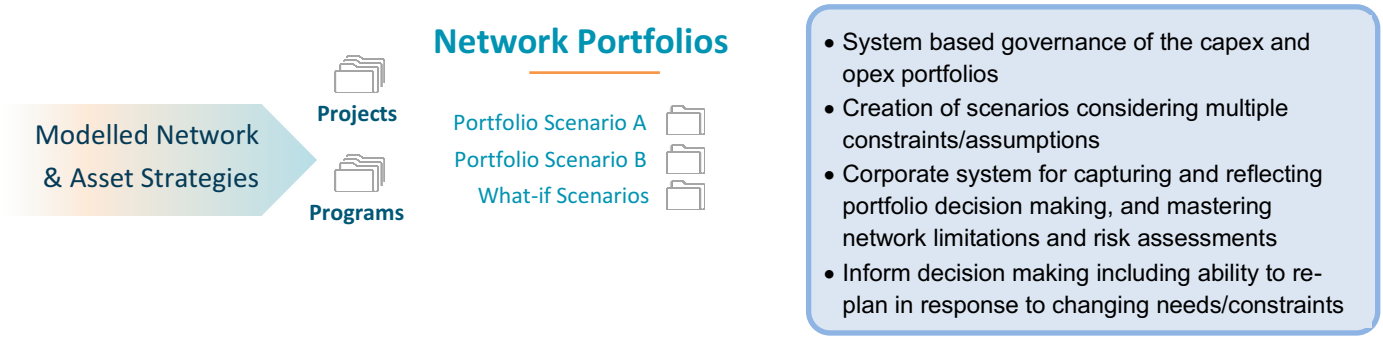
Figure 9.6 Delivery Performance monitoring

10 Evolution of the Asset Management Investment Decision Making Process

Energy Queensland recently incorporated all network investments for considerion by the business into a single portfolio management tool. This brought together information for portfolio level investment decision making, and serves as the source system for network limitations and risk assessments. This has facilitated the ability to develop multiple investment scenarios, portfolios of investment types, and to a lesser extent consider alternatives within an investment (investment options), coupled with respective expenditure and risk outcomes. The system also allowed for the application of various constraints in developing investment plan and allows for improved re-planning of portfolios in response to changing constraints and needs. Outputs include modelling of the impacts of various scenarios on resource demand, expenditure, and risk mitigation.

The schematic below illustrates the next stage of the maturity roadmap:

Current State:



Future State:

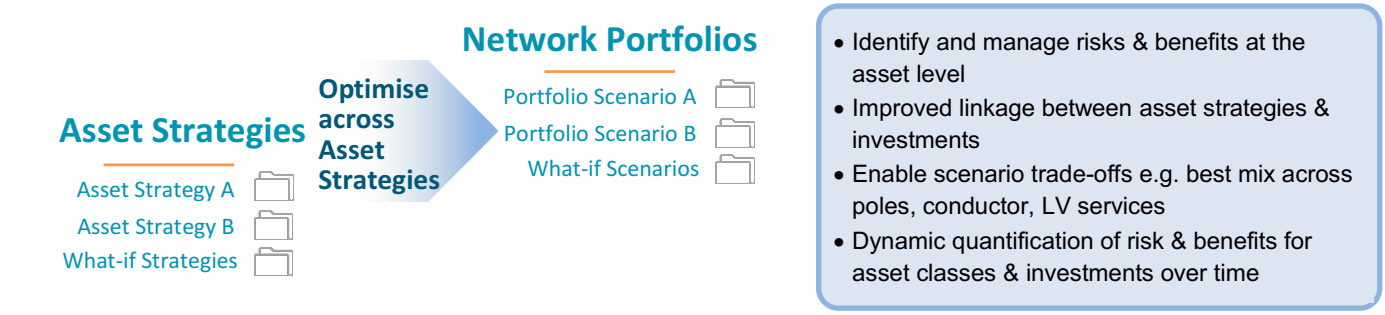


Figure 10.1.3 Maturity Roadmap