Asset Management System – Overview

Asset Management System

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Disclaimer

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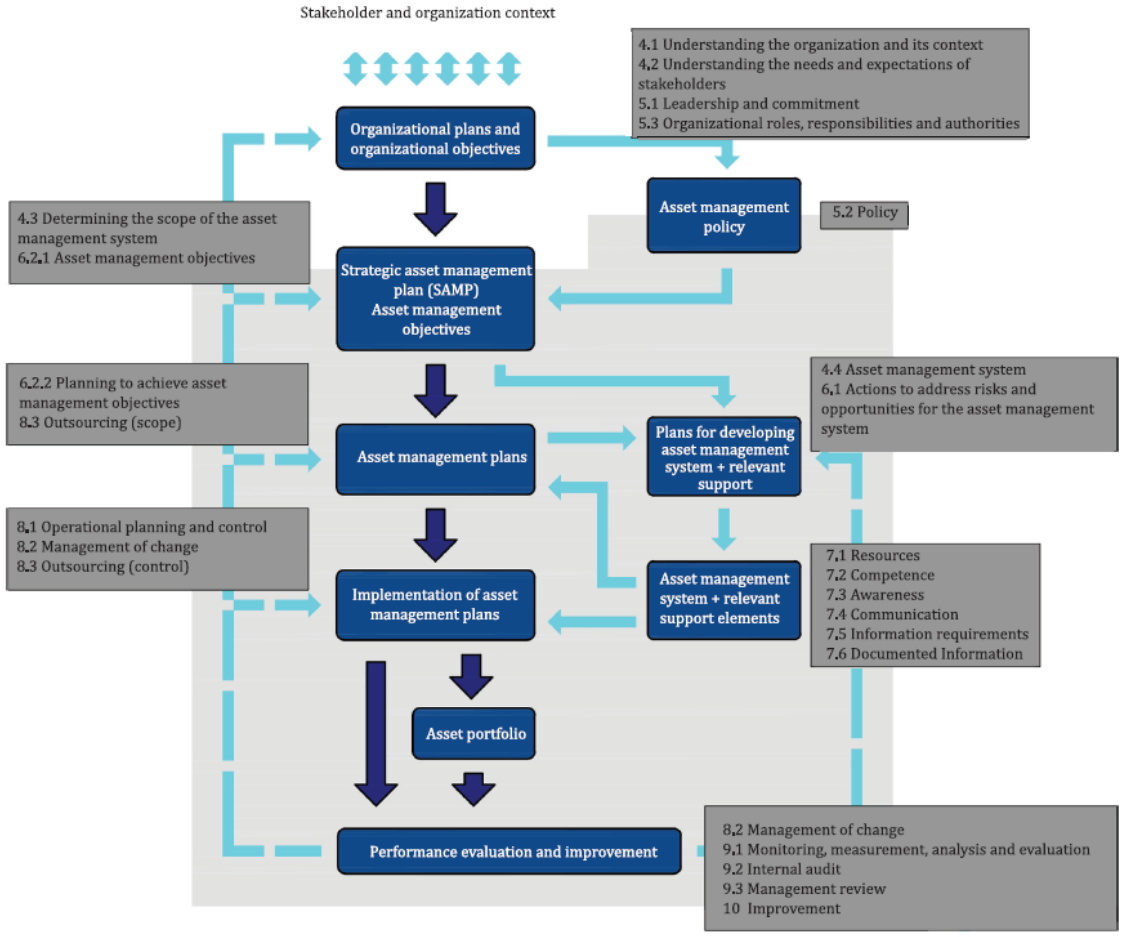
1 PURPOSE

The purpose of this document is to provide an overview of the systems, policies, strategies, plans, standards, processes and procedures that have been integrated in an asset management system by which AusNet Services manages the performance of its gas and electricity networks and the assets forming of those networks.

2 STANDARD

Until April 2014, the AusNet Services' asset management system conformed to the requirements of the British Standards Institute's Publicly Available Specification PAS 55-1:2008 for Asset Management.

This asset management system now conforms to the requirements of ISO 55001 *Asset Management – Management System: Requirements*, as illustrated in Figure 1. The dark grey boxes highlight the associated clauses from the standard.



NOTE 1 Only the primary connections are shown to avoid over-complexity.

NOTE 2 This does not aim to repeat the distinction between asset management and an asset management system: it is a connections view showing directions of influence.

NOTE 3 The grey highlighted box designates the boundary of the asset management system.

Figure 1: Relationship between the key elements of an asset management system

3 AUSNET SERVICES

The AusNet Services group is a large diversified energy infrastructure business employing more than 1,600 people based in Melbourne, Victoria, Australia.

AusNet Services is a publicly listed company listed on both the Australian Securities Exchange (ASX: AST) and the Singapore Exchange (SGX: X04). AusNet Services' securities are 31.1% owned by Singapore Power Limited (SPI) and 19.9% by State Grid International Development Limited (SGID); with the remaining owned by ASX and SCX-ST investors.

Mondo is a commercial utility services division within AusNet Services. Mondo provides a range of infrastructure, business and community services to Australian electricity, water, gas and telecommunications industries.

Via a gas distribution licence issued in 1997, AusNet Services owns and operates Victoria's fastest growing natural gas network. It serves more than 742,000 customers via more than 12,000km of underground pipelines in south-west Victoria. This network includes five of Victoria's eight high-growth areas.

AusNet Services owns and operates 184km of natural gas transmission pipelines and several reduction stations licenced by the Department of Environment, Land, Water and Planning (DELWP) under the Pipelines Act 2005.

AusNet Services holds an electricity distribution licence issued in 1994. This licence authorises the distribution of electricity to more than 758,000 customers in northern and eastern Victoria via 60,000km of powerlines.

AusNet Services holds an electricity transmission licence issued in 1994. The licence authorises the transmission and supply of electricity using more than 6,500km of extra high voltage transmission lines connecting power generators to electricity distributors and large customers throughout Victoria. This network also interconnects New South Wales, South Australia and Tasmania in the National Electricity Market.

4 INDUSTRY CONTEXT

4.1 National Regulatory Framework

The economic regulation of these energy delivery networks is subject to a national regulatory framework, which is contained in the National Electricity Rules and National Gas Rules and governed by the National Electricity Law and National Gas Law.

The Australian Energy Market Commission (AEMC) has responsibility for development of the national energy rules.

4.1.1 National Electricity Objective

The objective of the National Electricity 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.

4.1.2 National Gas Objective

The objective of the National Gas Law is to promote efficient investment in, and efficient operation and use of, natural gas services for the long-term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of natural gas.

4.2 Australian Energy Regulator

The Australian Energy Regulator (AER) is responsible for regulation of industry participants in accordance with the Rules.

The AER's functions and powers include:

- regulating the revenues of transmission and distribution network service providers;
- monitoring the electricity and gas wholesale markets;
- monitoring compliance with the national laws, national rules and national regulations;
- investigating breaches or possible breaches of provisions of the national law, rules and regulations and instituting and conducting enforcement proceedings against relevant market participants;
- establishing service standards for network service providers;
- establishing ring-fencing guidelines for business operations with respect to regulated transmission and distribution services.

4.3 Energy Safe Victoria

Energy Safe Victoria (ESV) is a technical and safety regulator responsible for the safe generation, supply and use of electricity, gas and pipelines in Victoria.

The objectives of ESV under the Electricity Safety Act are:

- To ensure the electrical safety of electrical generation, transmission and distribution systems, electrical installations and electrical equipment;
- To control the electrical safety standards of electrical work carried out by electrical workers;
- To promote awareness of energy efficiency through energy efficiency labelling of electrical and energy efficiency regulation of electrical equipment;
- To promote the prevention and mitigation of bushfire danger;

- To protect underground and underwater structures from corrosion caused by stray electrical currents; and
- To maintain public and industry awareness of electrical safety requirements.

The objectives of ESV under the Gas Safety Act are:

- To ensure the safety of the conveyance, sale, supply, measurement, control and use of gas;
- To control the safety standards of gas works;
- To maintain public and industry awareness of gas safety requirements; and
- To promote awareness of energy efficiency through energy efficiency labelling of gas installations, appliances and components and energy efficiency regulation of gas installations, appliances and components.

4.4 Australian Energy Market Operator

The Australian Energy Market Operator (AEMO) is responsible for:

- procuring bulk shared network services from AusNet Services and other electricity transmission and gas transmission network providers;
- providing transmission use of system services to electricity and gas transmission customers (including administering transmission pricing); and
- planning and requisition of augmentation to the shared electricity and shared gas transmission networks.

4.5 Network Specific Context

Network specific issues are described in the relevant network asset management strategies (i.e. AMS 10-01, AMS 20-01, AMS 30-01 and AMS 40-01).

5 STAKEHOLDERS

5.1 Stakeholder Expectations

The following table summarises key stakeholders and their expectations of the service provided by the AusNet Services' energy delivery networks.

Table 1: Stakeholder Expectation Summary

Asset Owners	• Compliance with contract • Reliable information
Connected Parties (energy consumers, electricity generators and gas producers, other network service providers)	• Network access • Efficient service costs with minimum increases • No network related fire or safety issues • Reliable, uninterrupted energy supply • Efficient, well planned investment and expenditure • Pro-active and responsive network planning
Community	• Public safety • Reliable and secure energy supply • Environmental performance within Code
Employees and contractors	• Safe workplace • Reward and recognition • Skill development
Shareholders	• Return on investment • Growth in investment value • Commensurate opportunities, liabilities and risks
Energy Retailers	• Reliable information • Efficient service costs
Network Safety Regulator	• Compliance with Acts, Regulations and Codes • Improving safety performance • Transparent processes • Reliable information
Economic Regulator	• Compliance with Law, Rules and Codes • Efficient service costs • Transparent processes • Reliable information
State and Federal Government	• Compliance with Acts and Regulations in particular Occupational Health and Safety and Environmental obligations • Support economic development • Improving safety performance • Efficient service costs
Local Government and VicRoads	• Coordinated infrastructure development • Coordination of works • Public land reinstatement

The performance of each regulated energy network is recorded in various asset information systems. Further information is provided in Section 7.2.

The performance of each regulated energy network is reported to the AER in accordance with the specifications established in the Regulatory Information Notification, Regulatory Accounts, and Non-Financial Regulatory Accounts.

The principal monthly and annual reports to ESV are in accordance with the Electrical (or Gas) Safety Performance Reporting Guidelines.

Compliance to reporting requirements is monitored through the Compliance Management module of Enablon to ensure that requirements are met.

5.2 Customer Engagement

At AusNet Services, our purpose is to empower our customers and their energy future.

This reflects the essential nature of the services we provide for households, businesses and communities. It also recognises that in a sector experiencing widespread change, customers are playing a central role, and their choices and behaviour will shape the future of the electricity market.

To deliver on our purpose, it has been a strategic priority of the business to build trust and earn the respect of our customers. In recent years, a significant commitment from the business to building a truly customer focused, modern energy business, has driven changes in the way we deliver our services and respond to their evolving needs.

Traditionally, decisions were made in conjunction with regulators and other stakeholders, on behalf of customers, but without direct customer input, albeit in the long-term interests of customers. What has emerged in recent years is a need to directly engage with our customers to better understand and anticipate their evolving needs and preferences – what they say and, importantly, what they do.

Since 2017, AusNet Services has engaged more extensively and closely with customers than ever before. This includes extending our focus on customers to improving satisfaction, with a sharper focus on customer experience.

Key to this cultural shift has been the implementation of a new and externally captured Customer Satisfaction measure in February 2018. The measure focuses on tracking customers' levels of satisfaction across key customer journeys for each of the regulated distribution networks and is benchmarked against industry peers.

Since its implementation, the measure has been successful in identifying the key drivers of dissatisfaction among our gas and electricity customers. The data has also been used to inform the pipeline of work designed to improve the customers experience and to set performance targets that motivate the business to strive for greater levels of customer satisfaction.

For the 2021-25 revenue setting process, AusNet Services has undertaken a new approach to ensure our service priorities and expenditures plans are informed by customer needs. With support from the Australian Energy Regulator and Energy Consumers Australia, we established a Customer Forum, comprising highly skilled customer representatives to work with us to develop a customer-focused proposal.

The Customer Forum has helped guide a substantial customer research program and a range of initiatives to improve customer experience outcomes for customers, such as improving communications and customer-facing processes (e.g. managing outages) and strengthening the accountability of our staff for improving customer outcomes.

More broadly, AusNet Services has adopted a pragmatic approach to customer engagement, focused on embedding ongoing engagement as part of our business-as-usual activities.

At a strategic level, since 2016, AusNet Services established a Customer Consultative Committee to provide an ongoing forum in which a range of customer issues can be discussed by a select group of community and customer representatives. The purpose of the committee is to gain actionable customer insights to inform decision making and execution of strategy.

At an operational level, customer engagement is undertaken in a decentralised manner across a number of functions and teams from the customer contact centre to operations and corporate affairs.

More recently, AusNet Services established a customer experience team to deliver a pipeline of work designed to improve the customers experience across our Electricity, Gas and Transmission businesses. As part of this team, new customer relationship roles were established as a key interface to large commercial and industrial customers and community liaison.

5.3 Stakeholder Engagement

At a project level, AusNet Services has developed a stakeholder engagement framework for key projects (SEF 20-01). It provides a protocol for engaging with external stakeholders throughout the life cycle of a project.

5.4 CSIRO/ENA Electricity Network Transformation Roadmap

The Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia's independent federal government agency responsible for scientific and Energy Networks Australia (ENA), the peak national body representing gas distribution and electricity transmission and distribution businesses in Australia, partnered to develop an Electricity Network Transformation Roadmap released in April 2017.

The Roadmap was initiated recognising that:

- Australia's electricity networks are facing complex challenges that impact the economic efficiency and technical stability of the system;
- Australia's electricity system will require expenditure of almost $1000 billion by current service providers, new entrants and customers by 2050; and
- The type and scale of benefits gained from this unprecedented investment will vary greatly depending on decisions made early in this period and particularly during the decade from 2017-27.

The Electricity Network Transformation Roadmap provides detailed milestones and actions to guide an efficient and timely transformation over the 2017-27 decade.

These milestones and actions are an input into business plans, asset management strategies and asset management plans.

5.5 Gas Vision 2050

The Gas Vision 2050 report was produced by key organisations[1] representing Australia's gas sector. It reflects their ambitions and vision for Australia to turn its gas resources into products and services that will enhance national prosperity while achieving carbon neutrality.

The Australian energy sector is undergoing a major transformation. One of the major drivers for this transformation is the decarbonisation of the energy sector in line with the COP21 Paris agreement.

Achieving these emission reductions will require major changes to the energy system that will include how energy is used in households and by industry, as well as to the energy mix for

[1] Energy Networks Australia, Australian Petroleum Production and Exploration Association, Australian Pipelines and Gas Association, Gas Energy Australia and Gas Appliance Manufacturers Association of Australia

power generation. This needs to be carefully managed to ensure an optimum solution is implemented that balances environmental outcomes (clean), energy security (reliable) and costs (affordable), a challenge that is known as the energy trilemma.

Gas Vision 2050 highlights how gas and renewables can support each other to achieve a near zero carbon energy sector by 2050, including a decarbonisation pathway for gas beyond 2050.

This document will inform business plans, asset management strategies and asset management plans.

6 CORPORATE BUSINESS PLAN

6.1 Core Capability

AusNet Services' core capability is:

We move energy.

6.2 Our Purpose

AusNet Services' business purpose is:

Connecting communities with energy and accelerate a sustainable future.

6.3 Our Strategy

Our strategy is:

Best energy networks, growing through connecting people with new energy.

6.4 Strategic Objectives

In early 2021, the strategic objectives were updated. Four enduring priorities have been identified as Ausnet's updated purpose and strategy:


Our customers


Our people


Operational Excellence


Growth

1. Our passion for customers guides us in everything:
    a. Always start with customer needs; and
    b. Deliver a seamless customer experience; and
    c. Strive to be the connector of choice.

2. Our people feel energised, they are thriving and supported to achieve:
    a. We win with the best talents; and
    b. Our culture supports people to lead & achieve; and
    c. Our curiosity & diversity drives results

3. We achieve operational excellence through finding the best and safest way:
    a. Productivity & reliability for customers; and
    b. Insightful action driven by data; and
    c. Innovate for continual improvement.

4. We accelerate growth through the energy transition:
    a. Invest for a sustainable future; and
    b. Enable the energy transition; and

c. Leader in energy infrastructure and services.

6.5 Focusing Our Efforts

To ensure the success of our strategy, our efforts have been prioritised as shown in Figure 2 and Table 2.

Table 2: Focusing our efforts.

Majority effort	Significant effort	Small bets
Driving more value from our distribution, transmission, gas and contracted infrastructure assets	Activities that grow our emerging businesses and solve energy problems for industrial and commercial customers	Pursue new opportunities to add growth to our portfolio.
Expected timeline to deliver value: 1-2 years	Expected timeline to deliver value: 2-5 years	Expected timeline to deliver value: 5+ years

Figure 2: Focusing our efforts

The focussed effort is being delivered through the AusNext transformation program.

6.6 Our Values

AusNet Services has four company values:

1. We work safely;
2. We do what's right;
3. We are one team; and
4. We deliver.

Our values express the beliefs and principles we agree to share at AusNet Services – they guide our behaviours when working together and when conducting business with people outside our organisation.

7 SCOPE OF THE ASSET MANAGEMENT SYSTEM

The scope of this asset management system includes the management functions, asset information systems and the physical assets, which form the following energy networks, owned and operated by AusNet Services in the state of Victoria:

- Regulated Electricity transmission network;
- Regulated Electricity distribution network; and
- Regulated Gas network.
- Unregulated Electricity transmission network

The scope of this asset management system includes the Wonthaggi Desalination Plant Electricity Transmission and Connection Assets, which are operated and maintained by AusNet Services in accordance with specific contracts with the state of Victoria.

The scope of the asset management system includes all employees, Delivery Partners and Service Providers undertaking activities on AusNet Services assets included in the scope of the asset management system.

Delivery Partners and Service Providers will ensure that their management systems complement those of AusNet Services and will interface with AusNet Services' Asset Information Systems (Section 7.2).

7.1 Functions

The asset management system includes the following functions for each network:

1. Creation and acquisition of assets;
2. Commissioning of assets;
3. Operation of the network;
4. Inspection and maintenance;
5. Repair, refurbishment and replacement of assets; and
6. Decommissioning, removal and disposal of assets.

Where appropriate, the asset management system includes linkages to human, financial and intangible assets necessary for the holistic management of the energy network assets to meet the objectives of the AusNet Services business plan.

7.2 Asset Information Systems

The key asset information systems within the scope of this asset management system include:

1. SAP Enterprise Asset Management (EAM) – Asset data information system for assets in each network;
2. SAP Enterprise Resource Planning (ERP) – Task, project and program information system for managing physical change in each network;
3. Enablon Compliance Management System (CMS) – Legal and regulatory compliance management system;
4. Enablon Issue Management System (IMS) – Unplanned incident management and reporting;
5. Distribution Outage Management System (DOMS) – real time network configuration and status management system. This includes PowerOn Fusion and PowerOn Gas;
6. Geographic Information System (GIS) – containing spatial information about electricity, gas and telecommunication assets. This includes the systems SDMe, SDMg, SDMt, SpatialView, SAMS, SAMS Ops and LatLonGo;

7. Objective – Engineering drawing record management system;
8. Enterprise Content Management (ECM) – Written document management system;
9. Protection and Control Settings Information System (PACSIS) – Protection settings database; and
10. Supervisory Control and Data Acquisition (SCADA) – Real time information on network status.
11. DnA Platform

Figure 3 shows the relationship between these asset information systems.

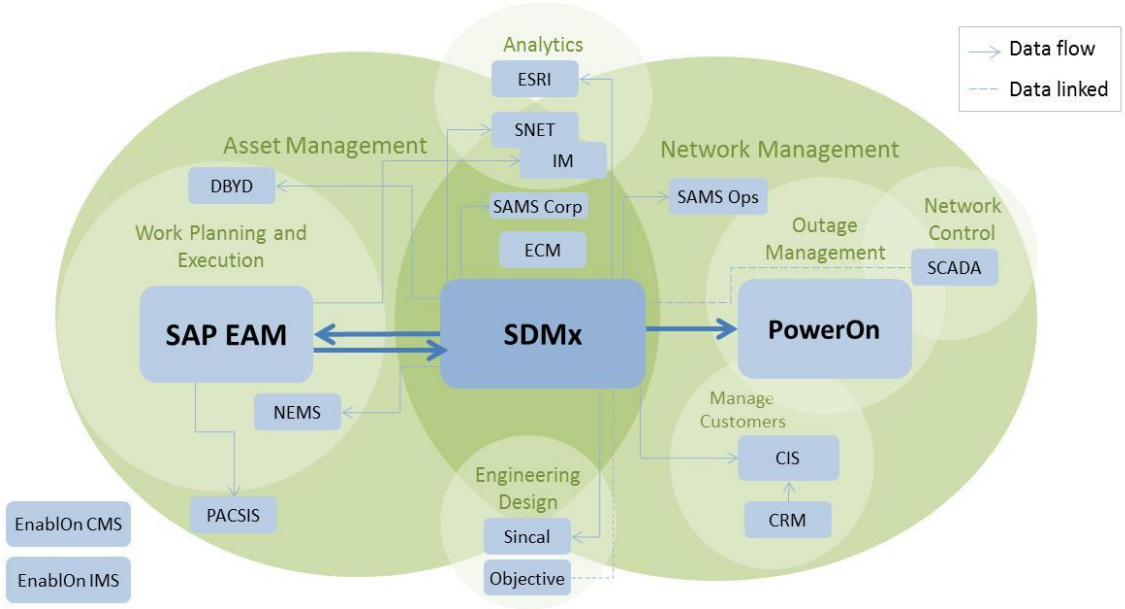


Figure 3: Relationship between asset information systems

7.3 Transmission Network

The electricity transmission network interconnects generators, distributors, high voltage customers and the transmission systems of neighbouring New South Wales, South Australia and Tasmania. It serves over six million Victorians living in an area of approximately 227,600 square kilometres.

The electricity transmission network operates at 500kV, 330kV, 275kV, 220kV and 66kV and includes those assets summarised between the ‘point of connection’ with generators and distribution companies illustrated in blue in Figure 4.

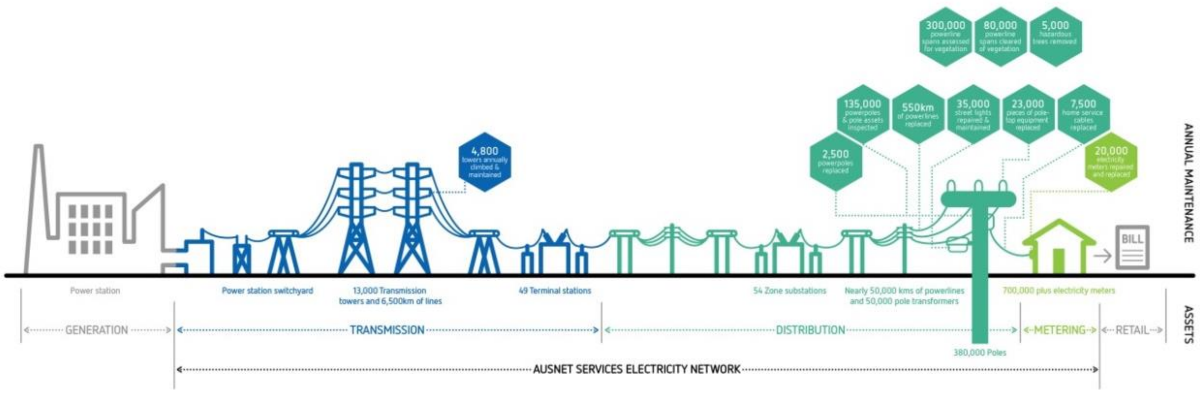


Figure 4: Illustration of Electricity Transmission Network

More specifically, the electricity transmission sites and facilities include those:

1. Listed in the Network Agreement between AusNet Services (formerly PowerNet Victoria) and AEMO (formerly the Victorian Power Exchange) 1994;
2. Illustrated on AusNet Services' system diagram T1/209/84;
3. Listed in 1994 Connection Agreements between AusNet Services and connected parties, largely consisting of generators, direct connect customers and distributors;
4. Listed in various supplementary network and connection agreements, detailing AusNet Services' unregulated transmission assets; and
5. Wonthaggi Desalination Plant Electricity Transmission and Connection Assets.

7.3.1 Asset Location

The electricity transmission network location, configuration and voltages are illustrated in Figure 5.

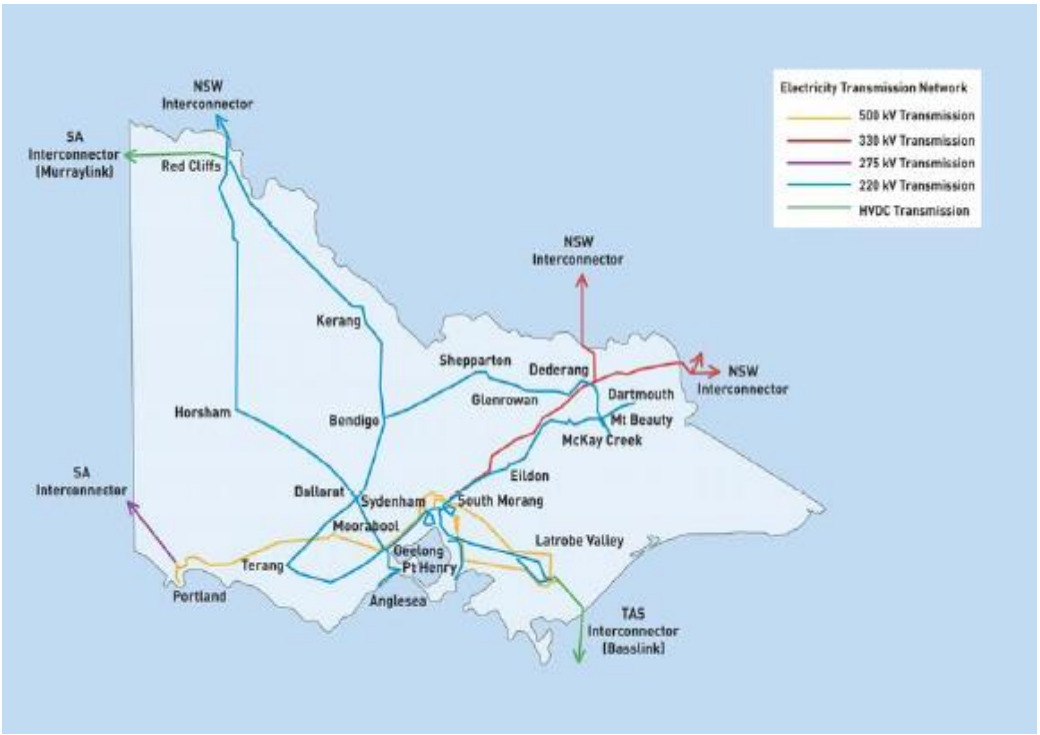


Figure 5: Victorian Electricity Transmission Network

Figure 5 includes the following interstate connections:

1. Two 330kV lines from Dederang Terminal Station, to the Murray Switching Station (NSW)
2. One 330kV line from Wodonga Terminal Station to Jindera (NSW)
3. One 220kV line from Red Cliffs Terminal Station to Buronga (NSW)
4. Two 275kV lines from Heywood Terminal Station to South East Substation (SA)
5. One 220kV circuit from Red Cliffs Terminal Station to the 300kV DC link to Berri (SA)
6. One 500kV circuit from Loy Yang to the 400kV DC link to Bell Bay (TAS).

7.3.2 Asset Summary

A summary of the assets forming the Victorian electricity transmission network can be found in AMS 10-01 *Victorian Electricity Transmission Network Asset Management Strategy*.

7.3.3 Asset Function

A summary of the functions of assets forming the Victorian electricity transmission network can be found in Section 5 of ESMS 10-01 the Electricity Safety Management Scheme for this network, which has been accepted by Energy Safe Victoria.

7.4 Electricity Distribution Network

The electricity distribution network comprises a ‘sub-transmission’ network constructed as overhead line and operating at 66kV and a ‘distribution’ network of overhead lines and underground cables, which includes a range of operating voltages, including 22kV, 12.7kV, 11kV and 6.6kV, as well as 240/415V and 240/480V.

The sub-transmission network is supplied from the Extra High Voltage (500kV, 330kV, 220kV) transmission network at 11 terminal stations (connection points). It consists of 2,500 km of 66kV lines made up more than 100 individual circuits. These are predominantly configured as loops back to the terminal station to maximise reliability. The sub-transmission network supplies electricity to zone substations which transform the voltage for distribution in the surrounding area.

The electricity distribution network is configured as illustrated in yellow in Figure 6.

7.4.1 Asset Location

The electricity distribution network is located across the eastern half of Victoria and includes outer eastern Melbourne metropolitan suburbs as illustrated in Figure 6.

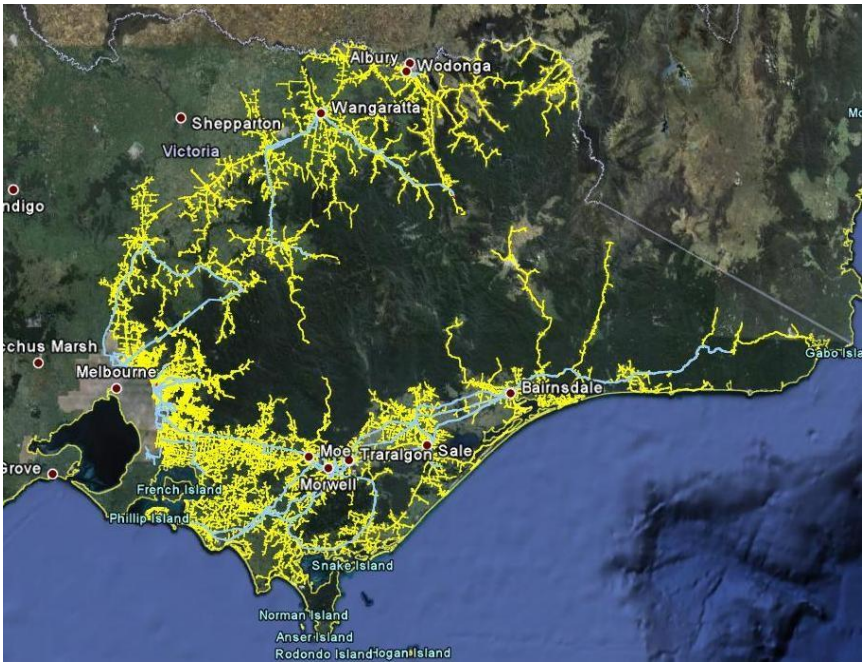


Figure 6: Electricity Distribution Network Location

This electricity distribution network includes approximately 230km of electricity distribution network located in the Bendoc area of far eastern Gippsland which supplies over 200 customers from three connection points near the New South Wales-Victoria border, via medium voltage feeders operated by Essential Energy in New South Wales.

7.4.2 Asset Summary

A summary of the assets forming the electricity distribution network can be found in AMS 20-01 *Electricity Distribution Network Asset Management Strategy*.

7.4.3 Asset Function

A summary of the functions of assets forming the electricity distribution network can be found in Section 5 of ESMS 20-01 the Electricity Safety Management Scheme for this network.

7.5 Gas Networks

The gas networks consist of 184km of licensed transmission pipelines, operating at pressures up to 2,800kPa, and approximately 12,000km of distribution mains and services, operating at high, medium, and low pressures.

AusNet Services is responsible for the distribution of gas from the principal transmission system to the end consumer, as illustrated in Figure 7.

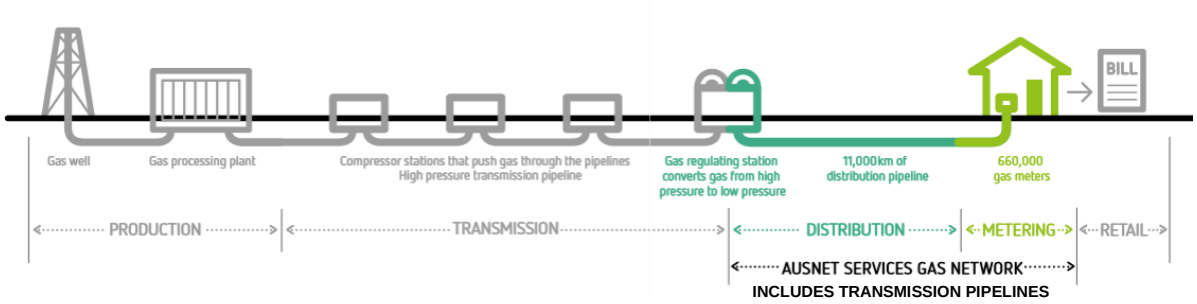


Figure 7: Gas Network Configuration

7.5.1 Asset Location

AusNet Services' gas network serves the western half of Victoria, from the Hume Highway in metropolitan Melbourne, west to the South Australian border and from just north of Bendigo and Horsham, south to the coast as illustrated in Figure 8.

AusNet Services also owns an LPG vapour reticulation network at Mt Baw Baw.

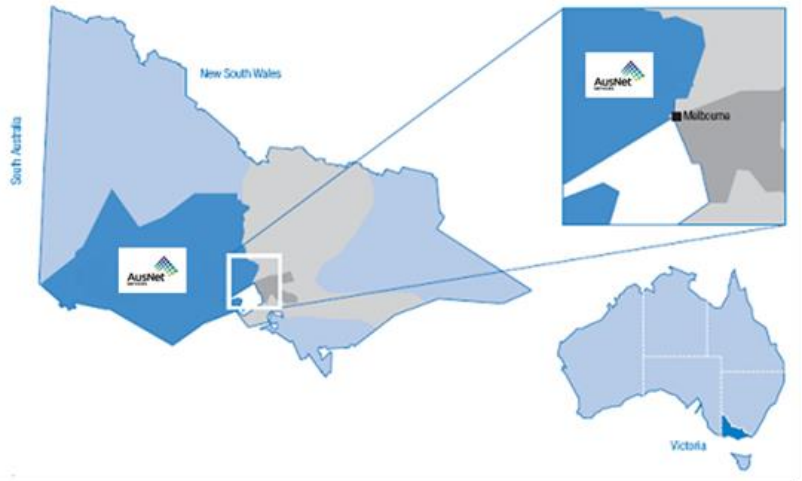


Figure 8: Gas Network Location

7.5.2 Asset Summary

A summary of the assets forming this gas network can be found in AMS 30-01 *Gas Networks Asset Management Strategy*.

7.5.3 Asset Function

A summary of the functions of assets forming this gas network can be found in Section 2 of GSC 10-00 Gas Safety Case for this network.

7.6 Unregulated Electricity Transmission Network

7.6.1 Asset Location

The AusNet Services Unregulated Electricity Transmission Network asset locations is shown below in Figure 9.

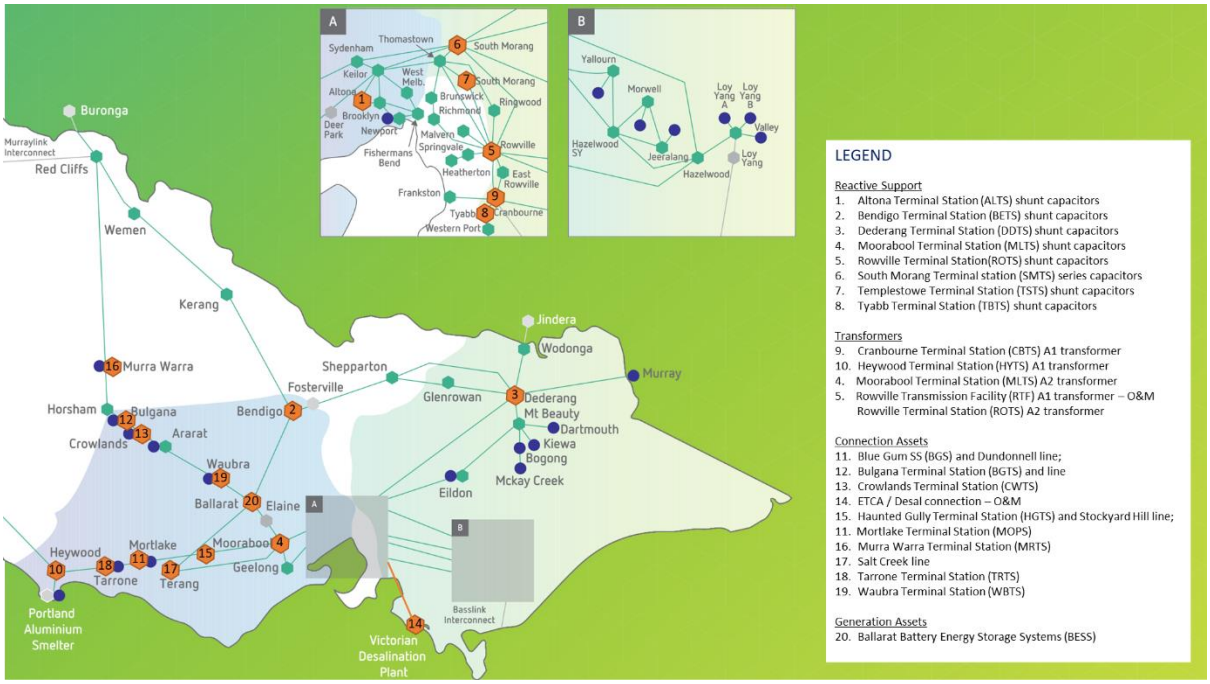


Figure 9: Unregulated Electricity Transmission Network Asset Location

7.6.2 Asset Summary

A summary of the assets forming the unregulated electricity transmission network can be found in AMS 40-01 Unregulated Electricity Transmission Network Asset Management Strategy.

7.6.3 Asset Function

A summary of the functions of the assets forming the unregulated electricity transmission network can be found the AMS 40-01 Unregulated Electricity Transmission Network Asset Management Strategy.

7.7 Exclusions

The scope of this asset management system excludes activities related to the planning of the Victorian electricity transmission network which is the joint responsibility of:

- AEMO; and
- Connected Parties, including Distribution Companies and Generating Companies.

This asset management system does not include the operation and maintenance of the electricity assets not owned by AusNet Services, located at third party owned Terminal Stations (such as Deer Park or Elaine Terminal Station) or those third-party assets listed below, that are located within existing AusNet Services Terminal Stations;

- Shunt capacitor banks at Wodonga terminal station;
- Shunt capacitor banks at Dederang terminal station;

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8 ASSET MANAGEMENT SYSTEM

8.1 Asset Management Framework

An overview diagram of the asset management framework is given in Figure 10.

The asset management framework is informed by a regular assessment of the external business environment and the AusNet Services' five-year business and financial plans.

These plans influence the asset management policy and the development of the 20-year asset management strategies.

The five-year asset management plans are guided by the organisational plans and objectives and the asset management strategies and asset management objectives.

These asset management plans identify the management of projects and programs of change and the application of standards to the life cycle of network assets.

The framework is completed with monitoring and evaluation of performance to identify improvement opportunities throughout the entire asset management framework.

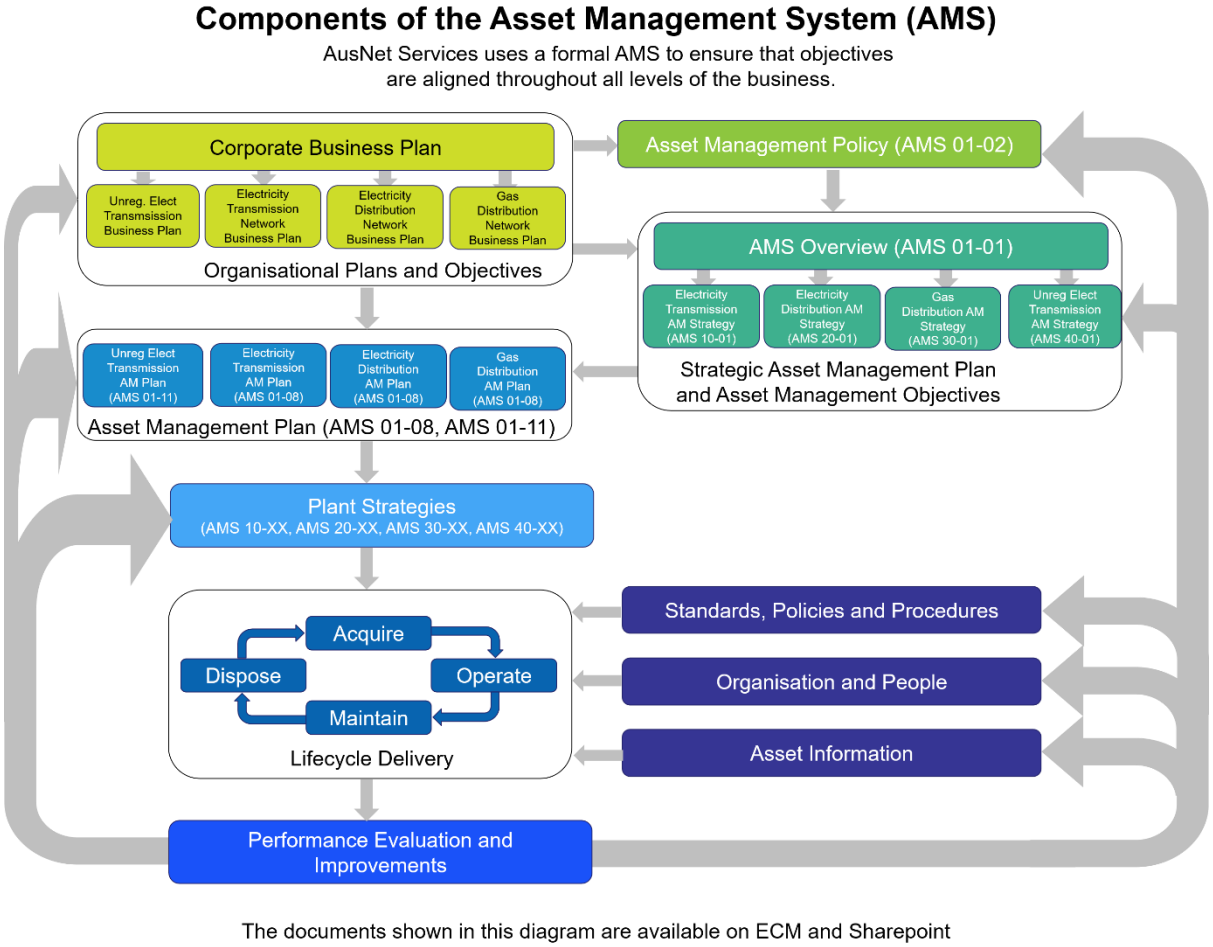

Figure 10: Asset Management Framework

This document (AMS 01-01) and the top-level Asset Management Strategies for each network (AMS 10-01, AMS 20-01, AMS 30-01 and AMS 40-01) form a Strategic Asset Management Plan (SAMP) as defined in ISO 55001:2014.

AMS 01-08 *Asset Management Plan and AMS 01-011 Unregulated Electricity Transmission Asset Management Plan* combined with the process, system and plant strategies shown in Figure 10 form the asset management plans as described in ISO 550001 Section 6.2.2 *Planning to achieve asset management objectives*.

8.2 Asset Management Strategies

AusNet Services has an asset management strategy for each energy network.

Each asset management strategy consists of a suite of documents consistent with and aligned to the Asset Management Policy and the AusNet Services' Network Business Plans.

The highest-level document in each suite of documents is the asset management strategy, namely:

- AMS 10-01 Asset Management Strategy (Electricity Transmission)
- AMS 20-01 Asset Management Strategy (Electricity Distribution)
- AMS 30-01 Asset Management Strategy (Gas Networks)
- AMS 40-01 Asset Management Strategy (Unregulated Electricity Transmission Network)

Each asset management strategy brings together external influences, investment drivers, business values and asset management objectives with a summary of the resources and the strategies to deliver sustained performance for the benefit of stakeholders.

Below the asset management strategies are the process, system and plant strategies. These documents detail the assets, issues and investment drivers behind each technical, procedural and support system strategy. They provide the analysis behind each strategy necessary to achieve agreed performance outcomes.

The final level of documentation in the suite outlines the implementation of the asset management strategy. At this level, strategies are integrated with AusNet Services' business systems and practices. These documents provide direct links between asset management strategies and company standards, procedures, support system developments, work programs and plans.

8.3 Asset Management Plans

In conjunction with a Business Plan and a Finance Plan; each year AusNet Services prepares an Asset Management Plan (AMP) for the forthcoming five-year period.

The AMP is endorsed by the Asset Management Committee. The endorsed plan is then submitted together with the Finance Plan and the Business Plan to the AusNet Services Board for approval during the fourth quarter of each financial year.

- The asset management plan summarises the following for each energy network:
- Alignment between asset management objectives and corporate objectives, and stakeholder requirements;
- Capital expenditure projects to meet the energy needs of customers;
- Capital expenditure projects to refurbish or replace assets to maintain network performance and control risks to selected targets and prescribed obligations;
- Operating expenditures to meet recurrent network operating and asset maintenance requirements; and
- Operating expenditures (asset works) to meet unique or non-recurrent operating and maintenance requirements.

8.4 Project Life Cycle

The AMP summarises a five-year list of proposed projects and programs of change necessary to meet agreed objectives for each energy network.

Details of the projects and programs of change are managed by the Portfolio Management and Review (PM&R) team within the Finance Division using SAP-based Enterprise Resource Planning software.

Each project and expenditure program within the five-year asset management plan is implemented via the authorisation of a Business Case, which contains an evaluation of the options to address the performance risks and demonstrates the economic efficiency of the selected option.

Each Business Case is documented using the PM&R template; reviewed by engineering and financial managers and authorised by executive managers having formal authority to approve expenditures. Each business case includes a *Project Evaluation Template,* which is a net present value (NPV) calculator which requires life cycle costing of project options considered.

A Project Manager is appointed to deliver the change summarised in each Business Case and the Enterprise Program Management Office coordinates that delivery with other projects and programs of change by monitoring and reporting technical and financial progress.

More detailed information on how projects are managed is available on the PM&R share point portal at:

https://spausnet.sharepoint.com/teams/group1

The PM&R team uses a Project Life Cycle process to facilitate the approval and prioritised delivery of the projects and programs of change and monitors the delivery process against:

- The scope of projects or programs of activity;
- Performance outcomes;
- Time frames for achievement;
- Resources allocated; and
- Responsibilities for delivery, monitoring and management.

Detail on the Project Life Cycle process, including Business Case development and Change Control Requests, can be found within the Enterprise Content Management system at:

http://ecm/pandp/Forms/AllItems.aspx?RootFolder=%2Fpandp%2FPortfolio%20Management%20and%20Review%20%28PMR%29&FolderCTID=0x012000276794C4B0176D42867D2C218B1BBB3C&View={0D7CF619-D471-419D-B2BF-5F9191FFBD45}

8.5 Management Systems

The AusNet Services' ISO 55001 compliant asset management system interfaces with the integrated health, safety, environment and quality (HSEQ) management system and the risk management system.

The integrated HSEQ management system is accredited to AS/NZS 4801, AS/NZS ISO 14001, AS/NZS ISO 9001. The Risk Management System is designed to comply with AS ISO 31000.

Two Electricity Safety Management Schemes and a Gas Safety Case also interface with this asset management system.

These management systems are an integral part of the AusNet Services management framework providing instruction and support across all areas of operation by providing

processes and procedures for functions from planning to customer requirements. Their interface is illustrated in Figure 11.

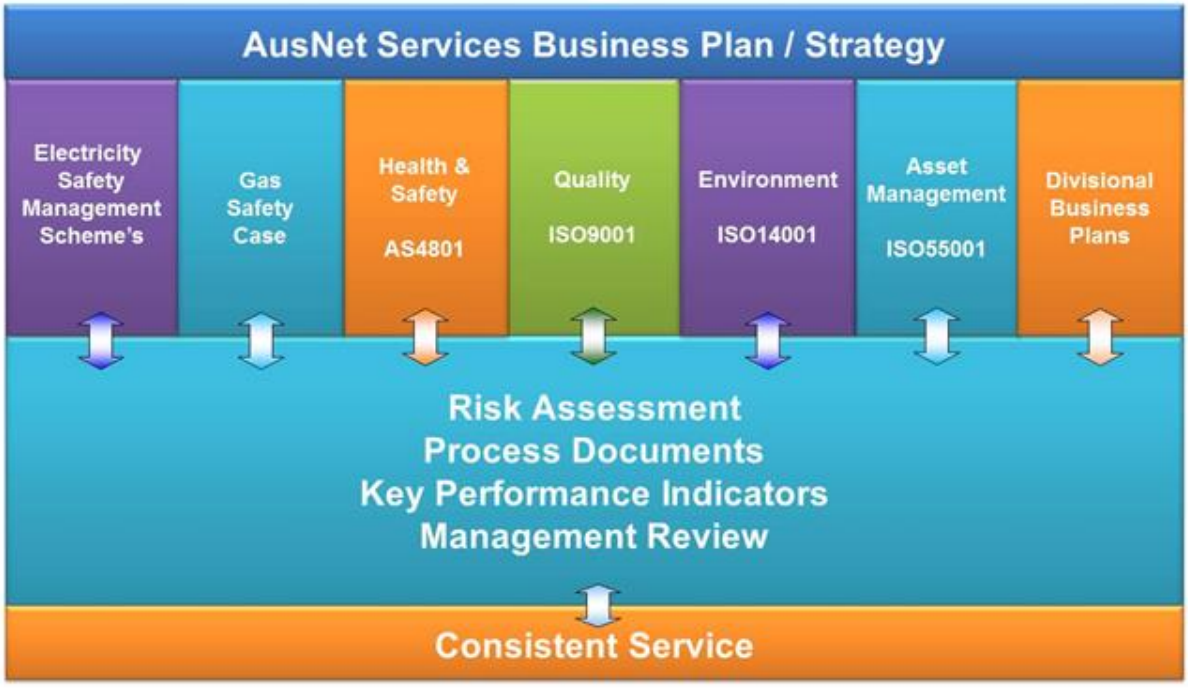

Figure 11: Management Systems

As indicated in Figure 11, there are numerous business wide consistent methodologies that underpin all of the AusNet Services Business Plans and Strategies. In addition, there is significant cross over between the Asset Management and HSEQ Management Systems.

In particular, QMS 10-01 *HSEQ Management System Manual* outlines a number of processes that are utilised as part of the certified asset management system, specifically:

- Document Management (Section 1.16)
- Management of Change (Section 1.17)
- Resource Management (Section 4.3)
- Purchasing (Section 4.4)
- Training, Authorisation and Licences (Section 5)
- Delivery Partner Management (Section 7)
- Emergency Management (Section 9)
- Incident Management (Section 10)
- Nonconforming Product or Services (Section 11.1)

8.5.1 Network Safety

Each five years, in accordance with the Electricity Safety Act and Gas Safety Act, AusNet Services re-specifies two electricity safety management schemes and a gas safety case to manage network safety risks identified by formal safety assessments.

Safety risk controls are then integrated within the processes, systems, strategies and plans, which make up the asset management system.

ESV formally reviews and accepts the safety schemes and then audits the design, construction, operation, maintenance and decommissioning of network assets to ensure safety risk controls are effectively delivered by the asset management system.

Detailed descriptions of the scope, risks and controls of the respective schemes are contained with the following documents:

- ESMS 10-01 Electricity Safety Management System (Electricity transmission)
- ESMS 20-01 Electricity Safety Management System (Electricity distribution)
- GSC 10-00 Gas Safety

8.5.2 Occupational Health and Safety

AusNet Services operates a HSEQ Management System that is certified to AS/NZS 4801 *Occupational Health and Safety Management Systems – Specification with guidance for use* and integrated with the asset management system.

Under the missionZero banner, safety improvements are achieved through a process of employee involvement and self-regulation to maintain continual improvement. All employees and contractors have a responsibility to safeguard their own health and safety as well as that of their workmates. This management system and its processes interact within the business to ensure that there is a single and consistent approach to managing safety.

Further information can be found in QMS 10-01 *HSEQ Management System Manual*.

8.5.3 Quality Management

AusNet Services operates a HSEQ Management System that is certified to AS/NZS ISO 9001 *Quality Management Systems – Requirements* and integrated with the asset management system to provide independent verification that service delivery:

- conforms to specified requirements,
- is capable of consistently achieving its stated policy and objectives, and
- is effectively implemented.

The HSEQ Policy outlines AusNet Services' commitment to quality, which is fundamental to meeting our organisational goals, expectations and the needs of customers and stakeholders. These principles are communicated and prominently displayed in each business location. The HSEQ Policy outlines our quality objectives and commitments which are integrated with the asset management system.

Further information can be found in QMS 10-01 *HSEQ Management System Manual*.

8.5.4 Environmental Management

AusNet Services operates a HSEQ Management System that is certified to AS/NZS ISO 14001 *Environmental Management Systems – Requirements with guidance for use* and integrated with the asset management system.

AusNet Services strives to be an innovative leader in the management of environmental issues through leadership in all our business decisions concerning business sustainability. AusNet Services believes environmental sustainability means minimising impact on the natural environment while finding ways to leverage environmental innovation for business advantage and maintaining effective dialogue with our stakeholders. All employees and contractors have a responsibility to integrate environmental considerations into business planning and decision-making activities to ensure compliance.

For further information can be found in QMS 10-01 *HSEQ Management System Manual*.

8.5.5 Risk Management

AusNet Services maintains a risk management system that has been designed to the AS ISO 31000 *Risk Management – Guidelines* standard to ensure risks are effectively managed to provide greater certainty for our security holders, employees, customers, suppliers and the communities in which we operate. The Risk Management Framework sets

out the overarching philosophy, principles, requirements and responsibilities for a sound approach of risk oversight, management and ongoing internal control assurance required within AusNet Services.

The Framework addresses the following:

- Governance and responsibilities;
- Risk management principles and methodology;
- How AusNet Services assesses and manages risk; and
- How AusNet Services monitors and reports on risk.

The framework is a blueprint to manage risk consistently across AusNet Services. The asset management system is the primary mechanism by which risk reduction controls are implemented.

Risks are rated and prioritised under the following categories:

- Health and safety (Employee and public);
- Environment and community;
- Reputation;
- Customers;
- Regulation, legal and compliance;
- Management impact and people; and
- Financial Impact.

By adopting common metrics across the broad range of business risks and investment portfolios, AusNet Services can more effectively manage business risks and optimise network outcomes and objectives.

AusNet Services uses a range of techniques to identify and assess risk and thus determine the maintenance and replacement requirements for each asset class.

Further information can be found in *RM 10-01 Risk Management Policy and Framework* and *AMS 01-09 Asset Risk Assessment Overview*.

9 LEADERSHIP

9.1 Leadership and Commitment

The Executive Leadership Team (ELT) is responsible for the holistic management of the three energy networks in accordance with the Business Plan and via the Asset Management System.

There are a number of committees to support the ELT in executing this function. Formal charters document the authority of each of the following groups:

1. Strategic Asset Management Committee;
2. Audit and Risk Committee;
3. Network Safety Management Committee; and
4. Security Steering Committee.

The role of each of these committees is described in the following sections.

9.1.1 Strategic Asset Management Committee (SAMC)

The purpose of Strategic Asset Management Committee (SAMC) is to maintain an Asset Management System which optimises network performance and life-cycle costs to achieve AusNet Services' business plan, for the benefit of the community, customers, and security holders.

The SAMC is responsible for reviewing and improving the suitability, adequacy, and effectiveness of the Asset Management System.

A formal charter requires the SAMC to decide:

- Appropriate asset management practices and approaches to continuous improvement of the Asset Management System
- Network performance levels including Key Performance Indicators and targets
- Changes to the Asset Management System, including the asset management policy, asset management strategy and asset management objectives; including
  - Reviewing the asset management system, as described in AMS 01-01 *Asset Management System Overview*
  - Conducting periodic network performance reviews
  - Implementing appropriate corrective actions
  - Initiating environmental assessments, e.g. regulatory, legal, community and technology
  - Identifying emerging systemic asset risks and including assessments and controls in the organisation's risk management system
- Compliance with statutory rules (Safety Management Systems, National Energy Rules) and recognised Standards such as ISO 55001 Asset Management, AS/NZS ISO 9001 Quality Management, ISO 14001 Environmental Management and AS 4801 Health and Safety Management.
- Endorsement of the following for ELT or AusNet Services Board approval:
  - Asset Management Policy
  - Asset Management Strategy
  - Five-year AMPs
  - Safety Management Systems
- Communications to all stakeholders on the above, including:

- Senior management forums
- Peer committees such as Network Safety, Occupational Health and Safety, Environmental management and Infrastructure Security
- Specific asset management improvement teams

9.1.2 Audit Risk and Management Committee (ARMC)

The primary function of this committee is to assist the Board in discharging its statutory responsibilities relating to:

- The financial reporting process;
- The audit process (including the Company's relationship with external auditors);
- The Company's systems of internal controls;
- The Company's process for monitoring compliance with applicable laws, regulations and codes of conduct (including in relation to interested (related) party transactions); and
- The Company's risk appetite (including the policies identifying, measuring, monitoring and managing risks).

The ARMC's charter can be found on The Loop at:

https://www.ausnetservices.com.au/Misc-Pages/Links/About-Us/Corporate-Governance

9.1.3 Network Safety Management Committee (NSMC)

The principal objective and role of the Network Safety Management Committee (NSMC), is to understand and manage the safety and bushfire ignition risks, in planning, designing, constructing, operating, maintaining and decommissioning its supply networks to minimise as far as practicable:

- the hazards and risks to the safety of any person arising from the supply network; and
- the hazards and risks of damage to the property of any person arising from the supply network; and
- if that network is an at-risk supply network, the bushfire danger arising from that network.

The committee, whose membership consists of senior personnel from various business streams, provides the operational leadership and coordination of resources engaged in the development and implementation of bushfire mitigation, vegetation management and asset safety programs.

9.1.4 Security Steering Committee

This committee's role and responsibilities are to:

- Providing guidance and direction for the Security and Emergency Services Manager and the Information Security Manager in developing, reviewing, and recommending a strategy, standards, procedures and guidelines for AusNet Services;
- Ensuring that improvements to AusNet Services' security capability are implemented efficiently to align with operational security policies, standards and procedures required by the Corporate Security Policy and the Security Management Framework whilst recognising the needs of the various stakeholders;
- Identifying and recommending appropriate industry practices in security for AusNet Services;
- Prioritising security projects (and the security components of other projects) to ensure best fit to needs and coordination with other projects, standards and policy;

- Coordinating inter-departmental communication and collaboration on security issues;
- Ensure that the risks are managed, and internal controls are effective;
- Review of major incidents and the responses to security issues at AusNet Services;
- Review the status of various security initiatives;
- Provide security guidance and input to all projects early in the cycle of its inception;
- Ensuring that proposed security spending gives value to AusNet Services as a whole and manage the risk whilst meeting business objectives; and
- Ensuring that all new projects provide due consideration for security issues and do not increase AusNet Services' security risk without due consideration for the possible consequences.

9.2 Asset Management Policy

AusNet Services has formally endorsed an Asset Management Policy as illustrated in Figure 12.

Asset Management Policy

AusNet services

Connecting communities with energy and accelerate a sustainable energy future

This policy directs the content and implementation of asset management strategies, objectives and plans for AusNet Services' energy delivery networks. It provides employees, contractors, suppliers and delegates with guiding principles to underpin asset management decisions.

Our approach to Asset Management is centred on enabling our Ausnet Services' purpose of *connecting communities with energy and accelerate a sustainable future* and our strategic priorities of *customer passion; energised people; operational excellence, accelerate growth*.

To achieve this we will:

- Minimise risks to the safety of any person and their property "as far as practicable".
- Place customers at the centre of our decisions to support their evolving needs and the changing energy landscape.
- Engage with our customers and stakeholders to understand and integrate their requirements in asset management decisions.
- Comply with legislation, regulation, relevant Standards and industry codes and actively contribute to the development of amendments that will benefit our customers and stakeholders.
- Use a risk-based approach to manage the energy networks and balance the environmental, economic, and social needs of today without sacrificing the interests of future generations.
- Use innovation, information and technology to facilitate a sustainable whole of life cycle approach to asset management to deliver value to our customers, communities and partners.
- Continually develop the skills of our people to ensure asset management activities are performed efficiently and effectively.
- Align and continuously improve our asset management processes and capabilities in accordance with ISO 55001 Asset Management.

Tony Narvaez
Managing Director
25 August 2021

We work safely | We do what's right | We're one team | We deliver

Figure 12: Asset Management Policy

This policy is reviewed each year and is communicated throughout the business.

9.3 Organisational Roles, Responsibilities and Authorities

9.3.1 Organisational Roles

The ELT is responsible for the holistic management of the three energy networks in accordance with the Business Plan and via the Asset Management System.

Figure 13 shows the structure of the ELT.

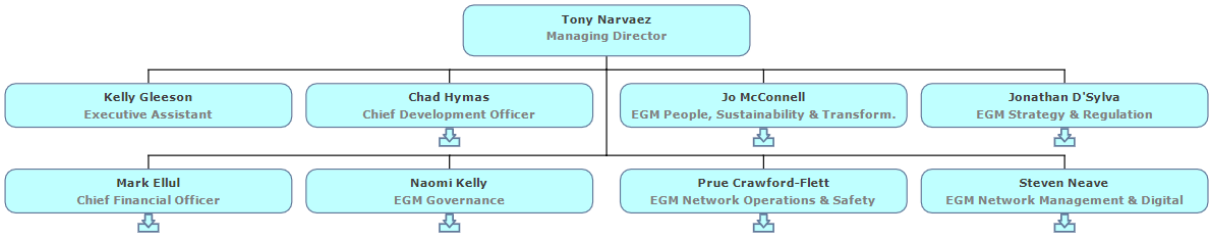

Figure 13: Executive Leadership Team

A complete organisational hierarchy can be found on *The Loop*.

Key roles are described in the following sections.

Managing Director

The Managing Director with the support and guidance of the Board of Directors is ultimately responsible for the management of AusNet Services.

The Managing Director oversees the strategies, policies and performance of AusNet Services and sets the values and standards.

Governance arrangements are established in a charter, which describes the functions of the Board and those functions delegated to management.

Chief Development Officer

The Chief Development Officer is responsible for:

- helping businesses and communities to make sense of what's possible,
- planning and delivering solutions to keep everyone ahead of the rapidly changing landscape,
- connecting Australia's largest wind farms to the grid,
- helping maintain water and gas networks or assisting regional communities to achieve their energy goals,

Executive General Manager – People, Sustainability and Transformation

The EGM People, Sustainability and Transformation is responsible for:

- the safety and skill development of personnel,
- the environmental performance of energy delivery networks, business communications and the quality of safety, environment, and people orientated processes
- the consistent and aligned strategic directions in the form of corporate development strategy and emerging market assessments,
- operational performance review and improvement opportunity development, to drive end-to-end performance efficiency and effectiveness across all business divisions.

Executive General Manager – Strategy and Regulation

The EGM Strategy and Regulation provides:

- consistent and aligned strategic directions in the form of corporate development strategy and emerging market assessments,
- operational performance review and improvement opportunity development, to drive end-to-end performance efficiency and effectiveness across all business divisions.
- Regulatory affairs for the three networks
- Advocate and coordinator of external communications with major stakeholders

Chief Financial Officer

The Chief Financial Officer is responsible for delivery of financial services, which include treasury, cash management, investor relations, financial modelling, investment analysis, taxation planning and compliance, statutory and regulatory accounting and reporting, accounting operations and management accounting.

Executive General Manager – Governance

The EGM Governance provides:

- expertise on risk, regulatory compliance, information security and internal audit,
- independent and objective audits of the businesses' operations,
- the Risk Management Framework,
- advice on legislative and regulatory issues, drafting and negotiating legal agreements, managing and protecting the company's intellectual property portfolio,
- assistance with management of claims and litigation, corporate governance, insurance and board administration and approvals.

Executive General Manager – Network Operations and Safety

The EGM Network Operations and Safety is responsible for:

- delivery of all asset related works, including customer projects, as defined in asset management plans,
- operational functions of customer service, network operations and control, network maintenance, logistics and procurement and major project delivery.
- This role is also responsible for customer engagement strategy and customer access to network services.
- supporting the entire business to ensure the health and well-being of AusNet's people and environment.

Executive General Manager – Network Management and Digital

The EGM Network Management and Digital is responsible for the:

- performance of the regulated gas and electricity networks and the stewardship of the constituent assets,
- strategic functions of customer strategy, regulatory and network strategy, project portfolio management, asset engineering and communication system development.
- strategic information technology and communication functions including strategy, architecture, portfolio management and IT policy,
- supporting the real time network control systems,
- provision of IT services and systems including translating business requirements into functional and technical specifications.

9.3.2 Responsibilities

AusNet Services has role and responsibility statements for each position within the business. These statements, together with personal development plans and objectives, are managed within the corporate human resource management system.

9.3.3 Authority

The Board has delegated authority to the Managing Director for the day-to-day operations of AusNet Services.

The AusNet Services' Authority Manual contains the framework for controlling the delegation of authority, to assist managers and others to perform their duties effectively and manage risks, whilst enabling the Board to monitor performance and compliance. The AusNet Services' Authority Schedule contains the current financial delegations of authority for selected employees.

The Authority Manual, Authority Schedule, Authority Policy and Authority Approval can be found on ECM at:

Delegation of Authority

10 PLANNING

10.1 Asset Management Objectives

Considering the industry context, stakeholder requirements, the corporate business plan and the asset management policy, the following high-level asset management objectives have been established for the three regulated energy networks:

1. Improve network performance at the lowest sustainable cost;
2. Meet customer needs now and into the future.
3. Be future ready;
4. Reduce safety risks; and
5. Comply with legal and contractual obligations;

More specific Asset Management Objectives for each of the regulated energy networks, aligning to the specific industry context, stakeholder requirements and network business plan for each network and these overall asset management objectives are detailed in each of the respective asset management strategies; AMS 10-01, AMS 20-01, AMS 30-01 and AMS 40-01.

10.2 Risk Identification and Management

The effective management of risk is central to continued growth and success. By understanding and managing risk, AusNet Services provides greater certainty for shareholders, employees, customers and suppliers and the communities in which we operate. Being well informed and decisive, we have increased confidence to move to achieve our purpose of empowering communities and their energy future. A structured and consistent process for recognising, understanding and responding to risk is a key principle.

10.2.1 Risk Management System

RM 10-01 *Risk Management Policy and Framework* defines AusNet Services' approach to managing risk, including governance, roles and responsibilities, minimum standards and core processes. It forms part of the broader AusNet Services governance framework.

RM 10-01 documents the governance process, management principles and methodology, the assessment and management processes, monitoring and reporting processes and the compliance and review processes within AusNet Services. This framework is based upon the AS ISO 31000 Risk Management standard.

RM 10-02 *Risk Appetite Statement* describes the amount of risk which the AusNet Services group is prepared to manage in the execution of its strategy and the ordinary operation of its business. This appetite is defined at a level which is within the 'Capacity' of the business to absorb the consequences of a risk event. Risk appetite is reviewed by the Board each year to provide guidance for the execution of defined strategic objectives and operational activities within AusNet Services.

The Group Risk Committee aligns the business objectives with risk appetite and risk management strategy and provides direction in the development, implementation and sustenance of an effective risk management system.

Further information on risk leaders, the operation of the group risk committee and risk management tools can be found on the Risk Management SharePoint site at:

https://spausnet.sharepoint.com/Divisions/Governance/Pages/Risk-Management-.aspx

10.2.2 Formal Safety Assessments

In accordance with the Electricity Safety Act and the Gas Safety Act; AusNet Services operates Electricity Safety Management Schemes for its electricity transmission and distribution networks and a Gas Safety Case for the gas networks.

Both Acts require detailed network safety risk assessments using a recognised risk assessment technique. These assessments are undertaken using the *Risk Management Framework* and are formally accepted and routinely audited by ESV.

Network Safety risks are documented in a formal risk assessment for each network. Identified risks are monitored via the *Risk Management Information System (Enablon)*, and managed through the strategies, plans, technical standards and operating procedures, which make up the asset management system.

10.2.3 Asset Failure Risks

AusNet Services uses a range of techniques to identify and assess risk and thus determine the maintenance and replacement requirements for each asset class.

Various techniques are applied depending on the asset type and the asset data available. The range of resulting risk assessments and replacement forecasts are compared, contrasted and brought together using engineering judgement to inform the management of risk and development of maintenance programs and replacement forecasts.

These techniques range from qualitative techniques, such as bow-tie analysis and consequence/likelihood matrices, to quantitative analysis such as cost-benefit analysis, failure modes, effects, and criticality analysis (FMECA) and Monte Carlo simulation.

The choice of technique is highly dependent on context and the form of assessment and its output should be consistent with the risk criteria developed as part of establishing the context.

Further information can be found in *AMS 01-09 Asset Risk Assessment Overview*.

10.2.4 Infrastructure Security Risks

Safety, criminal, malicious damage and terrorism risks have been assessed for each large installation and for each fleet of generic network assets using purpose build infrastructure security risk assessment tools (ISRAT). ISRAT incorporates crime statistics, historic security events, energy distributed and market constraints to produce relative security risk rankings and guide the development of security controls based on deterrence, delay, detection, response and contingency plans.

Asset Management Strategies AMS 10-63 and AMS 20-14 contain more information on the infrastructure security risk management.

10.3 Planning to Achieve Asset Management Objectives

10.3.1 Criteria for Asset Management Decisions

The following summary of criteria for asset management decisions and prioritising of activities and resources commences with the principal legal and regulatory obligations, includes industry codes of practice and extends to AusNet Services' technical standards, AusNet Services' values and independently certified management processes.

A summary can be found in the Asset Management Policy.

National Electricity Law and National Gas Law

The National Electricity Law and the National Gas Law require AusNet Services to develop Capital and Operational expenditure proposals to:

- meet or manage the expected demand for services,

- comply with all applicable regulatory obligations or requirements,
- maintain the quality, reliability and security of supply, and
- maintain the safety of the networks.

Electricity Safety and Gas Safety Acts

The Electricity Safety and Gas Safety Acts require AusNet Services to "design, construct, operate, maintain and decommission its supply networks to minimise, as far as practicable, the hazards and risks to the safety of any person arising from the supply network by having regard to:

- the severity of the hazard or risk in question;
- state of knowledge about the hazard or risk and any ways of removing or mitigating the hazard or risk;
- the availability and suitability of ways to remove or mitigate the hazard or risk; and
- the cost of removing or mitigating the hazard or risk.

Electricity and Gas Safety Management Regulations

The Electricity Safety (Management) Regulations and the Gas Safety (Safety Management) Regulations require AusNet Services to design, construct, operate, maintain and decommission its supply networks in accordance with:

- an Electricity Safety Management Scheme accepted by ESV;
- a Gas Safety Case accepted by ESV; and
- published Australian Standards, International Standards and AusNet Services standards.

Industry Codes

The Electricity Distribution Code, the Electricity System Code and Gas Distribution System Code detail the technical specifications for the operation of licenced energy supply networks in Victoria.

Technical Standards

The technical standards that AusNet Services applies to asset creation, operation, inspection, maintenance, refurbishment and replacement are contained in "operational manuals" which are managed within the Enterprise Content Management system.

The technical standards which are also listed in the relevant Electricity Safety Management Scheme or Gas Safety Case, are used by staff, contractors and auditors to manage each stage of the asset life cycle.

AusNet Services' Values

As discussed in Section 6.6, AusNet Services has four company values:

1. We work safely;
2. We do what's right;
3. We're one team; and
4. We deliver.

These values lay the foundation for the basis upon which all asset management decisions are made.

Asset Management System

The criteria for asset management decisions are summarised in the Asset Management Policy and detailed in the relevant components of the ISO 55001 compliant asset management system, which includes:

- Asset Management Policy;
- Asset Management Strategies for each network;
- Annual Five-Year AMP;
- Electricity Safety Management Schemes accepted by ESV;
- Gas Safety Case accepted by ESV;
- An integrated Occupational health and safety management system, Quality management system and Environmental management system certified to AS/NZS 4801, AS/NZS ISO 9001, and AS/NZS ISO 14001 respectively; and
- A risk management system based on ISO 31000.

10.3.2 Methodology for Asset Management Decisions and Priority

The following summarises AusNet Services' methodology of asset management decision-making and resource prioritisation.

Legislation Regulation Industry Standards and Codes

AusNet Services is an active participant in national and state reviews of law and regulation governing the energy supply industry.

AusNet Services also participates in the industry working groups developing and refining Australian Standards and industry Codes of Practice.

A compliance management system is employed by AusNet Services to assign responsibility and to continuously monitor compliance with each regulatory and industry obligation.

Business Environmental Assessment

As part of the annual cycle of business, financial and asset management planning; business environmental assessments are undertaken to benchmark customers' and external stakeholders' expectations.

Periodically these assessments are supplemented by internal stakeholder visioning workshops, which shape the longer-term asset management responses to external stimuli.

Asset Management Policy

Each year the AMC reviews the content of the Asset Management Policy to ensure its contents are fit for the purpose of directing the content and implementation of asset management strategies, objectives and plans for energy delivery networks.

The Asset Management Policy contains the criteria which guide individual asset management decisions.

Asset Management Strategy

Each year the long-term asset management strategy for each energy delivery network (AMS 10-01, AMS 20-01, AMS 30-01 and AMS 40-01) is reviewed and updated for endorsement by the Strategic Asset Management Committee.

Updates are informed by network performance reviews, progress on the delivery of the current five-year asset management plan, regulatory determinations, forecast demand for network services, forecast consumer prices and the forecasts of asset inspection, maintenance, refurbishment and replacement needs.

Asset Management Plan

The annual production of a five-year asset management plan is informed by the coincident development of the company's Business Plan and Finance Plan and:

- The long-term view expressed in the Asset Management Strategy for each network,
- Assessment of the prevailing business environment,
- Historic expenditures and regulated revenue benchmarks,
- Historic network performance and emerging performance risks, and
- Progress on the delivery of the current five-year asset management plan

Business Case

Each project and expenditure program within the five-year asset management plan is implemented via the authorisation of a Business Case, which contains an evaluation of the options to address the performance risks, demonstrates the economic efficiency of the selected option and the financial treatment of the recommended investment.

Each Business Case is reviewed against the relevant asset management decision criteria by engineering and financial managers and authorised by executive managers having formal authority to approve expenditures.

Project Life Cycle

A Project Manager is appointed to deliver the change approved in each Business Case.

The PM&R team aids the business in coordinating the delivery of each project with other projects and programs of change.

The delivery priority of each project or program within the SAP-based Enterprise Resource Management system is determined by its contributions to the following criteria:

- mandatory – addressing regulatory, legal and safety issues,
- discretionary – considering strategic alignment, technical assessment, cost estimate, risk reduction and financial return.

Performance Reporting

The progressive delivery of projects and programs of change are monitored and reported on a monthly cycle by the PM&R role to facilitate and coordinate network expenditure programs.

Selected key performance indicators for Capacity, Reliability, Quality, Safety, Environment, Compliance and Security in each network are monitored and reported continuously to inform stakeholders and facilitate asset management decisions on the prioritisation of activities and resources. The current key performance indicators and their associated targets can be found in the approved AMP.

Each year a specific report summarising the performance of each regulated network against the agreed key performance indicators is presented to the AMC. This performance report underpins the review of the relevant Asset Management Strategy and the next draft of the Asset Management Plan.

Unplanned and adverse-performance events are continuously monitored, reported and subject to root cause analysis. Performance trends and systemic root causes are used to inform asset management decisions and set the priority of activities within each network and across the energy networks. A summary of these events is presented annually to the AMC.

The performance of each regulated energy network is reported to the AER in accordance with the specifications established in the Regulatory Information Notification, Regulatory Accounts, and Non-Financial Regulatory Accounts.

Asset Management System – Overview

The principal monthly and annual reports to ESV are in accordance with the Electrical (or Gas) Safety Performance Reporting Guidelines.

11 SUPPORT

11.1 Resources

The forecasting of future enterprise-wide resource requirements is undertaken by the People and Safety in consultation with operating divisions; using a combination of employee age profiling and future work activity forecasts to establish resource volumes and skill specifications.

The resource model includes the use of internal and external resources in the delivery of maintenance and capital works programs. Strategic alliances have been formed with companies that provide design services, installation services and maintenance services. Contract arrangements are performance based with benchmarking of costs and standards to ensure that quality and value is maintained.

Short term resource procurement is achieved through a combination of contracting and direct employment. Medium to long term resource requirements are factored into the Apprentice, Technical Trainee, Graduate Engineer, analyst and accountant recruiting and development programs.

11.2 Competence

11.2.1 Industry and National Standards

QMS 22-01 *Field Training and Development* describes how individual and companywide training programs are managed in AusNet Services. Its purpose is to provide safe induction, training and competency of AusNet Services employees, agency labour, delivery partners and visitors. This framework draws from, and is consistent with, the Victorian and the National industry standards for competence and training of operational personal. Further information on the electricity and gas industry competency standards and registered training providers can be found at:

- www.vesi.com.au
- www.australianindustrystandards.org.au
- https://training.gov.au

Technical training of AusNet Services' employees is recorded in the on-line training records management system, Success Factors, and in industry standard passports held by each operational person.

11.2.2 Learning Framework

The Employee Centre portion of The Loop provides information on the AusNet Services' Learning Framework, which features four development streams:

- Leadership development
- Talent development
- Employee development and
- Technical development

Development needs within these streams are delivered via a combination of in-house programs via the Corporate Learning plan, divisional specific programs and external development partners. The recommended development framework for employees is contained in the Development Activities 70-20-10 handout which indicates 70% on the job experience, 20% coaching and mentoring and 10% formal education.

11.2.3 Performance and Development Framework

The Employment Centre portion of The Loop provides a performance and development framework that provides alignment between AusNet Services' corporate planning, individual performance and development planning, review and reward processes. It consists of four key processes each year:

- Corporate planning and goal alignment
- Plan performance and development expectations
- Mid-year achievement review
- Final achievement review

11.3 Awareness

11.3.1 Awareness of Policy

Asset Management Policy is reviewed annually by the AMC and periodically re-published under the signature of the Chief Executive Officer.

It is posted on notice boards in each workplace.

This Policy is referenced in Asset Management Strategies and the annual Asset Management Plan. This Policy has been summarised and discussed in face-to-face meetings between strategic and operational staff in regional network planning forums. The Asset Management Policy summarises the asset management decision-making criteria.

11.3.2 Contribution to Asset Management System

Where specific contributions are required for the effectiveness or the enhancement of the asset management system, such as the annual creation of the five-year Asset Management Plan, the tasks are specifically listed in role statements and Annual Incentive Plans of individual staff.

Specific contributions can also be found in the annual Departmental and Divisional Business Plans together with delivery deadlines and quality targets.

Strategic contributions to the effectiveness of the Asset Management System are summarised in the AMC Charter and tracked through the Committee meetings. A decision register is maintained recording material asset management decisions made by the AMC and the impact of these decisions on cost and risk.

The effectiveness of the Asset Management system is reliant on individuals completing assigned tasks in accordance with the relevant approved procedure. Employees and contractors are engaged in the development, review and improvement of each procedure and are trained and instructed in the use of the relevant procedures. Employees are encouraged to suggest amendments to the formal procedure when deficiencies are identified.

Work activities and success criteria are formally summarised in role statements for each role. The correct processes, tools and techniques for successful delivery of routine work activities are formally documented in relevant procedures which are published on ECM and embedded in information technology workflow processes as required. Workers are obliged by their employment agreement to use the formally documented works procedures or seek specific exemption from their supervisor.

Specific tasks are documented in formal work orders within a project or program of change. Workers are obliged to complete work orders as requested or to seek specific exemption from their supervisor.

Work Order completion is validated by supervisors and audited by the quality management system and the internal audit process. High profile safety-related or customer-related work

activities are monitored and audited by the safety or economic regulator and reported in annual comparative performance reports.

11.3.3 Risks and Opportunities

As summarised in Section 8.5.1 and Section 8.5.5, AusNet Services formally assesses risks and opportunities through the formal safety assessments of its electricity and gas safety management schemes and through the structured assessments of its ISO 31000 based risk management system.

The risks and opportunities associated with a program or project of change are assessed at several stages through the project lifecycle: originally at the conceptual stage, and then at the approval stage, detailed design stage and then through each stage of construction and commissioning.

Risks and opportunities associated with field work activities are assessed via the use of Job Safety Assessments (JSA) prior to the commencement of each individual task.

Opportunities to improve the effectiveness or efficiency of the asset management system are also identified through the structured audits undertaken for the two Electricity Safety Management Schemes, the Gas Safety Case and the integrated Health Safety Environment and Quality management system as summarised in Section 8.5.

Further, the AusNet Services internal audit function (see Section 13.4) formally identifies risks to the asset management system and opportunities to improve its functioning.

11.3.4 Implications of non-conformance

Asset Management System requirements are integrated in regulatory submissions, Business Plans and the annual AMP. Similarly, the Asset Management System requirements are embedded in the approved portfolio of programs and projects for each network as well as the information systems requirements and formal works processes and task procedures used to deliver service and manage change.

Selected key performance indicators and targets are incorporated in the annual Business Plan, AMP and the Annual Incentive Plans of responsible individuals. Progress is monitored and reported to work groups routinely. Successful delivery of the programs as measured by key performance indicators bears upon moneys available to the Annual Incentive Plan pool and directly upon the annual incentive payment of individuals responsible for delivery.

Formal Post Implementation Review (PIR) assesses the effectiveness of each asset management plan, as well as large programs and projects of change. Audit programs run to continually assess completion, quality and the use of approved processes and tools. Non-conformances are registered in the Issue Management System (Enablon) for corrective action. Corrective actions are monitored for completion and effectiveness. The AusNet Services' Corporate Compliance program is run in accordance with AS ISO 19600 *Compliance Management Systems – Guidelines*.

The *Discipline Policy (including Fair Treatment Framework)* 10-1025 contains the processes to be followed for dealing with systemic failures to conform with required business policies, procedures and standards.

11.4 Communication

11.4.1 External Communications Policy

CPA 20-02 *External Communications Policy* ensures that communications across AusNet Services are well-coordinated, effectively managed and responsive to the diverse information needs of its stakeholders:

- Shareholders;

- National Energy Market participants;
- Customers;
- Easement holders;
- Suppliers;
- The general public;
- Employees;
- Contractors; and
- Its majority shareholders, Singapore Power and State Grid International Development Limited.

It assigns responsibilities to senior officers and outlines the framework within which communications are undertaken. It summarises obligations and appropriate communication techniques associated with:

- Internal business communication;
- External stakeholders' enquiries and complaints;
- Crisis communications;
- Media and spokespersons;
- Advertising and marketing;
- Printed publications, film and multimedia productions, Internet; and
- Exhibitions and trade events.

11.4.2 Customer Engagement to Test Regulatory Submissions

The AEMC (Australian Energy Market Commission) has established requirements for energy network businesses to engage with customers prior to the lodgement of a revenue submission.

AusNet Services engaged customers in association with its preparations for the 2018-2022 Gas Access Arrangements Review and the 2017-2022 Electricity Transmission Revenue Reset submissions.

As part of the 2022-2026 Electricity Distribution Price Review, AusNet Services has established an independent Customer Forum to represent the perspective of our customers.

AusNet Services is the first Australia utility business to trial this process, which has been developed in consultation with the AER and Energy Consumers Australia.

AusNet Services is negotiating elements of its regulatory proposal with the Customer Forum to ensure that our plans for the 2022-26 period genuinely reflect the preferences and perspectives of our customers.

11.4.3 Routine Stakeholder Communications

The results of the annual network planning process are published each year in planning reports such as the *Distribution Annual Planning Report* and the *Transmission Connection Planning Report*.

The intent of these reports is to make transparent the asset management processes and the emerging network constraints and proposals to address each constraint. This commences a consultation process with stakeholders who may provide demand management or embedded generation or energy storage proposals. These reports are provided to regulators and published on the AusNet Services website.

In addition, each year the regulated energy networks provide safety and economic regulators with audited data on safety, service and financial performance. This information is used by

regulators to benchmark relative performance with peers, measure performance against financial incentive schemes and report expenditures against revenue determinations.

The AER publishes economic and service level comparative performance reports designed to inform stakeholders on the fundamental balance of price and service performance on its website located on the AER website.

Each year Energy Safe Victoria publishes a safety comparative performance report on its website.

The AusNet Services website (www.ausnetservices.com.au) is used to update energy customers, investors and prospective employees on the status of a wide range of issues, processes and proposals.

Energy customers are provided information on:

- Interruptions and faults
- Connections applications
- Safety and preparedness
- Energy use, and
- Revenue determinations

Investors are provided information on:

- ASX information releases
- Company results and reports, and
- Share and securities dividends and distributions

Prospective employees can find information on:

- Available roles
- Scholarships, and
- Apprentice and trainee programs

Electricity distribution customers are provided with a Customer Charter at the time of connection and each five years. The Customer Charter explains who AusNet Services is, what can be expected from AusNet Services and what AusNet Services expects of the customer.

11.4.4 Employees

Communication of general information to employees is a continuous process which includes newsletters, an internal social media site (Yammer), departmental meetings and divisional briefings. Communication extends to a range of on-line reports and includes many routine direct email reports such as safety grams, network event reports and network performance reports.

The involvement of employees in the development of action plans to manage emerging issues is a common communication technique used by AusNet Services. It is routinely supplemented by engaging other employees in consultation on emerging issues through review of drafts of proposed actions and feedback surveys on the quality of service provided. An example of communication and consultation is the formal safety risk assessments for the Electricity Safety Management Schemes and Gas Safety Case in which many subject matter experts from engineering design to asset operation participate. Process improvement projects have involved many subject matter experts in the specification, design and implementation of new process and systems to improve the delivery of network services.

SharePoint portals are increasingly used to communicate with employees on the functions of:

- Portfolio Management and Review

- Strategic Programs
- Graduate Engineer Program
- Career Development
- Risk and Assurance and the Asset Management Committee

Communication of progress on specific issues is commonly emailed directly to stakeholders and The Loop continues to be a primary communication tool. All employees and selected contractors have access to The Loop and ECM.

More general communications within the business may include, but are not limited to:

- Board, Executive, Divisional and Department Management team and work group meetings
- Corporate and divisional quarterly employee briefings
- Connected (AusNet Services electronic newsletter)
- Divisional summary reports
- Employee surveys
- Health and Safety Grams

11.5 Information Requirements

11.5.1 Data Attributes and Quality

The data attributes and quality requirements have been specified for each of the following asset management information systems listed in Section 7.2.

As part of Program Workout, in 2015 more than 100 disparate information systems were consolidated within an SAP-based Enterprise Asset Management and Enterprise Resource Planning information platform.

11.5.2 Organisation for Information

The roles and responsibilities described in Table 3 establish how the stakeholders relate to information at AusNet Services. Asset management information is owned and governed within the Asset Management Insights team.

Table 3: Information roles

Role title	Description
Asset Management Data Owner	• Accountable for asset management master data • Responsible to ensure asset data is governed across systems and lines of business • Develops and maintains an asset management data strategy that aligns with the digital strategy and supports the asset management strategy
Asset Management Data Governance Lead	• Leads and implements fit-for-purpose asset management data governance in line with corporate approaches • Develops and maintains asset management data standards & specifications • Develops data quality capability as fit-for-purpose • Ensures cost & benefit is demonstrated for maintaining asset data
Information Architect	• Provides expertise on AusNet Services' information environment to support analysis and solution definition for developing the information management target state architecture • Designs, creates, deploys and manages AusNet Services' target information architecture and ensures that AusNet Services' programs and projects and governance decisions are in alignment with the architecture
Data Management Specialist	• Provides specialist knowledge in data management and includes roles such as Data Quality Analyst, Data Governance Analyst, Metadata Analyst
Data Stakeholder	• Is affected or could be affected by the data decisions or data under discussion (can be an individual or group)
Data SME	• Provides a project or BAU team specialist knowledge of a dataset and their business rules • Provides advice on technology or processes that will be directly impacted by the data under discussion • Able to identify the issues and history that may affect the use of a dataset
Data Producer	• Comes from all levels of the organisation and are responsible for creating, entering and/or updating data in accordance with data policies, standards and processes.
Data Consumer	• Represents both internal and external parties who use the data. • Data that is available and accessible to internal and external parties should be consistent with data security and access requirements for legal and privacy reasons.

Further improvements to the operating model for asset and network data governance are in progress as part of the establishment of the Enterprise Process Management group, and the expansion of data domains available on the Information Management platform.

11.5.3 Data Types

Key data definitions used in Enterprise Asset Management at AusNet Services include:

- Master Data
- Hierarchical Data Model
- Transaction Data
- Spatial Data
- Network Model Data
- Normal Network Data
- Real Time Network Data
- Metadata

Each of these is described in the following sections.

Master Data

Master Data represents the business objects that are agreed upon and shared across the enterprise. It can cover relatively static reference data, transactional, unstructured, analytical, hierarchical, spatial, and metadata. Examples of Master Data include Customers, Vendors, Equipment, Functional Locations, Assets and Compatible units.

Hierarchical Data Model

AusNet Services Enterprise Asset Management practices employ a Hierarchical Data Model into a technical hierarchy. A hierarchical database model organizes data objects (FLOC/Equipment), entities (classification) and attributes (characteristics) into a tree-like structure.

Configuration data is then used to apply business rules to data and specify what values are valid for an attribute/characteristic. Configuration data are typically enabled as dropdown menus within the Enterprise Asset Management systems SAP and GIS. Examples of Configuration Data include Cost Centre category, Material types, Project Status and Employment status.

Transaction Data

Transaction Data is the data that relates to a sequence of information exchanges and related work to satisfy a specific service request. Examples of Transaction Data include: Work Orders, Purchase Orders, Project Cost Estimates, and Timesheets.

Transaction data is specified and governed by the relevant business unit in accordance with the Business Process defined for that task. The Business Processes were recorded in Business Process Design documents as part of the SAP platform implementation.

Spatial Data

Spatial data, also known as geospatial data or geographic information is the data or information that identifies the geographic location of features (assets), boundaries and network relationships. Examples of Spatial Data include Functional Locations and Codified Area Boundaries.

Network Model Data

Network Model data is derived data that provides the links between Network (gas or electricity) components, e.g. a 22kV line is connected to another 22kV line but cannot connect to an LV line. The 22kV lines are also part of AA123 feeder.

Normal Network Data

Network Model Data reflecting the Normal (operating) state of the Physical Network. Planned or Unplanned outages **are not represented** in the network normal model.

Real Time Network Data

Network Model Data reflecting the Real Time (operating) state of the network. Planned and Unplanned outages **are represented** in the model for the actual chronological time that they exist in the Physical Network.

Metadata

Metadata is data that provides information about other data. In the practice of Enterprise Asset Management administrative metadata provides information to help manage a resource, such as when and how it was created, file type and other technical information, and who can access it.

11.5.4 Alignment of Terminology

Asset management and financial terminology are aligned with the definitions established by:

- National Electricity and Gas Laws and Regulations;
- National and Victorian State Law and Regulation;
- International and National Standards; and
- Electricity and gas industry standards.

11.5.5 Traceability of Data

Safety and economic regulators specify the requirements for traceability of data. Regulators have established independent due diligence and audit processes for the traceability of information back to raw data. As specified by the regulator each report has an accompanying diligence statement.

Each year, financial and asset information is provided to the AER in the form of an annual Regulatory Information Notice (RIN) for each network. The information provided in the RIN requires alignment of asset and financial data. This information is externally audited which ensures consistency and traceability of the information.

11.5.6 Current Information Systems

The AusNet Services' Digital division manages the *Information Security Management System (ISMS)* containing a full suite of documents concerning enterprise-wide systems to ensure:

- Assignment of asset information responsibilities that ensure access to department network drives and core asset management systems are protected from un-authorised access, data entry or removal. This is achieved through the application of systems access authorities and authorisation. Authorisation for access to a system is made electronically through the IT Service Portal whereby the appropriate level manager is required to approve applications.
- Maintenance of an Information Asset Registry that lists details of important information assets to be created and maintained.
- Information can be recovered from disaster events.

- Assignment of Asset Information owners who are responsible for reviewing and maintaining accuracy of information entries in the Information Asset Registry and systems, retention, and disposal.
- Classification of asset information in respect of its value, legal requirements, sensitivity, and criticality to the organisation.

The policies contained in the *ISMS* comply with AS/NZS ISO/IEC 27002 *Information Technology – Security techniques – Code of Practice for information security controls*, with relevant allowances made for the size and complexity of AusNet Services' information systems. The policies are available in SharePoint here.

New Information Assets are developed to comply with the AusNet Services ISMS suite of policies and documents.

AS/NZS ISO/IEC 27002 introduced a number of new compliance requirements, along with differences in previous compliance levels. Existing Information Assets are subjected to progressive compliance reviews. Non-compliance areas follow the formal risk assessment process outlined in the *ISMS* documents to identify the appropriate treatment plan.

AusNet Services' information management pertaining to its design, construction and operations activities are managed in accordance with the accredited ISO AS/NZS 9001 Management System. The certification authority for maintenance of this accreditation undertakes bi-annual audits of the Management Systems. Additionally, internal audits are conducted on all facets of the certification and compliance requirements in accordance with QMS 21-11 *Guideline: Technical Compliance Audit*.

11.5.7 Information and Communication Technology Strategy

The Technology division provides the strategic direction for the development of information and communication systems aligned to AusNet Services' Business Plan corporate objectives. The strategic direction is documented in the Technology Plan, which is updated each year as part of the annual business planning process.

The development of Digital programs relating to Network Management is governed by the Network Management Digital Steering Committee. This committee prioritises and governs the overall delivery of the program of work, endorses core scope and business requirements, and endorses relevant business cases.

11.6 Documented Information

Fundamentally, asset management records are identified, collected, indexed, accessed, filed, stored, maintained and disposed of in accordance with governance procedure 10-1030 Document Retention.

11.6.1 Creating and Updating

Templates have been established and published for the creation of asset management documents such as:

- Policy
- Strategies
- Plans
- Business Case
- Technical Standards, and
- Works procedures

11.6.2 Control of Documented Information

AusNet Services now records current and archived copies of asset management documents in ECM, at the following address:

ECM - Home (sharepoint.com)

ECM has assumed the role of the principal asset management document management system used to publish approved versions of key documents.

Objective is used by AusNet Services for the electronic storage of drawings and technical documents recording the detail of the installation of assets in the three energy networks. Objective is used manage the process of editing, reviewing and approving electronic drawings. The *ACONEX* engineering drawing management platform has been used successfully to manage the significant editing, reviewing and approving of electronic drawings necessary for the major brownfield redevelopment projects at Brunswick and Richmond terminal stations.

Records are electronically or hard-copy-listed and include sufficient information for the record to be retrieved in future years. Records are appropriately stored, with consideration to their importance, retention period and regulatory compliance requirements. Confidential and vital records are identified, handled, stored and disposed of in accordance with governance procedure 10-1030 Document Retention.

11.6.3 Records

Records are managed in accordance with the certified AS/NZS ISO 9001 management system. Knowledge and record management includes the maintenance of accurate electronic records of assets and locations, condition assessments and automated condition monitoring in the SAP-based Enterprise Asset Management and Resource Management platform as summarised in Section 11.5.

It also includes the real-time acquisition and management of data regarding network operating parameters and event circumstances from SCADA systems and electronic smart meters. This data facilitates confident, safe and reliable operation of the network, the modelling of future scenarios and the forecasting of performance.

Knowledge and record management extends to include the transfer of intellectual property and informal knowledge through training and mentoring programs.

Related documents include:

- QMS 10-01 HSEQ Management System Manual
- QMS 20-04 Document and Data Control
- 10-1030 Document Retention

12 OPERATION

12.1 Operational Planning and Control

12.1.1 Compliance Management

AusNet Services' operations are subject to a wide range of regulatory requirements, contained in legislation, licences, guidelines and enforceable industry rules. The effective management of compliance is integral to the achievement of our purpose to "empower communities and their energy future".

The *Compliance Management System* has recently transitioned from a lotus notes database to Enablon. Within Enablon, requirements and obligations are assigned to relevant Responsible Persons who complete compliance reports on a periodic basis to provide positive assurance of service and process compliance with both state and national requirements.

Where relevant to their work activities; all employees and their agents are responsible for managing compliance. Employees are expected to be aware of relevant obligations and embedding compliance management in business functions and processes. AusNet Services requires its employees to recognise and report breaches, including situations where there is risk of a potential breach, so that improvements can be made.

The Managing Director is accountable for ensuring that Corporate Compliance Policy is promulgated throughout the business, and ultimately for performance outcomes. The Audit and Risk Management Committee oversees the design and implementation of the corporate compliance framework. It monitors the effectiveness of the framework in achieving compliance and contributing to business performance.

The *Corporate Compliance program* is run in accordance with AS ISO 19600.

12.1.2 Strategic Plan for Integrated Response and Contingency System (SPIRACS)

AusNet Services' Strategic Plan for Integrated Response and Contingency System (SPIRACS) (document number 30-4006-04) provides an "all hazards" approach to the emergency management of incidents. This ensures effective and timely response to emergencies which may affect network safety.

SPIRACS consists of four volumes:

1. SPIRACS Volume 1 'Activation' outlines the principles, criteria and resources to support the activation and escalation of an Emergency Management Team (EMT) or a CMT (Crisis Management Team) in response to an emergency event.
2. SPIRACS Volume 2 'Response' outlines the team structures, roles, key responsibilities and reporting lines for an emergency response.
3. SPIRACS Volume 3 'Recovery' outlines the principles to support the business to return to normal operations or an improved state. Recovery is different to business continuity, as business continuity is the actions required to keep the business operating for as long as safely possible with minimal impact on the customer.
4. SPIRACS Volume 4 'Review' outlines the key post incident review and emergency management framework review arrangements to ensure learnings and continual improvement opportunities are identified and incorporated into the emergency management frameworks and operational response plans.

SPIRACS also contains the following appendices:

1. Emergency Management Overview
2. AusNet Services' Operations and Networks
3. Glossary of Terms
4. References

Figure 14 (taken from SPIRACS Volume 1) shows the process for determining the emergency response team required.

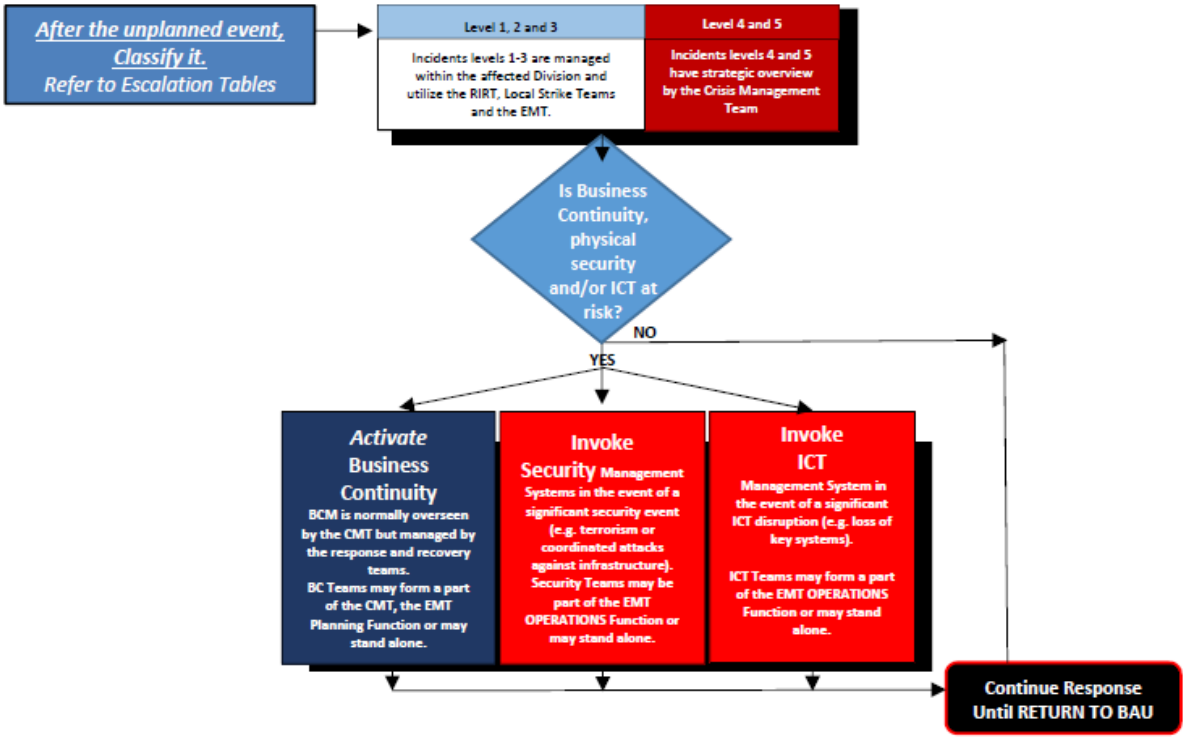

Figure 14: Determining Emergency Response Team Required

As shown in Figure 14 , in general Level 1 incidents are managed by Local Strike Teams (LST). Level 2 and 3 incidents are managed within the affected division by EMT. Level 4 and 5 incidents are managed by CMT.

The role of the LST is to provide the real-time, on-site operational control and response to the incident. Historically, these were known as Regional Incident Response Teams (RIRT).

The role of the EMT is to manage the overall incident, primarily by supporting and assisting the LST. Their primary role is to provide direction to incident response operations, support tactical responders, address tasks best handled at this level and interface with and provide information to external parties.

The CMT maintains an oversight of incident response efforts, provides advice and leadership as required, and focuses on strategic issues relating to corporate reputation, including external communications, potential legal issues and human resources. Once activated the CMT becomes accountable for the overall response.

Documents within SPIRACS align with those of the other industry participants to ensure an effective industry response to emergencies.

SPIRACS ensures effective and timely response to emergencies, which may affect the operation of the network, the health and safety of personnel or the public.

12.1.3 Network Contingency Plans

At a network operational level, network contingency plans have been developed and are reviewed annually. These plans are applicable to events that directly impact or are likely to directly impact or impede the safe and reliable operation of the networks or which interrupt or are likely to interrupt power supply. The objective of the plans is to provide the framework for network contingency planning and provide an overview of the suite of contingency plans established.

The plan includes specific incident response and recovery strategies to cover the summer and winter demand peaks, major transformer failure, selective load shedding and recovery from black starts.

To avoid unnecessary disruption to services following an adverse natural or manmade event; each network has a number of specific continuities plans for various operational and geographical locations within the business.

These are further detailed in the following documents:

- AMS 10-03 Network Contingency Plan (Victorian Transmission Network)
- AMS 20-03 Network Contingency Plan (Electricity Distribution Network)
- AMS 30-05 System Contingency Plan (Gas Distribution Network)
- AMS 30-06 Transmission Pipeline – Isolation Plan

12.2 Management of Change

AusNet Services uses the ADKAR (awareness, desire, knowledge, ability and reinforcement) method of change management as described in CM 10-01 Change Management Framework.

Changes in operations, procedures, standards and equipment are evaluated as part of the PM&R and Cost Out stage gating procedures using the Rapid Change Impact Assessment template, which can be found at:

https://spausnet.sharepoint.com/sites/psnc/ASCR/SitePages/Home.aspx

The template provides a quick and easy method to assess the change and make a high-level assessment of the change management requirements. This ensures that risks arising from these changes are assessed for their impact on the business. This process considers the impact on processes, systems, people and culture.

The PM&R stage gating process is the governance framework that applies to all discrete phase projects at AusNet Services. It follows a four-phase, six-stage process and individual activities are aligned to decision points in SAP-PPM.

More detailed information on how projects are managed is available on the PM&R share point portal at:

https://spausnet.sharepoint.com/sites/snp/PMnR/Pages/Home.aspx

12.2.1 Changes to Networks

The management of change in the AusNet Services' energy delivery networks is governed by mature processes which are subject to the scrutiny of safety and economic regulators.

The regulated nature of these energy delivery networks requires that proposed changes are published for the scrutiny of a wide range of stakeholders.

AMS 20-16 *Distribution Network Planning Standards and Guidelines* outlines the probabilistic approach applied to determine when a network augmentation or asset renewal is economic.

AEMO and connected parties also apply a probabilistic approach toward augmentation of the transmission network.

AusNet Services uses a probabilistic approach to determine the economic scope and timing of transmission network asset renewals.

The results of these planning processes are published on AusNet Services' Internet site in planning reports each year and submitted to the economic regulator as part of revenue and pricing determinations each five or six years.

The AusNet Services' gas network applies a deterministic approach where required pressure limits must be maintained as specified in the Gas Distribution Code of Practice.

12.3 Outsourcing

12.3.1 Scope

The scope of this asset management system includes the selection, engagement and management of independent service providers in accordance with the QMS 21-01 suite of documents. Assessment of the suitability of a service provider's processes, procedures and management systems are within the scope of this asset management system.

The operation and management of a service provider's processes, procedures and management systems are defined within the contract between AusNet Services and the service provider; they are not within the scope of this asset management system.

12.3.2 Principal Service Contracts

Whilst a variety of independent service providers are engaged to deliver specific projects and services for each network the principal service contracts are:

- **Electricity transmission network services (North-west Region)** – In December 2016 AusNet Services extended the contract with Powercor Network Services Pty Ltd from 31 March 2017 to 31 March 2022, with a 5-year option to extend. This contract is for the provision of operations and maintenance services in the north-western portion of the Victorian electricity transmission network. This contract follows a similar arrangement for network services, which was established, between these parties in 2007. The rights and obligations of this service provision are set in the North-West Transmission Maintenance Contract. Effective 1 January 2018, the contract was novated to Beon Energy Solutions Pty Ltd, the wholly owned unregulated subsidiary of Powercor Network Services.
- **Electricity transmission network services (Central and East Region)** – In April 2020 AusNet Services entered into a 7-year contract with Zinfra to provided station maintenance services in the Central and East region of the transmission network. Prior to this Central and East (Secondary teams) were internally staffed, and since 2012 East (Primary team) was contracted with BMC.
- **Electricity distribution network services** – In April 2013 AusNet Services established a five-year contract with Tenix Australia Pty Ltd (now Downer Group) for the provision of fault and emergency works, asset replacement works, and some capital project works in the central service region of AusNet Services' electricity distribution network. The contract has a provision for five individual one-year extensions, subject to achieving certain key performance indicators. This contract was terminated in September 2019 and replaced with an 11-year Operating and Maintenance Service Agreement and following a competitive market process was awarded to the Downer Group.
- **Gas network services** – In April 2013 AusNet Services established a five-year contract for the provision of customer connections, network operation, fault and emergency works, asset inspection and replacement works and some minor capital project works on the AusNet Services gas network with Tenix Australia Pty Ltd (now Downer Group). The contract has a provision for five individual one-year extensions, subject to achieving certain key performance indicators. Major capital works are subject to competitive tenders from

registered Installation Service Providers. In September 2019 this contract was extended to 31 March 2026.

- **Gas meter reading services** – In February 2018 AusNet Services established a three-year contract with Downer Group for the provision of gas meter reading services. The contract has the provision for two one-year extensions.

12.3.3 Interfaces

In general terms, principal service providers do not operate within the AusNet Services' asset management system but are required to use similar practices to those specified in the AusNet Services' asset management system.

Each contract between AusNet Services and a principal service provider defines the processes and activities the service provider will undertake; the interfaces with AusNet Services' processes, the rights, responsibilities and authorities within AusNet Services to manage the service provision and the processes for the sharing of knowledge and information.

12.3.4 Contract Management

A Contract Management Leadership Team (CMLT) or Steering Committee (SteerCo) formed from the General Managers of the principal service providers and AusNet Services and meets on a quarterly basis to review and actively manage the principal service contracts.

The role of the CMLT/SteerCo is to:

- Establish and maintain effective communication;
- Review performance, unplanned events, emerging risks;
- Initiate and oversee corrective actions; and
- Provide an escalation capability within each major contract.

12.3.5 Management Systems

AusNet Services requires principal service providers to establish and maintain:

- A quality management system certified to AS/NZS ISO 9001;
- An environmental management system certified to AS/NZS ISO 14001; and
- A health and safety management system certified to AS/NZS 4801.

12.3.6 Management Procedures Manual

AusNet Services relies upon the existing ISO certified policies and procedures of the principal service provider. However, where existing policies and procedures are not considered satisfactory; AusNet services may require the service provider to establish, utilise and audit compliance with a Management Procedures Manual containing plans for:

- Operational Management;
- Quality Management;
- Environmental Management;
- Risk Management;
- Emergency Management;
- Occupational Health and Safety, and
- Security.

12.3.7 Standards

Each contract between AusNet Services and a service provider defines the Australian Standards, AusNet Services' standards and the Legislation and Regulation with which the service provider must conform.

12.3.8 Records and Reporting

Service providers are required to keep accurate records and report to AusNet Services:

- Accidents and incidents;
- Risk assessments and hazard controls;
- Performance reports and corrective action summaries;
- Audit plans; and
- Inspection and audit findings.

12.3.9 Audit

Contracted resources are subject to regular audits to verify compliance with specified technical, operational and safety standards and legislative requirements. Audits are undertaken in accordance with QMS 21-11 *Guideline: Technical Compliance Audit* to ensure compliance in all aspects of the design, construction, installation, operation and maintenance of the energy networks.

12.3.10 Compulsory Competitive Tender Process

The regulatory framework provides for the calling of competitive tenders for connection and augmentation related works to the three energy networks which allows connection proponents to market-test network augmentation costs. Tendering for augmentation works on the transmission network is managed by AEMO. Accordingly, the network functions of design, project management, and construction can be undertaken by service providers independent of the network owner or operator. However, assets to be connected to the energy networks must comply with AusNet Services' technical standards before connection or inclusion in AusNet Services' physical and financial registers.

12.3.11 Contractor Accreditation

In addition to network augmentation activities, contract resources are also utilised across the three energy networks to provide asset inspection, replacement and maintenance activities. QMS 21-01 *Contractor Accreditation Guidelines* provides the requirements to accredit service providers for the provision of design and engineering consultancy, installation services, construction services and maintenance services.

AusNet Services' assessment and accreditation is conducted in accordance with *Contractor Induction Checklist* and core competencies adopted are outlined in document *Contractor Training Records Management*.

13 PERFORMANCE EVALUATION

13.1 Monitoring

13.1.1 Energy and Demand

Time related commodities such as electrical energy consumed, gas volume delivered, and peak consumer demand are monitored via electro-mechanical meters and Advanced Metering interval (AMI) electronic meters at consumer's installations and via SCADA at key locations within each energy network. Meter readings and SCADA measurements are stored and made available to other industry participants in accordance with requirements of National Electricity Rules and National Gas Rules. Other industry participants are provided with access to SCADA records for the purpose of reporting or forecasting future energy requirements.

13.1.2 Events

Event records such as storm damage, equipment failure and consequent supply outages and customers affected are recorded in the DOMS and the Enablon. Transmission network equipment failures are recorded in the SAP-based Enterprise Asset Management information system. Event related data is summarised in monthly key performance indicator reports to line and executive managers.

Data is analysed, reported and presented to the AMC in an annual performance report for each network.

13.1.3 Planned Works and Expenditures

Planned works such as customer connection requests, capacity augmentation projects and programs of asset renewal are monitored against progress and expenditure targets by the PM&R in accordance with the monthly operating rhythm.

The Network Safety Management Committee monitors progress on safety-related inspection and maintenance programs on a monthly basis.

13.1.4 Asset Condition

The condition of network assets, as measured by the asset inspection processes, is recorded in the Enterprise Asset Management information system. Asset condition is periodically summarised in Asset Health Reports and Asset Management Strategies for each asset class.

13.1.5 Risk

Risks are continuously monitored through key performance indicators, which provide the ability to monitor trends and the effectiveness of asset management programs.

Formal risk reviews are triggered by the review interval set in Enablon, or more frequently if there are concerns raised by risk or control owners that there are significant changes occurring in the operating environment that may have a material effect on the risk.

Risk owners, supported by risk management leaders in relevant divisions of AusNet Services, ensure that network safety related risks are formally reviewed in the required timeframe, which is usually no longer than 12 months.

The review will typically be co-ordinated by the risk management leader for the division owning the risk and will comprise a workshop/meeting of the risk owner and key control and task owners. At this workshop all aspects of the risk assessment are reviewed.

13.2 Measurement

A majority of the performance measures employed in regulated energy networks are established in Regulation or by national standard or industry Code of Practice.

For example, ESV has established the definitions of network events such as gas leaks and fire ignitions which must be recorded and subsequently reported. AusNet Services uses these industry standard definitions of performance measures for internal purposes as well as external reporting. The definitions of performance measures are included in the formal works procedures, which guide employees and contractors in the information capture and subsequent analysis of event driven data. The safety regulator audits the data capture, analysis and reporting of event driven data in accordance with the performance measures it has established on behalf of consumers and other stakeholders.

The AER specifies the definition of relevant performance measures in each regulatory determination and more detailed definitions in Regulatory Information Notices. AusNet Services uses these industry standard definitions of performance measures for internal and external reporting. Information provided to the Australian Energy Regulator is subject to independent due-diligence and audit against the performance measure definitions.

The Essential Services Commission (ESC) has specified the performance measures for each energy network in regulatory instruments such as the Distribution Code, System Code and Gas Code. As these Codes are Licence obligations, all data capture, analysis and reporting are undertaken in accordance with the ESC definitions for performance measures.

13.3 Analysis

The analysis of performance metrics is undertaken in accordance with the definitions and methodology established by the safety and economic regulators to ensure consistency with regulatory reports and facilitate comparison with peer network businesses.

A significant example of where consistent industry wide analysis is required is the publication by the AER of an Economic Analysis Benchmarking Report and a Category Analysis Benchmarking Report for the electricity distribution and transmission networks, based on data collected through the Regulatory Information Notices (RINs). Adherence to the regulator's specification for analysis is enforced by independent due diligence and audit processes to facilitate comparisons of relative efficiency between networks.

Additionally, AusNet Services sets internal network performance targets for each of the three networks.

When monitoring and measurement identify poor benchmarking or consistently missed targets, analysis is undertaken using risk assessment techniques, as described in Section 10.2.

13.4 Internal Audit

AusNet Services facilities are also subject to regular audits to verify compliance with specified technical, operational and safety standards and legislative requirements. Audits are undertaken in accordance with *QMS 21-10 HSEQ System and Compliance Audits* to ensure the requisite compliance is achieved in all aspects of the design, construction, installation, operation and maintenance of the AusNet Services network.

Audits of the asset management system are undertaken in accordance with the asset management system audit schedule (AMS 01-01A) and asset management system audit checklist (AMS 01-01B).

The audit schedule is prioritised based on the status and importance of each clause of ISO 55001.

The status is determined by considering previous audit and benchmarking results, with the criteria shown in Table 4.

Table 4: Status Criteria

Status	Criteria
Excellent	Audit score greater than 70% and greater than maximum of ANZ benchmark
Efficient	Audit score greater than 50% (and less than 70%) and greater than maximum of ANZ benchmark
Competent	Audit score greater than 50%, but less than the maximum of ANZ benchmark

The importance is determined considering the alignment to business objectives.

These are combined to determine a risk rating, as shown in Figure 15, which is used to determine the frequency of audit. Areas determined to be high risk are audited annually, those with medium risk are audited every two years and those with a low risk are audited every three years.

		Importance		
		Least	Moderate	Most
Status	Competent	Medium	High	High
	Effective	Low	Medium	High
	Excellent	Low	Low	Medium

Figure 15: Audit Schedule Rating

Audit teams, whether sourced from external consulting firms or internal staff, are trained to ensure a competent and consistent approach, suitability and effectiveness of auditing.

Results of audits are summarised and reported to the AMC, NSMC, and ARMC, as applicable.

Non-compliance and recommended improvement opportunities requiring action are recorded in Enablon.

13.5 Management Review

Management review is undertaken to ensure that process capability is maintained, improved and that policies and objectives are identified, measured and reported in accordance with QMS 20-01 *Management Review*.

The review includes items such as:

- On-going performance against internal key performance indicators (KPIs), objectives and targets;
- Review Policies, Business and Management Plan's as appropriate;
- Process and system changes in gaps, risks, deficiencies, suitability and effectiveness;
- Results of audits (internal, external and certification);
- Corrective actions statistics and performance;
- Regulatory and legislative impacts on the system;

Each year, in accordance with its calendar of activities, the Asset Management Committee reviews the performance of each energy network and the effectiveness of the asset management system as precursors to the annual update of the Asset Management Strategies for each network and the five-year asset management plan.

The Network Safety Management Committee meets on a monthly basis and monitors and reports on the effectiveness of risk management controls associated with key network safety related risks. This is achieved by using KPIs to track the management of these risks, including monitoring the timely completion of network safety programs. The Network Safety Report

(NSR), prepared for the monthly meetings, contains detailed information on the trending of network safety related KPIs and the outcomes of quality audits. A summary of the NSR is provided to the Executive Management Team.

14 IMPROVEMENT

14.1 Nonconformity and Corrective Action

The following procedures provide instruction on the required data, timeframes and responsibilities for reporting an asset related incident:

- SOP 35 02 Electrical Incident Investigation and Reporting for Electricity Transmission Network;
- SOP 30-2010 Electrical Incident Investigation and Reporting for Electricity Distribution Network, and
- TS 0503 Gas Incident Reporting.

Incidents requiring investigation have information entered into the IMS the Event Management module of Enablon, which also provides the required regulatory reporting information to ESV.

IMS is also designed to prompt the user to provide the required information and provides the ability to track and report against timelines and line management responsibilities. Investigation tools such as Apollo Root Cause Analysis and FMECA may be utilised in the investigation of incidents depending on the complexity or severity of the consequences. IMS is also the management tool used to record non-conformances and improvement recommendations from all audits with the business.

Enablon is an intranet-based system which is accessed via The Loop or via a desktop icon.

Figure 16 is a screen shot of the Enablon homepage.

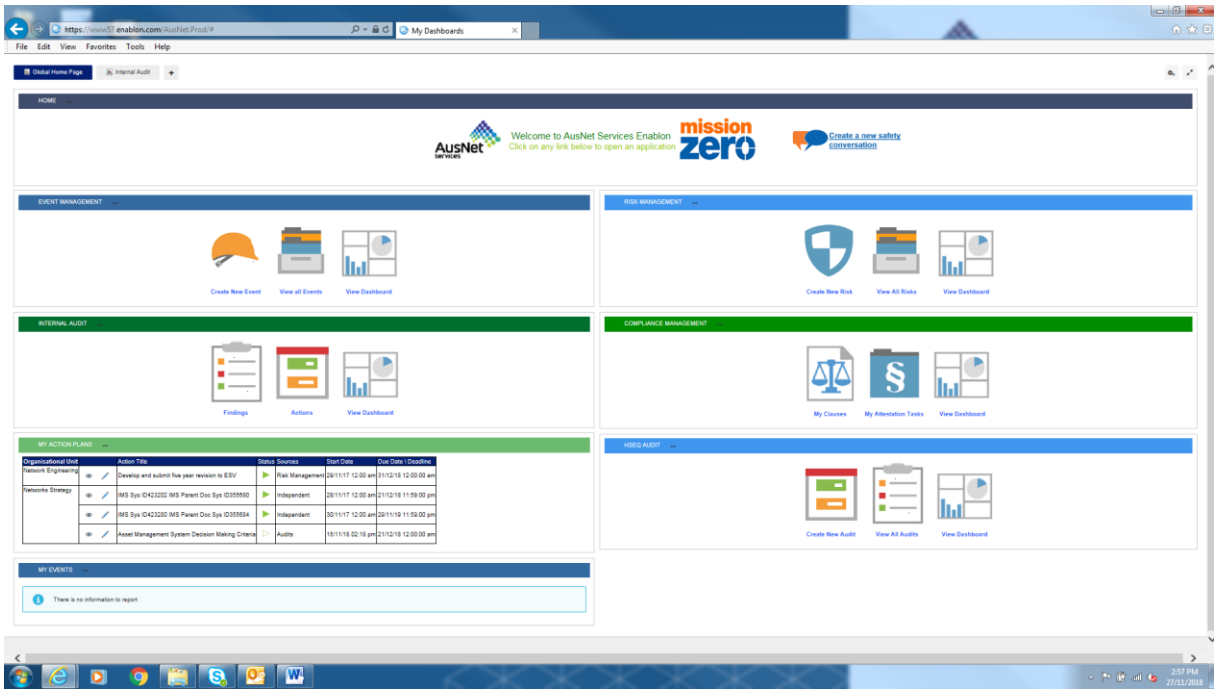

Figure 16: Enablon Homepage

14.2 Condition Monitoring and Preventative Action

QMS 21-04 *Corrective and Preventative Action* defines the corrective and preventative action process to identify and eliminate the causes of actual or potential non-conformances.

14.2.1 Electricity Distribution Network

AMS 20-17 *Reliability Maintained* summarises the prevailing asset condition monitoring techniques employed in the electricity distribution network. It also describes the techniques used to summarise condition data in Asset Health Reports and the use of such data in asset failure probability forecasts.

This information is used to guide asset replacement plans and optimise maintenance efforts.

14.2.2 Gas Network

The monitoring of gas network asset condition is undertaken by a combination of:

- Real-time data acquisition and recording via SCADA systems,
- Leakage surveys, leak reports, and Unaccounted for Gas monitoring,
- Asset inspection programs and corrosion surveys, and
- Gas quality monitoring, including management of oil-in-gas issues.

AMS 30-01 Section 10.4 *Condition Monitoring* describes how AusNet Services monitors the condition of its gas network to inform asset replacement plans and optimise maintenance efforts.

14.2.3 Electricity Transmission Network

AMS 10-19 Plant and Equipment Maintenance summarises the prevailing Visual, Off-line, On-line and Scanning techniques employed to assess asset condition in the electricity transmission network. It also describes the asset class condition summaries in Asset Health Reports and the use of such condition data as the foundation for asset failure probability forecasts.

AMS 10-17 *Victorian Electricity Transmission Network Performance Monitoring* describes the process for monitoring the performance of the electricity transmission network, including the reporting of malfunctions and trends in plant and equipment performance to enable corrective and preventative actions to be taken in a timely manner.

14.2.4 Reactive Monitoring

Reactive monitoring is applied through forensic analysis and report preparation of major plant and equipment in-service failures or failures that have resulted in reportable or major incidents. These events are logged in the IMS and a report and recommendations are completed.

Examples of this include capacitor voltage transformer (CVT) and bare conductor failures that have resulted in the subsequent implementation of enhanced condition monitoring and replacement programs.

14.2.5 Leading Indicators

The comprehensive audit and compliance program maintained by AusNet Services includes audit of asset management systems, processes, training, work practices and construction standards.

Results of audits are reviewed by the HSEQ Systems Manager to identify opportunities to modify asset management systems or work practices to ensure compliance to required design and performance standards.

On-line monitoring of lines and plant provides real-time monitoring of the network and its status together with the ability to remotely control. Off-line asset condition assessment data is obtained through cyclic and duty-based inspection, testing and maintenance programs. The scheduling of these programs is maintained in the Enterprise Asset Management information system together with asset condition assessments.

Respective asset class technical standards have established asset condition assessment criteria against which an assessment of condition and/or remaining life or performance is determined.

Combination of asset performance monitoring data and regular review of individual plant strategies provides the ability to determine the effectiveness of asset management strategies together with the opportunity to modify maintenance and replacement programs.

14.2.6 Lagging Performance Indicators

Analysis of Enterprise Asset Management information system and Enablon data, together with *PowerOn Fusion* for electricity and gas, provides frequencies of unscheduled asset maintenance and in-service failures that indicate that existing inspection and maintenance programs may need adjustment. This generally requires analysis by asset class to identify the cohort that requires a modified inspection and maintenance schedule or initiation of a replacement program.

14.2.7 Qualitative and Quantitative Measures

SCADA operating data provides quantitative status of the network for all networks and provides confirmation the respective network is operating within designated design parameters. This data also provides the planning forecast information required for network augmentation.

In general terms, asset inspection and condition criteria for electricity network lines can be regarded as qualitative based upon visual assessment criteria that are used to provide a deterministic assessment of when the asset is to be replaced. The exception is wood pole assessment which has quantitative criteria to determine asset replacement or reinforcement requirements. Plant within electricity terminal and zone stations such as transformers and circuit breakers have quantitative condition assessment criteria used in a qualitative manner to undertake replacement risk modelling.

The gas network utilises quantitative measures to drive mains and meter replacement programs as well as network augmentation. Network leaks, identified through leakage surveys and customer reports, are applied to risk-based models to drive mains replacement requirements. Sample testing techniques are applied to ascertain meter replacement programs and network modelling is used to ascertain reinforcement requirements based on current and predicted network performance and growth.

14.2.8 Effectiveness and Efficiency

Monitoring of trends in unscheduled network outages, in-service asset failures and unplanned incidents provides an indication of asset condition monitoring programs and their respective effectiveness. The efficiency of proposed augmentation to asset monitoring programs is assessed when reviewing asset management strategies to establish the optimal outcome between on-going inspection and maintenance versus refurbishment and replacement options.

Undertaking an options analysis requires an assessment of the risks associated with the options and a subsequent cost benefit analysis.

Among a range of tools used in assessing asset life cycle management options, AusNet Services utilises Reliability Centred Maintenance, Apollo Root Cause Analysis and FMECA.

The safety management schemes (ESMS and Gas Safety Case) are systems designed to meet the legislative requirement for a risk-based approach to network safety management which is heavily dependent upon asset management. As such, these systems are outcome focussed and have performance monitoring systems that continuously identify opportunities to cost effectively manage safety risk as far as practicable.

- For further information, refer to:
- AMS 10-01 Transmission Asset Management Strategy
- AMS 10-19 Plant and Equipment Maintenance
- TOC 207-8 CVT Asset Monitoring System
- ESMS 20-03 Electricity Safety Management System
- AMS 20-01 Electricity Distribution Asset Management Strategy
- AMS 20-17 Reliability Maintained
- ESMS 10-03 Electricity Safety Management System
- AMS 30-01 Gas Networks Asset Management Strategy
- GSC 10-01 Facilities Description and Safety Management System Overview

14.3 Continual Improvement

14.3.1 Culture

Continuous improvement is achieved within AusNet Services by linking our business plan initiatives through division and department plans to an individual's 'Annual Incentive Plan' and 'Personnel Development Plan' which instils an 'improvement culture'.

AusNet Services employees participate in annual performance review and appropriate training in order to improve competence and performance.

14.3.2 Process

The business performance management framework defines the principles, tools and methods to enable business performance and continuous improvement to be effectively managed within the organisation and that business processes are constantly evaluated and improved.

As shown in Figure 17, the framework acknowledges that the organisation is comprised of the three regulated energy businesses, numerous business functions and core business processes all interacting to deliver for our customers.

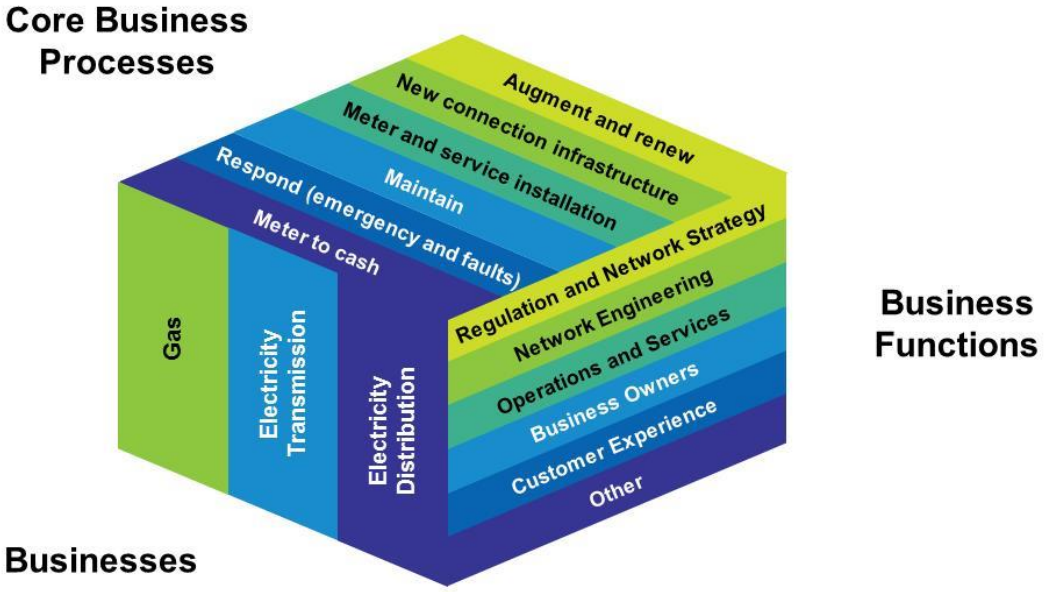

Figure 17: Business, Business Functions and Business Processes

Six core business processes have been identified as key to focus on what customers want from the business.

The six core business processes are:

1. Augment and renew
2. New connection infrastructure
3. Meter and service installation
4. Maintain
5. Respond (emergency and faults)
6. Meter to cash

A Process and Data Sponsor and an end-to-end business process flowchart support each of these business processes.

The processes are owned by business units with the Process and Data Sponsors established to monitor overall process performance by phases and provides oversight of improvement projects which cross functional areas.

The Enterprise Process Management Team, who provides specialist process improvement, governance and automation skillsets, supports these sponsors.

An Operational Process and Data Council has been established for Process and Data Sponsors to collaborate, scope, review and recommend transformational process and data improvement initiatives to the Portfolio Investment Committee or other forums.

Process Performance comprises three components, which work together to provide a single view of performance of the whole process and enable a culture of continuous improvement.

These components are:

1. Own and Manage
2. Transform and Improve
3. Visible and Understood

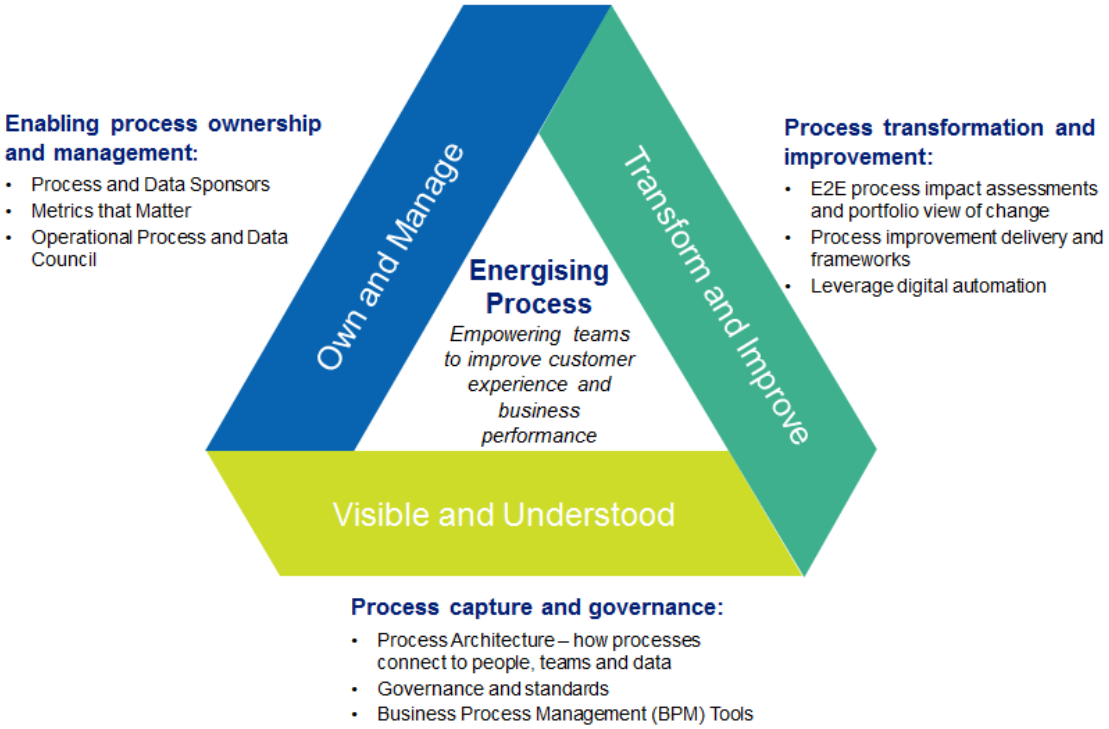

Figure 18: Components of Process Performance

Teams must understand where they fit and contribute into the end-to-end process so they can drive performance on what matters to the end customer.

The Process Performance key metrics (“Metrics that Matter”) provide clarity on how the business measures success and stimulates discussion of how and why performance has changed and promotes discussion of the barriers to achieving the desired performance outcomes.

The Process Improvement Tools and Methods provide a structured approach to delivering process improvements.

Processes are documented and managed to a consistent process framework established by Enterprise Process Management Team and published in accordance with QMS 10-01 *HSEQ Management System Manual*.

To ensure successful Process Performance it is important that all levels of leadership be involved to varying degrees, as shown in Figure 19.

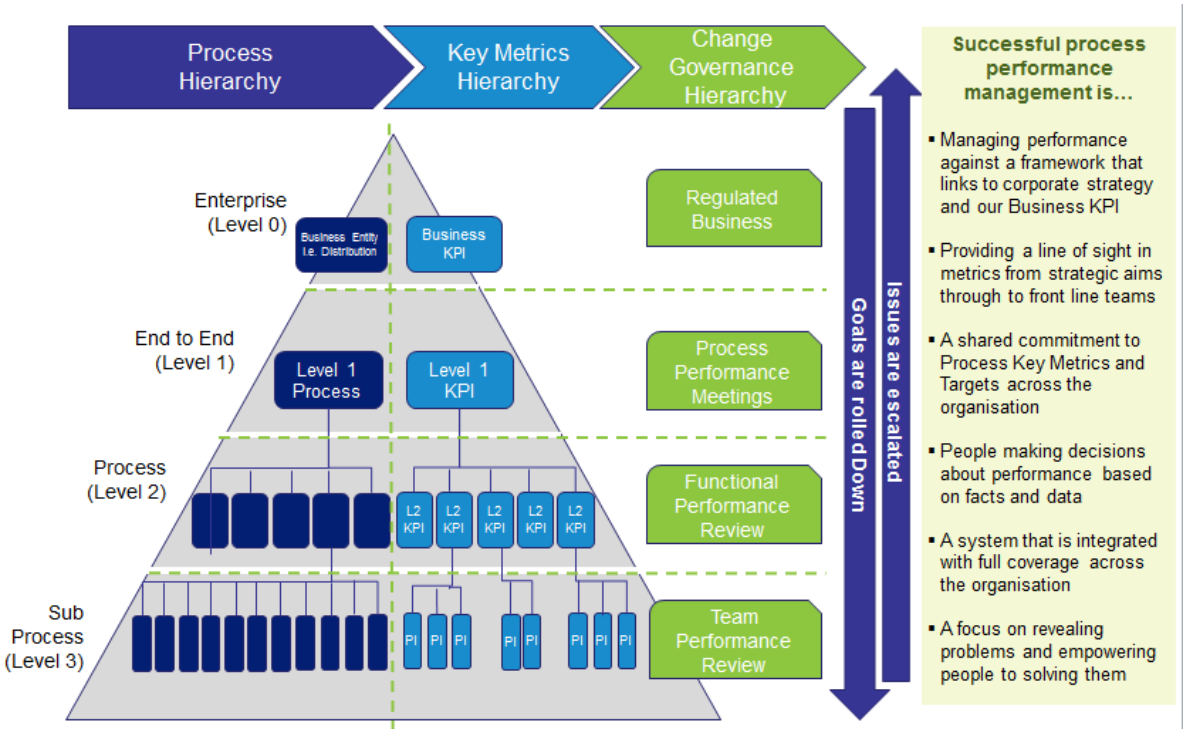

Figure 19: Process Performance Hierarchy

14.3.3 Economic

The economic regulatory framework under which AusNet Services secures its operating revenues is subjected to regular review, normally every five years. These reviews require demonstration that the respective Asset Management Strategy for each network is delivering the optimal balance between customer service and price. These reviews require AusNet Services to complete and submit a detailed price and service proposal to the AER, which is subject to public, customer and stakeholder review and comment. The preparation of a price proposal requires the demonstration of asset replacement and augmentation programs that achieve industry best practice evident through the systematic process of benchmarking by the AER of other energy networks. Efficient delivery of network services is achieved through a combination of competitively tendered and in-house service provision.

Economic and life cycle modelling associated with the respective Asset Management Strategy for each network underpins the price proposals provided to the AER for review and comparison. The highest level of each of the asset management strategies is reviewed and

updated each year and their supporting foundation and implementation strategies and procedures are reviewed prior to each regulatory price reset and maintained within price reset periods as required. The AMC oversees this process of review and update and endorses the annual publication of each asset management strategy. Implementation of the Asset Management Strategy and Plans is monitored by the AER and details published for the information of customers and stakeholders through the AER's Comparative Benchmarking Report.

14.3.4 Technical

Asset management drivers requiring the delivery of economic and efficient customer network services requires an equal focus toward the continual development and adoption of new technology to enable the delivery of optimal network services.

Activities that assist in this include:

- Membership and participation in key industry organisations (ENA, CIGRE, IEEE);
- Participation in industry field days and seminars;
- Participation and collaborative research and development with Universities;
- Participation in State, National and International benchmarking;
- Membership and subscription to trade and industry journals and magazines; and
- ESV comparative reporting and audit processes.

14.4 Improvement Plan

Continual improvement actions are identified and logged in several ways, including:

- System audits;
- Activity audits, such as worksite quality audits;
- Internal audit reports, prepared by the Internal Audit Team;
- Actions in annual business plans; and
- Asset Management Committee meeting minutes and actions.

14.4.1 Recording Audit Findings

Each audit will result in a number of findings, which include items where the system does not conform with the standard (minor and major non-conformances) and items where, in the opinion of the auditor, the system could be improved (opportunities for improvement).

All non-conformances and opportunities for improvement shall be raised as a corrective action in Enablon to allocate responsibilities, record progress and monitor close out as per QMS 21-04 *Corrective and Preventative Action*.

For each audit, one audit finding shall be raised in Enablon for each:

Major Non-conformances;

Minor Non-conformances; and

Opportunities for Improvement.

Once the findings have been created, an action plan, or plans, can be created to address the finding. If it is decided not to progress an opportunity for improvement, no action item needs to be raised.

The due date for action items shall be:

- Major Non-conformances – 3 months from audit date
- Minor non-conformances – 12 months from audit date

- Opportunities for improvement – 2 years from audit date (see note).

Note:

- If an opportunity for improvement stems from an internal asset management audit of a high risk aspect on a one year audit cycle (refer Section 13.4), the due date for action items shall be one year from the date of the audit.

14.4.2 Addressing Non-conformances and Opportunities for Improvement

It is a requirement of ISO 55001 for non-conformances to be addressed.

Opportunities for improvement are simply opportunities, which may or may not be taken.

The criteria for deciding whether to implement an opportunity for improvement are:

- Estimated cost to implement versus the expected benefit;
- Resource availability to implement the opportunity;
- Complexity or difficulty of implementation; and
- Alignment with existing organisation initiatives.

14.4.3 Close-out process

Evidence of Corrective Actions meeting the ‘Success Criteria’ can be submitted to the auditor during an audit or forwarded to the auditor with a request for review following an audit.

If required, the auditor will convene a teleconference with the appropriate AusNet Services people. If there is sufficient evidence to close the non-conformance, it will be ‘closed subject to verification’ at the next Certification or Surveillance Audit.

14.4.4 Open Non-Conformances Resulting from External ISO 55001 Audits

There are currently no open non-conformances resulting from external ISO 55001 audits.

APPENDIX A SCHEDULE OF REVISIONS

Issue	Description
1	Initial version –Transmission AMS only
2	Appendix A updated
3	New corporate AMS replaces old version
4	Sec 6.3 Learning Development and Training revised. Sec 6.6 Information Management revised.
5	Major editorial and reformat to reflect ISO 55000 structure and corporate re-branding. Improvement Plan from certification audit included.
6	Minor editorial and update of Improvement Plan arising from 2015 Effectiveness Review and ISO 55001 surveillance audit. Desalination power supply assets added to scope and other assets managed by contract excluded from scope
7	General editorial and update of improvement plan following 2016 ISO 55001 surveillance audit
8	General editorial and update of improvement plan following 2017 ISO 55001 certification audit. Structural changes to facilitate closer alignment to ISO 55001.
9	Section 5.1 updated to provide more detail on recording and reporting requirements. Section 10.3.1 updated to incorporate finding from internal audit (Assessment Number 290). Updated to add Enablon to IMS references. Hyperlinks updated.
10	Section 8.1 updated to provide more detail. Section 8.5.5 updated to provide more information on risk management. Section 9.3.1 organisation structure updated Section 10.2.3 updated to cover both qualitative and quantitative risk techniques. Section 13.3 updated to cross-reference risk management sections. Section 14.2.8 reference to dependability management removed. Section 14.4.1 updated with due dates. Section 14.4.4 updated with closed NCR
11	Section 9.1.3 Updated to remove reference to HSEQ Management Review Committee Section 9.2 updated with new asset management policy Section 9.3.1 updated with new organisational structure Section 11.6 document retention references updated

Issue	Description
12	Section 3 Updated reference from Select Solutions to Mondo and included reference to gas transmission pipelines Section 5.2 Customer engagement updated Sections 6 and 10.1 Updated to incorporate Energising Futures Section 7.2 Asset Information Systems updated Section 7.4 Description of network updated Section 7.5 Description of network updated Section 7.6 Exclusions updated Section 8.5.1 ESMS reference numbers updated Section 9.3 Org chart updated Section 9.3.2 Reference to RACI removed Section 10.1 Safety objective and customer objective updated, and figure updated Section 11.3.2 Reference to RACI removed Old Section 11.4.2 Customer Strategy and Implementation Roadmap deleted Section 11.4.2 Updated to reference EDPR Customer Forum Section 11.4.3 reference to Customer Charter added Section 11.5 Information Requirements updated Section 12.1.2 Updated to reflect SPIRACS review Section 12.1.3 Reference to Transmission Pipeline Isolation Plan added Section 12.2 Reference to ADKAR method of change management added Section 12.3 Outsourcing updated Section 13.4 ECM numbers added for AMS audit schedule and checklist and criteria for prioritisation of audit schedule added. Section 14.2.5 Updated to reflect current HSEQ audit review process Section 14.3.2 Process continual improvement section expanded Section 14.4.1 Due date for Major NCR actions change to 3 months for audit report date and clarification around OFI dates added. Section 14.4.4 Updated to reflect results of 2019 audit. Appendix Schedule of Revisions added Appendix Acronyms added
13a	Updated and revised several sections due to organisational structure and name changes Added in 7.6 Unregulated Electricity Transmission section Section 10.1 Network Performance objective and figure updated, Section 12.3 Outsourcing updated with Zinfra contract
13b	Updated 6.3 Strategic Objectives Updated Figure 13 Executive Leadership Team Updated section 11.5 Information requirements Updated 11.6.2 ECM Link
14	Section 9.2: Updated Asset Management Policy Section 9.3.1 Updated Executive Leadership Team chart and roles descriptions

APPENDIX B ACRONYMS

ADKAR	Awareness, Desire, Knowledge, Ability and Reinforcement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
SAMC	Strategic Asset Management Committee
AMI	Advanced Metering Infrastructure
AMP	Asset Management Plan
ARMC	Audit Risk and Management Committee
CMLT	Contract Management Leadership Team
CMT	Crisis Management Team
C-SAT	Customer Satisfaction Score
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CVT	Capacitor Voltage Transformer
DOMS	Distribution Outage Management System
ECM	Enterprise Content Manager
EGM	Executive General Manager
ELT	Executive Leadership Team
EMT	Emergency Management Team
ENA	Energy Networks Australia
ESC	Essential Service Commission
ESV	Energy Safe Victoria
FMECA	Failure Modes, Effects and Criticality Analysis
GIS	Geographic Information System
HSEQ	Health, Safety, Environment and Quality
ICT	Information and Communications Technology
IMS	Issue Management System
ISRAT	Infrastructure Security Risk Assessment Tool
JSA	Job Safety Assessment
KPI	Key Performance Indicator
LST	Local Strike Team
LPG	Liquefied Petroleum Gas
NSMC	Network Safety Management Committee
NSR	Network Safety Report
PIR	Post Implementation Review
PM&R	Portfolio Management and Review

RES	Regulated Energy Services
RIN	Regulatory Information Notice
RIRT	Regional Incident Response Team
SAMP	Strategic Asset Management Plan
SCADA	Supervisory Control and Data Acquisition
SME	Subject Matter Expert
SPIRACS	Strategic Plan for Integrated Response and Contingency System