Attachment 20.32

SA Power Networks: Information Technology Investment Plan 2015-2020

October 2014

Information Technology Investment Plan 2015 – 2020

Version 1.1

20 October 2014

SA Power Networks

www.sapowernetworks.com.au

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Foreword from the CIO

This Investment Plan for Information Technology (**IT**) supports the SA Power Networks Regulatory Proposal 2015-2020 and contributes to the achievement of our organisation's business objectives. It leverages the SA Power Networks Strategic Framework, which lays out the organisation's strategic intent, business drivers and core areas of focus.

Our IT function is one of the most efficient IT service providers among the Australian Distribution Network businesses. Recent benchmarking studies have consistently identified us as one of the lowest cost IT operators within the Australian Utilities industry.

IT is a fundamental part of the business and the organisation will expect more IT enablement and support in the future, as it delivers on our customer and regulatory obligations in a rapidly changing environment. There are strong indications that we are on the brink of the most significant and transformative change in the distribution sector since the establishment of the National Electricity Market. As a progressive organisation, we will continue to build and develop our capabilities to ensure we can deliver on all our regulatory obligations and meet our customers' expectations whilst supporting the business through the period of significant change.

We are also at the start of a period of very significant IT change driven by:

- Lifecycle requirements of systems including:
  - maintaining a larger number of current systems to required levels of security and performance;
  - maintaining our core IT capabilities through orderly refreshes of infrastructure, operating systems and business applications; and
  - replacing or refreshing our core systems to ensure service continuity and provide the foundations for the long-term future.
- Greater expectations on IT from the customers and business, which include:
  - increased data requirements for compliance reporting;
  - developing an integrated enterprise end-to-end business process approach to deliver efficiencies;
  - maintaining our systems and information security in an increasingly connected world; and
  - preparing for the expected changes in the National Electricity Market.

Our strategic response to this has been to develop a large-scale program of work to maintain and deliver the business performance and functionality and to build the IT capability required by the organisation, while simultaneously working to simplify the technology environment to sustainably control long-term costs.

By embracing the opportunities from digital technologies over the next few years, SA Power Networks will be well placed for the long term. Enterprise information management systems will revolutionise our ability to efficiently manage assets through their life cycles, enhance valuable information access opportunities for customers and enable our dispersed workforce to retrieve the information they need, when they need it.

This Plan has been developed after a significant period of consultation, IT requirements gathering and planning across all areas of SA Power Networks' business. The associated document, *IT Strategy 2014-2020*, provides the IT Department's strategic directions for maintaining our existing services and for delivering on, and contributing to, the large program of work outlined in this Plan.

On the following pages, you will find a description of the IT Investment Plan for the period from 1 July 2015 to 30 June 2020.

1. Executive summary

This IT Investment Plan sets out a comprehensive program of investments that underpins the delivery of business objectives within SA Power Networks' core focus areas. This program is driven by our customer and regulatory obligations and our strong desire to maximise opportunities presented by technology while controlling and where possible reducing technology costs. We are confident in our ability to implement this program efficiently and deliver tangible benefits to our customers.

Introduction

SA Power Networks has been delivering efficient, reliable and safe electricity network performance to South Australians for almost 70 years. The Information Technology (**IT**) function of SA Power Networks has successfully delivered cost effective, reliable and secure services to our customers and has been consistently recognised as one of the lowest cost IT operators among the Australian Distribution Network Service Providers (**DNSP**s)[1].

As a monopoly distribution network service provider, SA Power Networks is subject to comprehensive State and Federal regulation. This IT Investment Plan 2015-2020 (the **Plan**) supports the SA Power Networks Regulatory Proposal for the 2015-2020 regulatory control period (**RCP**)[2] and contributes to the achievement of the business objectives.

Over the past decade, Information Technology has become increasingly important in enabling and supporting the business. The IT function is now a fundamental part of the business and the organisation will expect more IT capabilities in the future, as we deliver on our customer and regulatory obligations and move towards our Future Operating Model. The analysis of strategic issues faced by SA Power Networks indicates that the most significant and transformative change in the distribution sector since the establishment of the National Electricity Market (**NEM**) will occur over the next five to ten years. In conjunction with the *IT Strategy 2014-2020*, this Plan outlines the approach to enabling and supporting the organisation through this period of major industry, regulatory and market change whilst providing a sustainable long-term technology platform for the business.

IT investment plan summary

In order to enable the delivery of the outcomes defined in the SA Power Networks Regulatory Proposal for the 2015-2020 RCP, the IT function will require a total Capital investment of $286.92m[3,4,5] and Operating expenditure of $187.89m. Additionally, the business tasks (**non-IT**) Capital expenditure associated with the implementation of the IT projects is estimated at $43.02m.

This represents a significant increase in the IT investment compared to the 2010-2015 RCP and is needed to:

1. **Manage lifecycle changes of our core systems** (approximately 27% of the total Capital spend). As illustrated in Figure 1, our two major systems, customer billing (legacy **CIS OV**) and Enterprise Resource Planning (**ERP**), will require major investment in the 2015-2020 RCP. CIS OV and related applications are approaching their end of life with all components going out of support by 2021. SA Power Networks and our Victorian counterparts CitiPower

[1] Based on recent benchmarking studies conducted by KPMG and Huegin Consulting. Further details on benchmarking are provided in Section 4.4.
[2] The period from 1 July 2015 until 30 June 2020.
[3] Unless otherwise stated, all costs in this document are expressed in real FY2013/14 dollars.
[4] All forecast costs presented in this document are based on the current numbers of users, depots, vehicles, etc. The costs exclude escalators such as CPI, increased number of depots, vehicles, users, etc.
[5] Excluding the 'Non-IT' costs. In the context of this document, the Non-IT costs represent business tasks associated with the development and implementation of non-recurrent IT capital projects (e.g. change management, business analysis). These costs have been included in the IT forecast model for the purpose of estimating the total cost of ownership, but have been allocated to other business units.

and PowerCor are the **last customers in the world** who are still using this system; not replacing it in the 2015-2020 RCP will lead to a risk exposure with significant financial consequences. In addition, our ERP, which was implemented 20 years ago, needs a major refresh in order to meet the current and future business requirements.

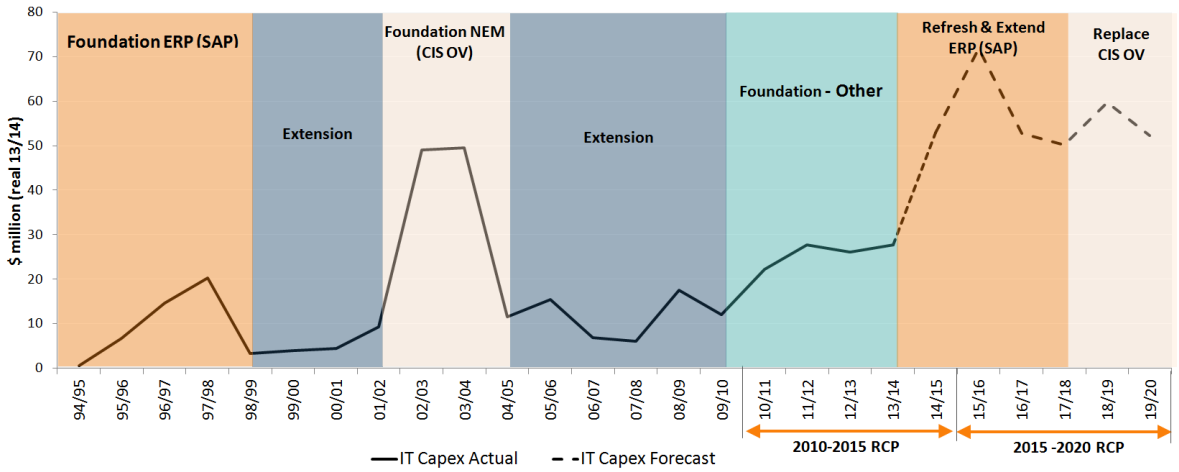


Figure 1: Key IT system investment drivers and lifecycle stages

2. **Enable regulatory and legal compliance** (approximately 15% the total Capital spend)**.** Investment in the IT systems and processes is required to enable the organisational compliance with the new regulatory and legal obligations including the Regulatory Information Notice (**RIN**) reporting, Australian Privacy Principles and Harmonisation legislation.
3. **Move towards cost-reflective pricing tariffs and respond to changing customer preferences** (approximately 10% the total Capital spend) following the Australian Energy Market Commission's (**AEMC**) Power of Choice Review[6] and in response to SA Power Networks' customer preferences expressed during the Customer Engagement Program (**CEP**)[7].
4. **Drive efficiencies across the business** (approximately 8% the total Capital spend). An increased volume of asset maintenance and replacement work due to ageing assets, more frequent occurrence of severe weather events and increased bushfire management effort will drive up costs in other areas of the business. These cost increases can be minimised by efficient use of modern technologies to enable workforce mobility, improve asset management practices and optimise planning, scheduling and execution of work.
5. **Maintain current levels of service and manage risks** associated with the increased complexity and business criticality of the existing IT systems and infrastructure coupled with the increased security threat levels (the remaining 40% of the total Capital spend).

The summary of the forecast is provided in Table 1.

Table 1: Summary of Capital and Operating expenditure forecast, real $ (FY 13/14)[8]

Forecast cost, $'000,000	Business Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Total 2015-20
Capital	**IT**	71.85	52.83	50.24	59.72	52.29	**286.92**
	Non-IT	8.36	14.33	8.61	7.50	4.23	**43.02**
Operating	**IT**	31.01	36.78	39.04	39.90	41.16	**187.89**

[6] Australian Energy Market Commission, FINAL REPORT, *Power of choice review - giving consumers options in the way they use electricity*, 30 November 2012.
[7] www.talkingpower.com.au
[8] The costs exclude escalators such as CPI, increased number of depots, vehicles, users, etc.

Benefits from the IT investment

This investment in the IT systems, processes and capabilities will:

- deliver a range of new and enhanced services to SA Power Networks' customers that will help them better manage and control their electricity costs, provide additional communication channels (e.g. for outage reporting) and deliver a range of other services and information that they value;
- ensure SA Power Networks avoids significant risks associated with the end of life CIS OV and related applications most of which are going to be out of support by 2021;
- provide systems, processes and tools to support the introduction of cost-reflective tariffs and the roll-out of advanced meters to enable customers to better control their energy use and manage peak demand;
- enable SA Power Networks to meet its regulatory and customer obligations in a prudent and efficient way by delivering efficiencies in the core areas of the business and avoiding the additional costs associated with manual processes;
- reduce risks associated with increased vulnerability of national critical infrastructure to cyber attacks;
- minimise threats to security and privacy of personal information that SA Power Networks is required to keep in relation to our customers, contractors and employees;
- empower our people, customers and partners to capture, view and share accurate information when they need it, wherever they may be;
- enable our customers and business to derive maximum value from our increased information collection for improved decision making and reporting;
- provide a foundation to rationalise a number of systems into ERP (**SAP**) to reduce our IT environment complexity and support the adoption of shared business processes, data sets and systems across the organisation;
- maximise the value from our SAP investment to enable us to cost effectively respond to the market and regulatory changes;
- enable us to maintain reliability and quality of IT services, in line with our agreed service level targets and future business, customer and regulatory requirements;
- improve disaster recovery as part of the corporate business continuity initiatives to ensure all business-critical systems can be recovered in an event of a disaster within the timeframes required by our stakeholders; and
- enable us to control and, where possible, reduce technology costs in the long term through operational improvements, consolidation of IT applications and improved governance.

Tangible benefits expected from the IT investment during the 2015-2020 RCP are estimated at $60.1m comprising $24.5m of cost reduction and $35.6m of cost avoidance benefits (Figure 2).

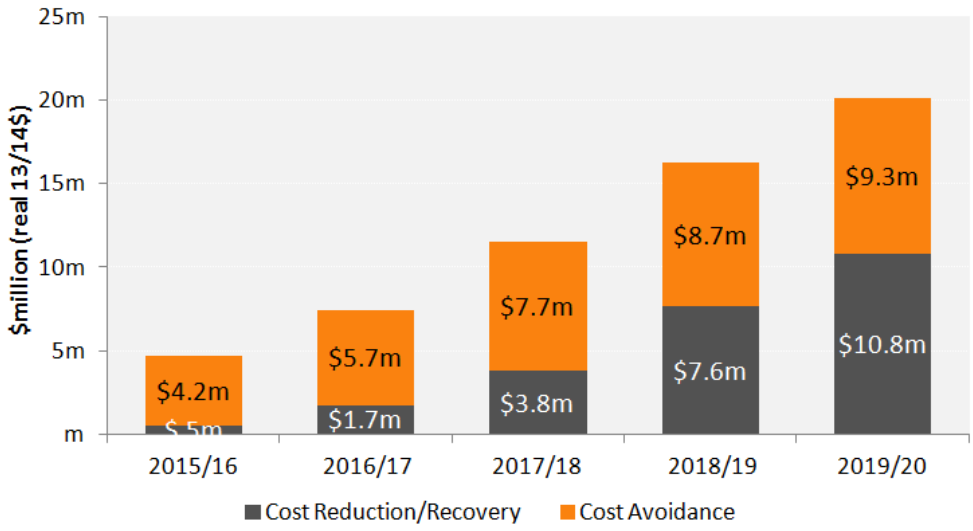


Figure 2: Forecast benefits per annum for the 2015-2020 RCP

Figure 2 shows that the value of the benefits is increasing as the underlying capability is being delivered. This increase is expected to continue into the 2020-2025 RCP.

Comprehensive process and governance

This Plan has been developed under a comprehensive governance process. Our robust bottom-up approach to the expenditure forecast development was supplemented by the top-down strategic analysis to ensure the IT program of work is fully aligned with the business strategy and provides the right solutions and services to our business and customers at the right cost. A business-led rigorous prioritisation has been undertaken to ensure only the necessary minimum of the initially proposed program is included in this Plan. The prioritised list of investments has been approved by the SA Power Networks Executive Management Group (**EMG**). All investment initiatives set out in this Plan are supported by detailed business cases with defined benefits and clear alignment to the business strategy and the National Electricity Rules (**NER**). Where the investment is technology based, it is supported by defined technology strategies and roadmaps designed to position SA Power Networks as a modern efficient organisation leveraging real value from technology.

Our strong track record

Over the 2010-2015 RCP, the IT function has met the business targets and customer obligations. Recent benchmarking studies conducted by Huegin Consulting and KPMG have consistently identified us as one of the lowest cost IT operators within the Australian Utilities industry[9].

We have used a variety of methods to assess the efficiency of our current spend and validate the forecast costs. The benchmarking study conducted by KPMG across the Utilities sector in Australia and New Zealand highlighted the fact that our total spend on IT relative to the organisational revenue was **one of the lowest** among our peers during the 2010-15 RCP whilst some of our key operating expenditure metrics were **the lowest**, as illustrated in the graph below.

Figure 3: Annual non-network ICT Operating Expenditure per DNSP customer. **Source:** KPMG, *2013 Utilities ICT benchmarking – SA Power Networks,* 7/03/2014

Whilst our low Operating spend reflects the efficiencies that we have been continually bringing into our processes, the low overall spend indicates that we are at a different phase in the investment cycle compared to our peers. Our lower than average investment in IT during the 2010-15 RCP was due to the jurisdictional differences between the states such as slower introduction of smart meters in South Australia. We are now entering the growth stage, driven by the need to meet new business, legislative and regulatory requirements. This Plan puts forward a prudent approach that will enable us to **remain at the lower end** of the Operational spend when compared with the current level of spend of other similar organisations whilst making sure our systems and processes are fit to meet future challenges.

[9] Further details on benchmarking are provided in Section 4.4 of this document.

An integrated approach to business improvement

One of the key lessons learned from the implementation of our 2010-15 RCP program of work was that greater benefits could be achieved by identifying and implementing systems to support end-to-end business processes. In 2014, SA Power Networks undertook the development of the organisation-wide Enterprise Blueprint (Figure 4) in order to capture the existing business-wide processes and define how the future processes, their users and the relevant informational requirements are to be supported by the core business applications to maximise business efficiencies. All initiatives defined in this Plan are aligned with the Enterprise Blueprint and support end-to-end business processes designed to benefit our customers, community and employees.

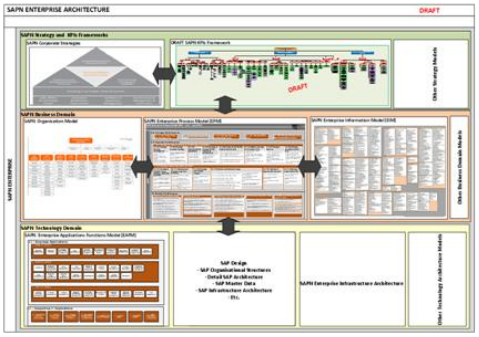


Figure 4: SA Power Networks Enterprise Blueprint. Note: A larger version of this diagram is provided in Appendix C

IT Capital expenditure

This Plan sets out a prioritised roadmap of the IT investments, grouped into themes that are aligned to SA Power Networks' core strategic focus areas of **Energised and Responsive Customer Service**, **Excellence in Asset Management and the Delivery of Services**, **Investing in our People, Assets and Systems** and **Business Foundations**. In order to deliver the outcomes and benefits required within these focus areas, a significant investment in the **Enterprise Enabling Technologies**, such as information management, reporting and analytics is required. Additionally, investment in the 'business as usual' **Applications and Infrastructure Refresh** is needed to ensure currency and security of existing systems. The change management effort required for embedding the new systems and capabilities in the organisational processes has also been considered. The breakdown of the IT Capital expenditure into these investment themes is provided in Figure 5.

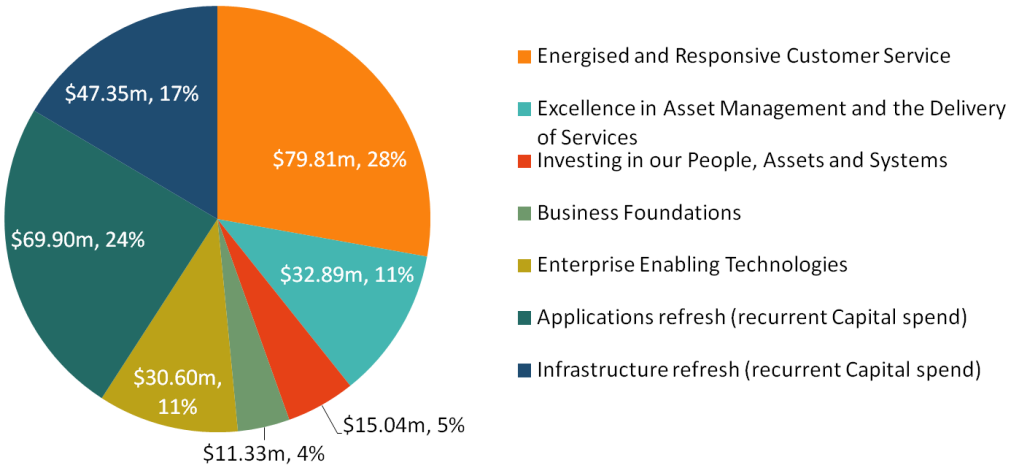


Figure 5: The IT Capital expenditure breakdown (excluding non-IT costs) into the strategic focus areas over the 2015-2020 RCP. All costs are in real $ (FY13/14).

We have undertaken a detailed analysis of the interdependencies between the initiatives to identify the enabling capabilities that need to be implemented in order to deliver the required outcomes. We have also aligned the timing of related initiatives so that the efficiencies of implementing them together could be realised. The roadmap of the IT Capital initiatives is illustrated below.

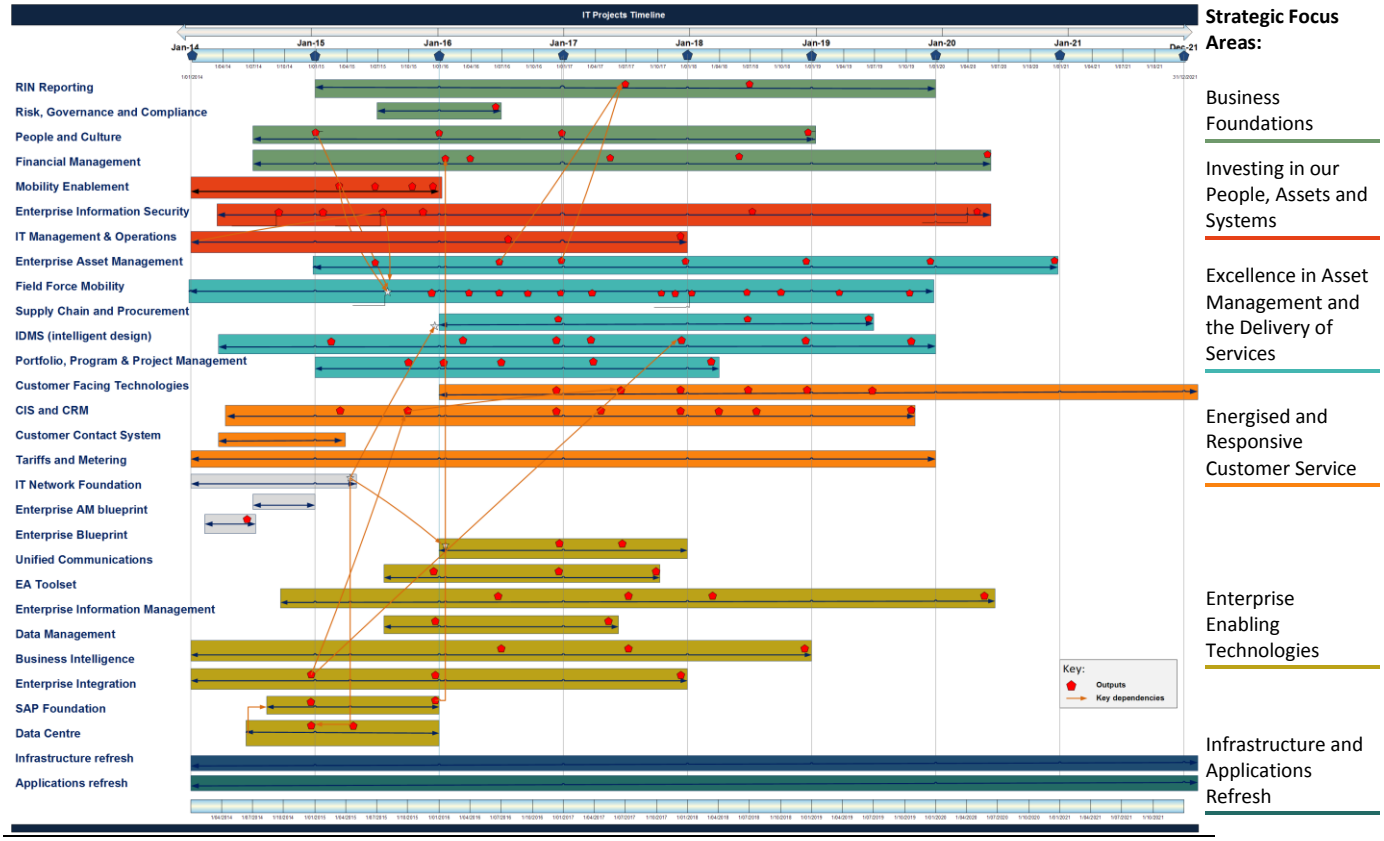


Figure 6: The roadmap of IT Capital initiatives, grouped into the strategic focus areas. The detailed version of the roadmap is provided in Appendix F.

IT Operating expenditure

The IT Operating expenditure (**Opex**) uplift from the 2013/14 baseline has been forecasted by estimating the net operational impact of the new capabilities proposed in the IT Capital program of work after taking into account the efficiencies in our baseline operating costs. These efficiencies are expected both from the new IT Operating Model and from the proposed initiatives, through decommissioning of applications, rationalisation of support arrangements, and process improvements. All associated operational cost savings have been factored into the IT Operating expenditure forecast and are offset by the growth in maintenance and support costs resulting from the new capabilities delivered through the proposed Capital investment.

The overall increase in the IT Operating costs compared to the 2013/14 Opex baseline will be $65.2m over the period. This increase in the IT operating costs will be offset by the operational cost savings in other areas of the business to the total of $24.5m, comprising of $20.5m to be realised generally across SA Power Networks and $4.0m specifically in Field Services and Networks Management. Additionally, the operational cost avoidance of $35.6m[10] during the 2015-2020 RCP has been estimated based on the analysis of individual business cases. We have investigated the alternative service delivery models and solution architectures such as Cloud, Software as a Service and Infrastructure as a Service, and utilised these approaches where improved operational efficiencies could be achieved at an acceptable risk level.

Benchmarking analysis undertaken by KPMG indicates that whilst our forecast Operating expenditure will increase in the next RCP, it is still likely to **remain at the lower end** of the Operational spend when compared to the other similar organisations (Figure 7).

[10] High-level estimate only, based on the analysis of benefits presented in individual business cases.

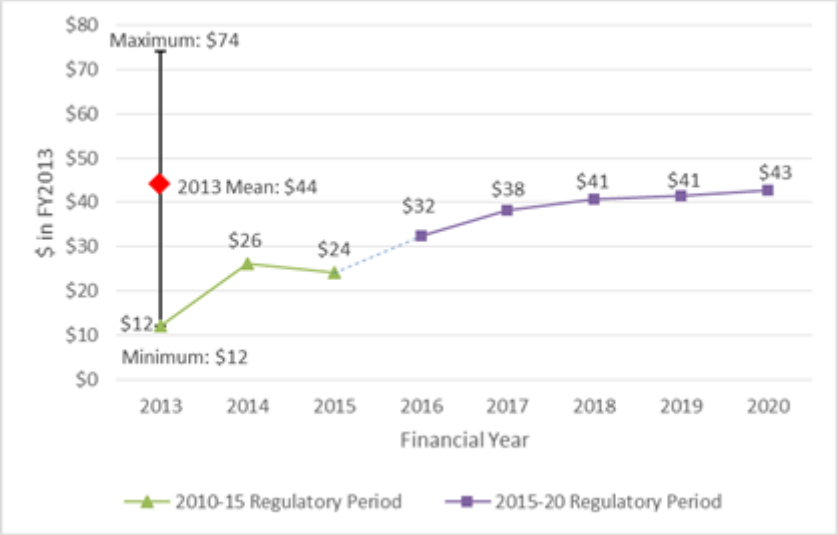


Figure 7: Forecast SA Power Networks IT Opex per DNSP Customer compared with the 2013 industry mean. **Source:** KPMG, *Independent Prudence and Efficiency Review of the 2015-20 Regulatory Technology Submission*, October 2014

Deliverability of this Plan

Underpinning this expenditure, we have developed the *IT Sourcing and Resourcing Plan* that will enable us to deliver the proposed program of work with the optimal mix of internal resources, external contractors and vendor services, in line with industry benchmarks. The IT Transformation program implemented in 2013-2014 established a new IT Operating Model to improve efficiency and provide the capability to deliver the enhanced program of work. The IT Sourcing and Resourcing Plan proposes to deliver approximately 50% of work via the outsourced services, while slightly growing the in-sourced resource pool in line with the overall organisational growth and maintaining the 80/20 mix of internal employees and external contractors, in line with the new IT Operating Model.

Conclusion

In summary, this IT Investment Plan sets out a comprehensive program of investments that underpins the delivery of business objectives within SA Power Networks' core focus areas. This program is driven by our customer and regulatory obligations and our strong desire to maximise opportunities presented by technology while controlling and where possible reducing technology costs. We are confident in our ability to implement this program efficiently and deliver tangible benefits to the business and to the consumers of SA Power Networks' services.

2. Introduction

SA Power Networks has been delivering efficient, reliable and safe electricity network performance to South Australians for almost 70 years. The Information Technology (**IT**) function of SA Power Networks supports business operations and provides a variety of services to our customers, retailers, contractors and SA Power Networks' employees. These services range from general desktop application support to the development and maintenance of specialised applications that underpin core business operations.

Over the past decade, information technology has become increasingly important in enabling and supporting the business. The IT function is now a fundamental part of the business and the organisation will expect more IT enablement and support in the future as we deliver on our customer and regulatory obligations and move towards our Future Operating Model [11]. The analysis of strategic issues faced by SA Power Networks[12] indicates that the most significant and transformative change in the distribution sector since the establishment of the National Electricity Market (**NEM**) will occur over the next five to ten years. In conjunction with the IT Strategy 2014-2020, this Plan outlines the approach to enabling and supporting the organisation through this period of major industry, regulatory and market change whilst providing a sustainable long-term technology platform for the business.

As a monopoly distribution network service provider, SA Power Networks is subject to comprehensive State and Federal regulation. Regulated electricity network businesses are required to submit a Regulatory Proposal to the Australian Energy Regulator (**AER**) summarising their revenue requirements for the 5-year regulatory control period. The SA Power Networks Regulatory Proposal 2015-2020 sets out the investment priorities in the following key service areas:

- Keeping the power on for South Australians
- Responding to severe weather events
- Safety for the community
- Growing the network in line with South Australia's needs
- Ensuring power supply meets voltage and quality standards
- Serving customers now and in the future
- Fitting in with our streets and communities
- Capabilities to meet our challenges

This IT Investment Plan 2015-2020 (the **Plan**) supports the SA Power Networks Regulatory Proposal 2015-2020 and contributes to the achievement of the business objectives described in the *SA Power Networks Future Operating Model 2013-2028*, *SA Power Networks Strategic Plan 2014-2018*[13], *Information Technology Strategy 2014-2020*[14] and related organisational strategies.

In the following sections, we present the IT Investment Plan after demonstrating the robust process which we have followed in the course of its development. The document is organised as follows:

[11] SA Power Networks, *SA Power Networks Future Operating Model 2013-2028*, January 2014.
[12] For further details on the strategic issues analysis, refer to SA Power Networks Strategic Plan 2014-2018 and SA Power Networks Future Operating Model 2013-2028.
[13] SA Power Networks, *SA Power Networks Strategic Plan 2014–2018*, November 2013.
[14] SA Power Networks, *Information Technology Strategy 2014-2020*, August 2014.

Section	Title	Context
3	Comprehensive process and governance	Describes our approach to the development of the Plan, including the key inputs, the main components of the Plan and the governance processes.
4	Our track record	Provides details on historic and current performance of the IT function.
5	IT Investment Plan overview	Summarises the Plan and provides alignment to the business strategy and the SA Power Networks Regulatory Proposal.
6	IT Investment Plan key inputs	Describes the key inputs into this Plan.
7	IT Capital program of work	Provides details of the Capital investment required to execute this Plan.
8	IT Operating expenditure	Provides details of the Operational expenditure.
9	IT Investment Plan implementation	Describes the high-level implementation plan.

3. Comprehensive process and governance

This IT Investment Plan has been developed using a robust and traceable approach and a comprehensive governance process.

3.1 IT investment planning framework

The key objective of the investment planning process was to support the current and anticipated future requirements of SA Power Networks' customers, the AER and our internal business stakeholders. To establish the link between these requirements and the IT strategic priorities, we followed the industry standard framework of COBIT 5[15] which defines key activities of the IT strategic planning process, the associated inputs and the key outputs. Figure 8 shows the framework that we have tailored to facilitate the development of the IT Investment Plan.

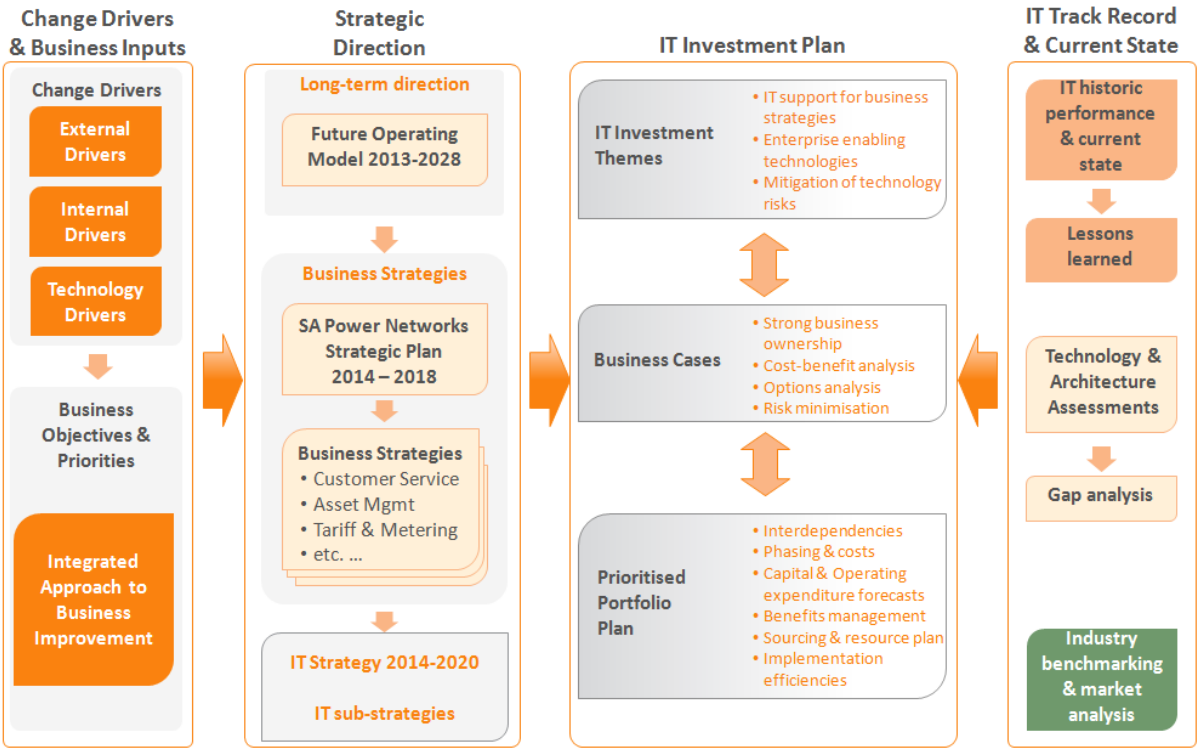


Figure 8: IT investment planning framework

3.2 Key inputs

The following major inputs were utilised during the development of the IT Investment Plan:

- **Change drivers & business inputs:** A number of external, internal and technology drivers influence the strategic direction of SA Power Networks. These drivers include environmental policies, regulatory changes, customer expectations and new technologies, which together shape the needs of SA Power Networks' stakeholders. The organisational strategic planning process transforms these needs into specific business objectives and priorities by considering the requirements of all stakeholders and assessing the benefits, risk and resource implications of business decisions. The change drivers and the relevant business objectives and priorities were discussed and validated with our key stakeholders during the IT investment planning workshops.

[15] COBIT 5 (Control Objectives for Information and related Technology v.5) is the governance framework developed by the IT Governance Institute (www.itgi.gor) and widely accepted as a de-facto standard in the IT industry.

- **Strategic direction:** The change drivers and business inputs are reflected in a number of documents that together define SA Power Networks' strategic direction. The key business strategies that were considered during the development of this Plan were the Future Operating Model 2013-2028, the SA Power Networks Strategic Plan 2014-2018 and the related business strategies including Customer Service, Tariffs and Metering, Asset Management, Enterprise Mobility and HR Strategy. The *IT Strategy 2014-2020* and the IT sub-strategies supporting the business strategies were also taken into consideration.
- **Integrated approach to business improvement:** During the 2010-2015 RCP, SA Power Networks recognised the need to move away from the incremental change to business processes to a more integrated 'end-to-end' approach to business operations. To this end, SA Power Networks undertook the organisation-wide Enterprise Blueprint[16] in order to capture the existing business-wide processes and define how the future processes are to be supported by the core business applications in order to maximise business efficiencies, remove silos and data duplication, and improve information quality and integrity. The outcomes of the Enterprise Blueprint were used as the key inputs into this Plan.
- **Our track record and current state analysis:** We have analysed our past performance and current state from several different perspectives:
    - **Historic performance:** Our historic performance was analysed from the portfolio planning, financial and benefits realisation points of view; the lessons learned from our historic performance were utilised in the development of future portfolio plans and expenditure forecasts.
    - **Architecture states:** Future architectural states were established and documented based on the Enterprise Blueprint. These architecture states were compared with the current architecture and gaps were identified. The initiatives to close these gaps were included in the IT investment roadmap.
    - **Industry benchmarking and market analysis:** To validate the strategic direction and planned program of work, we engaged two independent organisations, KPMG and Gartner, to benchmark our past performance and current priorities against similar organisations in Australia and worldwide.

3.3 Key components of the IT Investment Plan

The IT Investment Plan includes the following key components:

- **IT investment themes:** We identified the key investment themes and initiatives for IT by analysing the requirements collected from all areas of the business, and considering the change drivers and current state gaps. These IT investment themes were validated by the business stakeholders and prioritised at the Executive Management level.
- **Business cases:** A number of business cases were developed to justify the proposed initiatives for each of the IT investment themes. The business case development process further validated the proposed initiatives with the business sponsors to ensure alignment with the business requirements and that the most prudent and efficient options were selected.
- **Prioritised portfolio plans:** Based on the preferred option for each business case, we determined the dependencies, overlaps and synergies between the initiatives as well as resource impacts. On this basis, we developed a prioritised roadmap of the initiatives, supported by the Capital and Operating expenditure forecasts and the Sourcing and Resourcing Plan.

3.4 IT Investment Plan governance

The IT Investment Plan was developed from the ground up by our internal team supplemented by external specialist resources. Our governance approach encompassed:

- business-wide consultations to ensure alignment to the business strategy;
- business-owned strategies and business cases endorsed at the Executive Management level;

[16] SA Power Networks, *SAPN Enterprise Architecture: Final Enterprise Blueprint,* 12/06/2014.

- alignment to the SA Power Networks capital budgeting framework and procedures;
- standardised IT Forecasting methodology aligned with the SA Power Networks Expenditure Forecasting Methodology provided to the AER; and
- independent assurance throughout the process provided by KPMG.

The key stages and milestones in the development of the IT Investment Plan are shown in Appendix A.

3.5 IT expenditure forecasting methodology and approach

The IT expenditure forecast has been developed following the IT Expenditure Forecasting Methodology and Approach[17] and the SA Power Networks Forecasting Methodology[18].

The IT forecasts for the 2015-20 RCP have been developed by the subject matter experts and approved by the Chief Information Officer (**CIO**). Forecasts are based on business requirements identified during the capital planning process in accordance with SA Power Networks' capital expenditure policies and procedures.[19,20]

The IT expenditure was grouped into **client device expenditure**, **recurrent expenditure** and **non-recurrent expenditure** as required by the Regulatory Information Notice under Division 4 of Part 3 of the National Electricity Law. The following definitions were used:

- **Client devices expenditure** – includes printers, plotters, network devices, end user devices, toughbooks, meter reading devices and peripheral IT equipment (such as hard drives, keyboards, mice, video cards, cables, etc.).
- **Recurrent expenditure** – the 'base' level periodic expenditure necessary to keep the existing IT systems and infrastructure operational during the 2015-20 RCP assuming the current level of IT services and a prudent cycle of software and infrastructure upgrades. **We have assumed that recurrent projects are those that occur two or more times during the 5-year RCP (e.g. with the period of less than five years).**
- **Non-recurrent expenditure** – the expenditure needed to respond to the business requirements (business change projects) identified for the 2015-20 RCP, which are in turn influenced by internal, external and technology drivers including risk mitigation, regulatory changes, customer preferences and emerging technology trends. **It should be noted that our definition of non-recurrent expenditure includes periodic expenditure with periods greater than, or equal to, five years.** For example, the end of life replacements or major upgrades of our core systems are considered non-recurrent in our forecasting methodology although these are periodic projects that must be undertaken from time to time to maintain currency and security of our environment.

For those requirements with alignment to business strategies and the NER objectives, business cases have been developed to ensure the investment is prudent and that the most efficient option is selected when taking into account the overall strategy of having an integrated suite of functionality. Business cases contain detailed cost estimates, cost-benefit analysis, options analysis and the justification for the preferred option based on the AER's Expenditure Forecasting Assessment Guidelines. Business cases are approved by key business stakeholders and senior management following a governance process aligned with the standard SA Power Networks' capital expenditure evaluation procedures.

Additionally, portfolio analysis has been undertaken to identify critical dependencies and enabling capabilities that have to be implemented in order to deliver the most efficient outcomes for the

[17] SA Power Networks, *IT Expenditure forecasting methodology and approach*, August 2013.
[18] SA Power Networks, *Expenditure Forecasting Methodology*, November 2013.
[19] SA Power Networks, *Capital Budgeting Procedures,* September 2013.
[20] SA Power Networks, *Capital Monitoring and Post Implementation Review,* September 2013.

organisation. This resulted in efficiency gains due to removed duplication of effort and reduced management overheads.

Due to the amount of business change being undertaken by the portfolio of work, business costs covering activities such as change management and business process changes associated with implementing IT projects, have been costed separately. These business change (**non-IT**) costs are to cover extra labour resources required within SA Power Networks' business units to ensure the IT capability changes are managed and embedded effectively and efficiently.

All detailed cost estimates were performed utilising standard estimation templates and methods. An overarching IT forecasting model was utilised to produce final cost estimates with the following main sources of information as inputs:

- Project information templates were completed for all capital projects, providing detailed breakdown of human and material resources by year and capital/operational category. Human resources were specified in terms of individual roles and the estimated value of their effort in days per annum;
- System information templates were completed for all major systems. The system information templates captured the estimated future labour and services costs required for operational system maintenance;
- Service information templates were completed for the key services provided by IT Operations and captured the estimated future costs; and
- Licence costs were based on the 2013-14 system licence costs included in the IT budget.

Data was then consolidated from the multiple sources into a single forecast.

The IT forecast modelling process is illustrated in Figure 9.

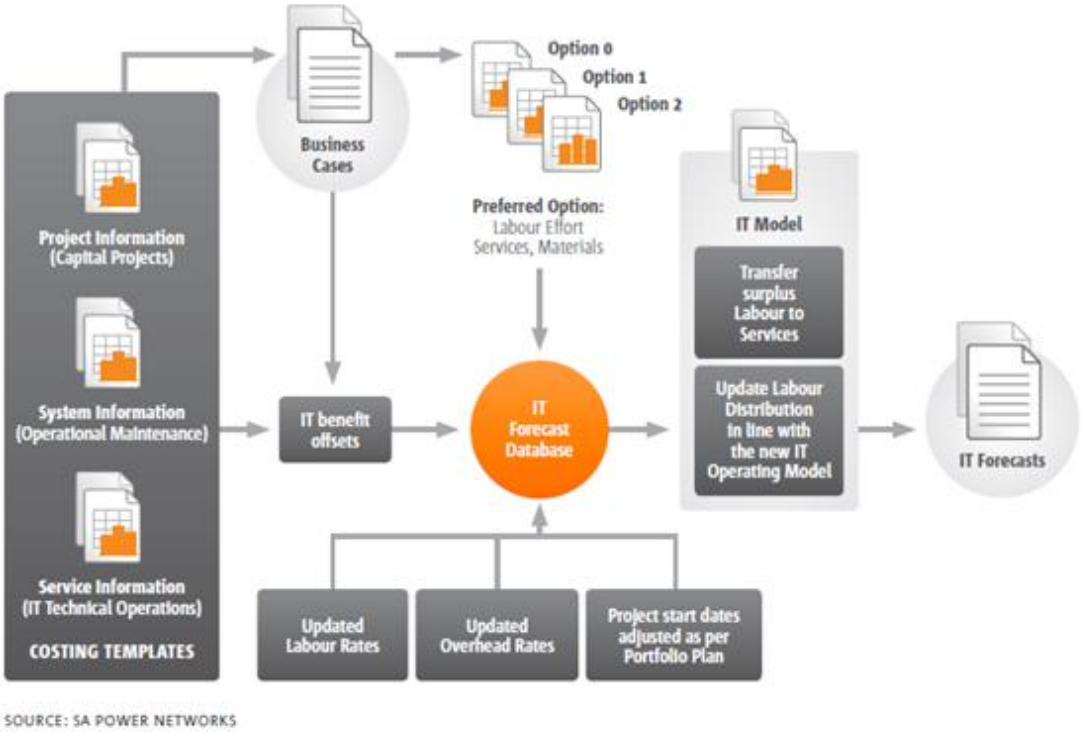


Figure 9: IT forecast modelling process

4. Our track record

4.1 Historic performance

During the period from 2001 to 2010, the focus of IT investment was on establishing the major business systems that underpin SA Power Networks' business today. The peak in the IT investment in the early 2000s (Figure 10) corresponds to our entry into the National Electricity Markets (**NEM**) which necessitated the implementation of the Customer Billing and Information System 'Open Vision' (**CIS OV**) and the Full Retail Contestability applications for customer support and compliance with NEM regulations. The other two major systems implemented during that period were the Outage Management System (**OMS**) and the Geographic Information Systems (**GIS**) that support critical network control and field services business functions. Continuing investment in the SAP Enterprise Resource Planning system (implemented in the late 1990s) was also required to meet growing demands for IT support of back office processes.

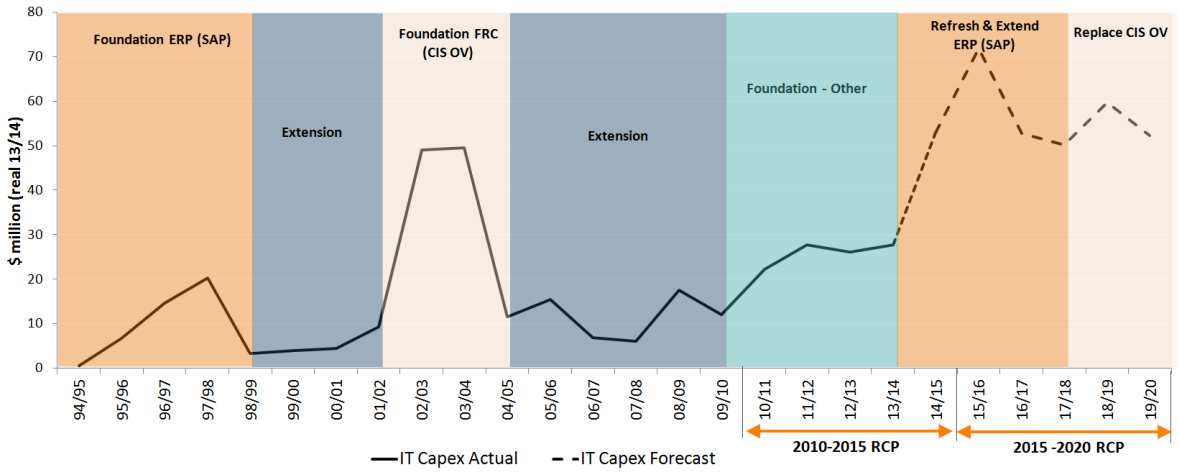


Figure 10: Historic IT Capital Expenditure and 2010-15 Regulatory Allowance, real $ (FY13/14). The peak in the early 2000s corresponds to the implementation of the Customer Information System and related NEM applications

The IT investment plans for the 2010-2015 RCP[21] focused on technology refresh and incremental enhancements to the capabilities established in the previous decade. In practice, faster than expected changes in the business environment triggered key organisational changes and imposed greater than expected requirements for technical capabilities. Additional investments were required in the Customer-facing, Regulatory, Works Management and Asset Management systems due to changed customer expectations, regulatory obligations and increased business demand for IT services. Greater than expected investment was also required to reduce risk and improve Disaster Recovery capabilities due to the increased criticality of IT systems to the business.

These changes to the plan were managed via the appropriate governance process in accordance with the SA Power Networks Capital Expenditure policies and procedures. Together with our Victorian counterparts CitiPower and Powercor, we succeeded in extending the life of CIS OV through vendor negotiations and a series of technical upgrades. This enabled us to postpone the replacement of CIS OV originally planned for 2014/15 to 2017/18 and redirect the associated funding to new business-critical areas. These additional investments supported the delivery of the following business outcomes:

- **Regulatory compliance:**
  - Compliance with the National Energy Customer Framework (**NECF**)
  - Improved collection, management and reporting of vegetation management information

[21] The period from 1 July 2010 until 30 June 2015.

- **Meeting our customer service obligations and customer expectations:**
  - Provision of more timely service and outage-related information to the customers through the implementation of new customer-facing systems (e.g. Power@MyPlace on the SA Power Networks website; Street Lights Out notifications system)
  - Provision of more timely and up-to-date outage information to the call centre operators through the initial one-way integration between the outage system and the Interactive Voice Response (**IVR**) system
  - Improving our customers' call centre experience by upgrading the IVR service to provide more information about the customer to the call centre operator and give more automated options allowing the customers to complete the call quicker
- **Improved efficiency of field work:**
  - Enhancing our Field Force Mobility solution to cover more work types and work groups and provide the ability to enter timesheet information, and embedding the solution into operations
  - Providing field crews with a mobile solution for identifying and scheduling work and embedding it into operations
- **Reduced business risks:**
  - Improved Business Continuity and Disaster Recovery capabilities

The rapid growth in business demand for IT systems during the 2010-15 RCP resulted in a number of bespoke or standalone systems being developed to respond to immediate business needs. The increased complexity of the IT environment drove a significant increase in maintenance and support requirements. The funding shortages due to the unforseen growth of business-critical applications have resulted in sub-optimal maintenance and upgrade regime as illustrated in Figure 11.

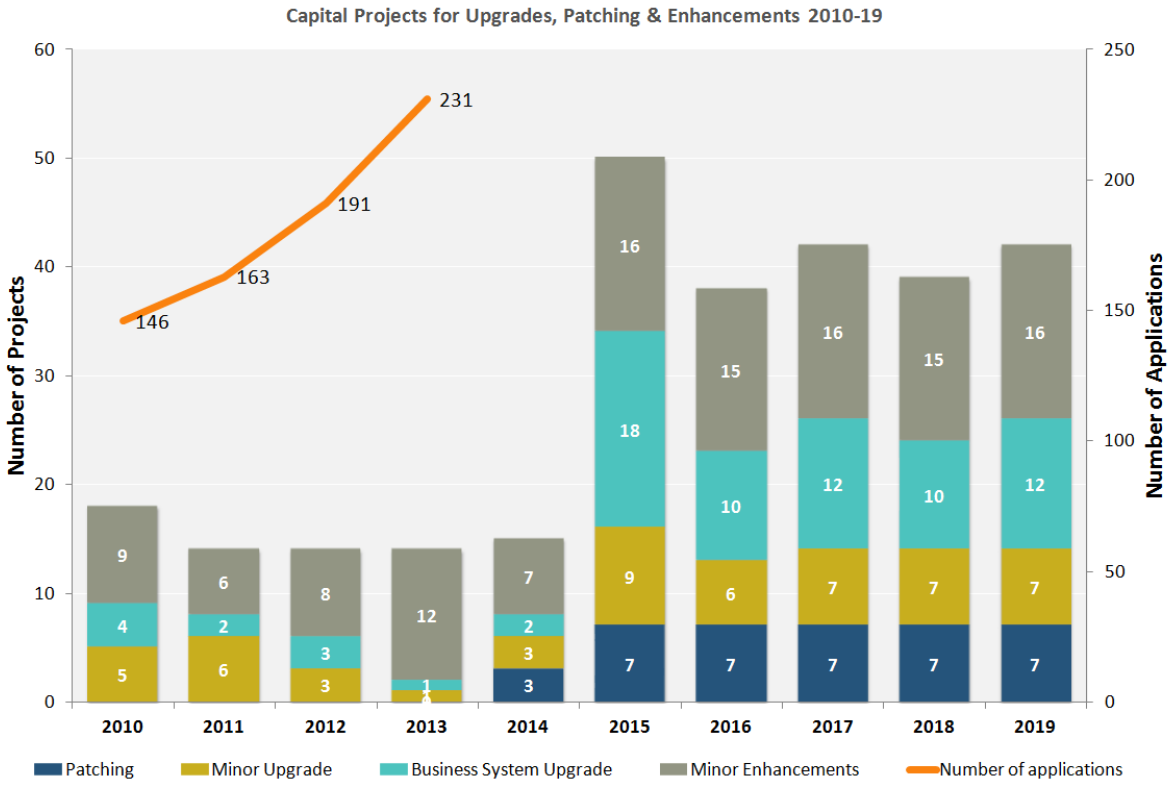


Figure 11: Increased requirements for the IT Applications refresh due to the increased number of business-critical applications. The 2015-2019 requirements reflect prudent cycle of upgrades necessary to ensure currency and security of our IT environment. These requirements are further discussed in Section 5.6.

4.2 Lessons learned

As part of the analysis of our historic performance, we collected the lessons learned through a series of workshops and interviews that involved the IT Management team and business representatives, capturing successes and areas for improvement.

The key opportunities for improvement include:

- Greater responsiveness to the changing customer expectations
- Greater business focus, alignment and agility are required from the IT function
- Additional Change Management effort is required to fully embed business and technology changes
- Greater benefit can be achieved by identifying and implementing systems to support end-to-end business processes and seamless access to information ('single source of truth')

These lessons learned were considered during the development of this Investment Plan to ensure past learnings are incorporated into the future plans. The lessons learned including the already implemented or planned business and technology responses are summarised in Appendix B.

4.3 Current state

Consolidation of our IT environment

Several strategic initiatives have commenced in the second half of the 2010-15 period seeking to address the challenges associated with the increased complexity of our IT environment by integrating our IT systems in a standardised way and where possible rationalising them into a smaller set of core applications. These initiatives will continue into the next RCP and have been included in this Investment Plan.

New IT Operating Model

The increased business demand and the reliance on technology as a core enabler of business operations has required the transformation of the IT function from a service provider to the strategic business enabler. In 2013, the recognition of the changing role of the IT function resulted in the appointment of the CIO and the commencement of the IT Transformation program to better align our organisation structure, people and processes with the changing business requirements. In 2014, the IT Transformation program established a new IT Operating Model (Figure 12) that provided the capability to deliver the enhanced program of work through improved efficiencies of our processes and by leveraging strategic partnerships with outsourced service providers. Further details on the IT Operating Model are provided in Section 9.

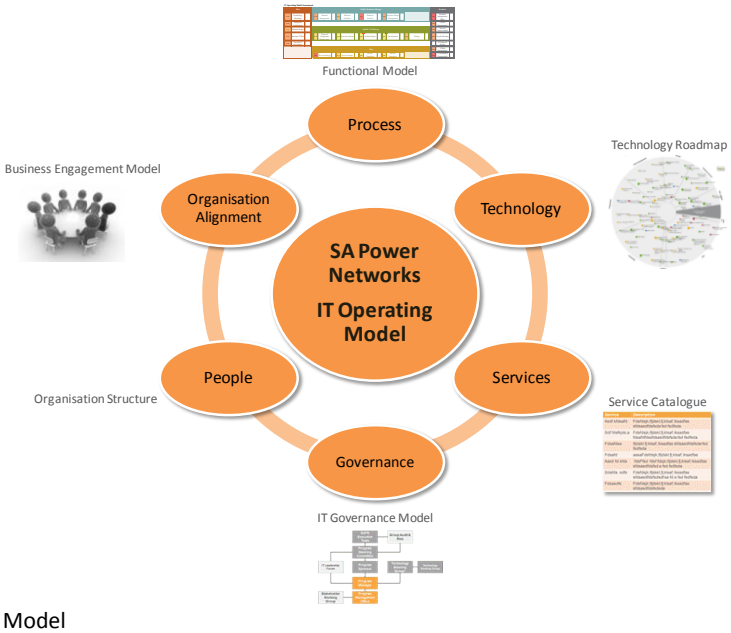


Figure 12: IT Operating Model

Key performance indicators

The IT function currently provides a valued service to the organisation. We are consistently meeting our operational Key Performance Indicators (**KPI**s) and have consistently delivered our annual Capital programs of work on budget and meeting stakeholder requirements.

4.4 Benchmarking

The benchmarking study of our current IT costs against the Utilities sector in Australia and New Zealand was conducted by KPMG[22] in 2013. The study considered the overall IT expenditure in the context of the size of the core business and utilised breakdown of IT costs across the commonly used Technology Domain categories. Benchmarking revealed that our total spend on IT relative to the organisational revenue was **one of the lowest** among our peers during the 2010-15 RCP whilst some of our key operating expenditure metrics were **the lowest** in our peer group (Figure 13).

Figure 13: Annual non-network ICT Operating Expenditure per DNSP customer. **Source:** KPMG, *2013 Utilities ICT benchmarking - SA Power Networks*, 7/03/2014

KPMG findings are consistent with the recent study by Huegin Consulting (**Huegin**) who conducted preliminary modelling, based on the publically available AER Economic Benchmarking data, to measure SA Power Networks' efficiency relative to other DNSPs in the NEM. Huegin's benchmarking analysis of the ICT expenditure shows that SA Power Networks' ICT total expenditure is consistently lower than most other DNSPs (Figure 14). This indicates SA Power Networks' relative efficiency and also a level of minimal investment in ITC compared to industry peers.

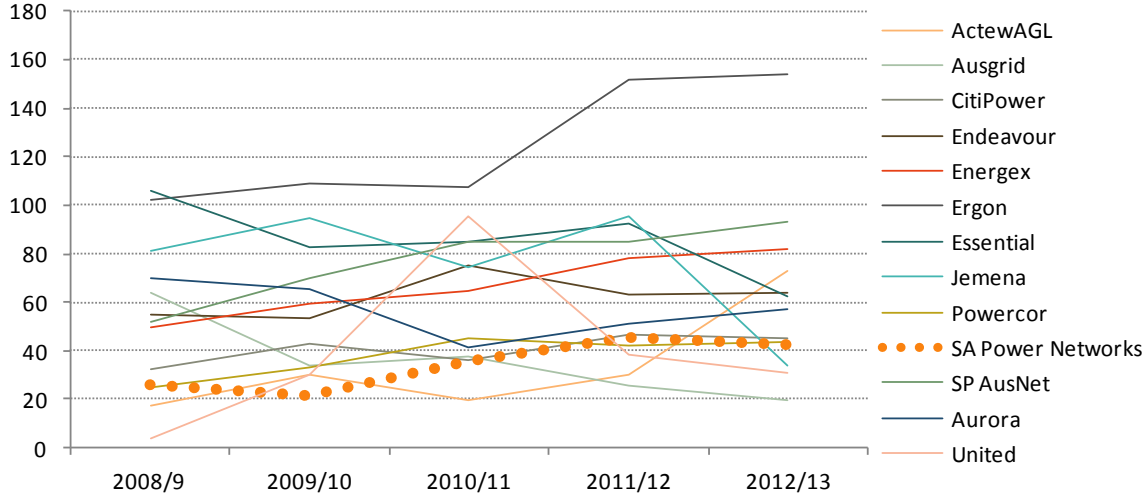


Figure 14: IT Total expenditure per customer ($nominal). **Source:** 2014 Huegin Consulting benchmarking study

[22] KPMG, *2013 Utilities ICT Benchmarking - SA Power Networks*, 7/03/2014.

Whilst our low Operating spend reflects the efficiencies that we have been continually bringing into our processes, the low overall spend indicates that we are at a different phase in the investment cycle compared to our peers. Our lower than average investment in IT during the 2010-15 RCP was due to the jurisdictional differences between the states such as slower introduction of smart meters in South Australia. In addition, as can be seen from Figure 10 in Section 4.1, the timing in our systems' lifecycle was such that our key systems did not require significant investments in the previous two RCPs.

We are now entering the growth stage, driven by the need to meet new business, legislative and regulatory requirements. Furthermore, we are now at a stage in our systems' lifecycle when our two core systems require replacement (CIS OV) and major upgrade (SAP) which has a compounding effect on the next period costs.

Whilst our forecast operating expenditure increases in the next RCP, it is likely to **remain at the lower end** of the operational spend when compared to the other similar organisations, as can be seen from Figure 15 below.

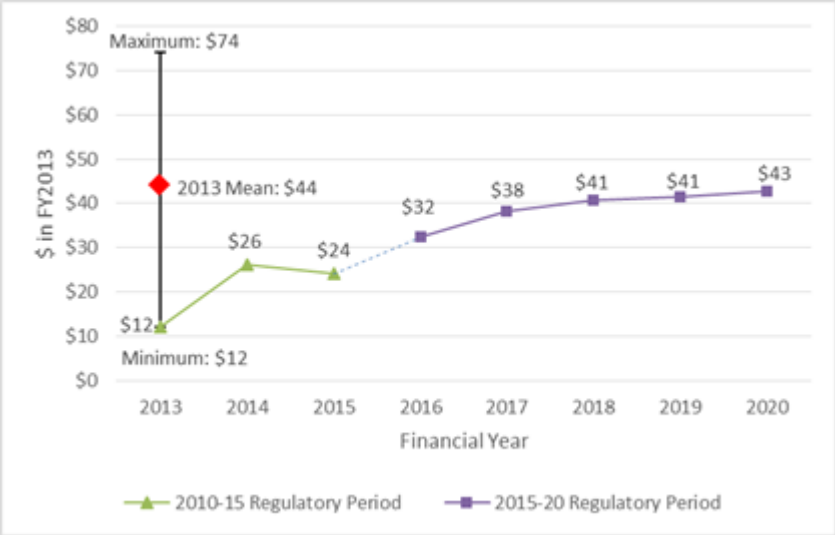


Figure 15: Forecast SA Power Networks IT Opex per DNSP Customer compared with the 2013 industry mean. Source: *Independent Prudence and Efficiency Review of the 2015-20 Regulatory Technology Submission*, KPMG, October 2014

In the next section, we present an overview of the IT Investment Plan for the 2015-2020 RCP. The key drivers that influenced the development of this Plan are further discussed in Section 6. The Capital and Operating expenditure forecasts are provided in Sections 7 and 8, and the deliverability of this Plan is discussed in Section 9.

5. IT Investment Plan overview

This Plan sets out the roadmap of Information Technology initiatives that will enable the delivery of the outcomes defined in the SA Power Networks Regulatory Proposal and contribute to the achievement of the business objectives set out in the *SA Power Networks Strategic Plan 2014-2018*[23] and related business strategies. The key themes of the IT Investment Plan in response to the core focus areas of SA Power Networks' corporate strategy are:

1. **Energised and Responsive Customer Service.** Customers expect improved service and access to information while maintaining the current levels of reliability and costs of SA Power Networks' services.

2. **Excellence in Asset Management and the Delivery of Services.** An increased volume of asset maintenance and replacement work is expected in the next decade due to ageing network infrastructure in South Australia and more frequent occurrence of severe weather events. This requires a suite of fit-for-purpose integrated applications, data and communication channels to minimise risks for the community, increase the efficiency of asset maintenance and replacement work and contain costs at an acceptable level.

3. **Investing in our People, Assets and Systems.** SA Power Networks is continually investing in enterprise capabilities required to meet our current and future challenges. The SA Power Networks Strategic Plan identifies improved Enterprise Information Security, Enterprise Mobility and IT Management & Operations as critical to mitigate the increased security risks, enable mobile workforce and improve the efficiency of the IT function.

4. **Business Foundations.** In order to achieve compliance with changed regulatory requirements, improvements are required in the Regulatory Reporting, Financial Management and a range of other business processes and related systems.

5. **Enterprise Enabling Technologies.** To achieve the outcomes required in all of the above focus areas, investment in supporting systems and infrastructure is required, in order to handle the increased volumes of data, increased complexity of information and increased flow of information through the corporate data and voice networks.

6. **Applications and Infrastructure Refresh** (business as usual). Maintenance of our core IT capabilities through orderly refreshes of infrastructure, operating systems and business applications.

To address the needs of the organisation and enable the delivery of business outcomes planned for the 2015-2020 RCP, we have developed a program of work grouped by the key themes. Figure 16 illustrates the link between the investment themes and the SA Power Networks Strategic Focus Areas. Further details on the IT investment drivers are presented in Section 6 of this document.

[23] SA Power Networks, *SA Power Networks Strategic Plan 2014-2018,* November 13.

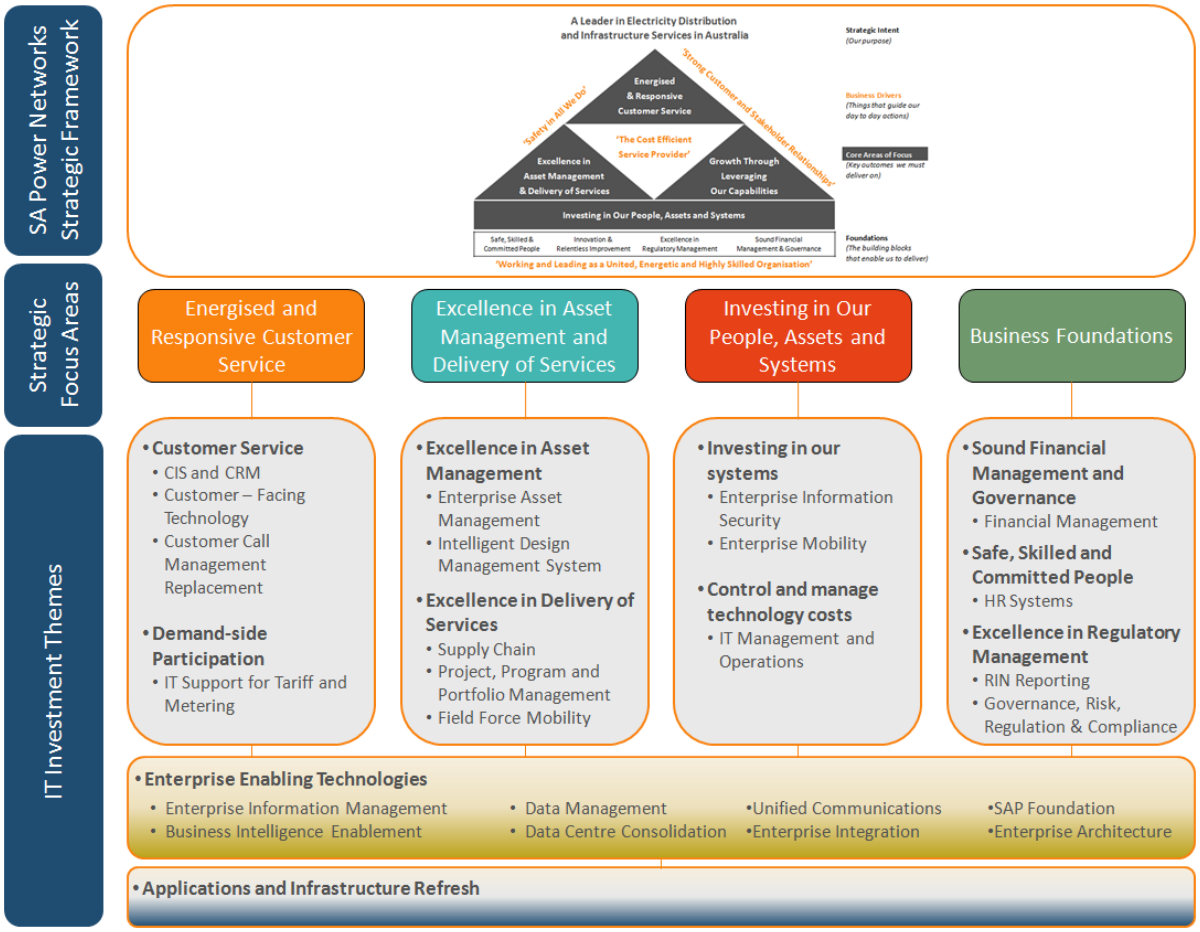


Figure 16: Link between the IT Investment Themes and the SA Power Networks Strategic Focus Areas

The IT investment themes and the supporting initiatives within each theme are outlined in Appendix D, grouped by the SA Power Networks Strategic Focus Areas. The tables in Appendix D provide alignment to the IT investment drivers, and state the total Capital investment and Operational uplift sought over the 2015-2020 RCP. The roadmap of the initiatives is provided in Appendix F. The business and IT owners of the initiatives are listed in Appendix G.

The business cases developed for each of the IT initiatives demonstrate strong alignment to the NER capital and operating expenditure objectives. The primary NER expenditure objectives that drive the IT investment are summarised below:

Primary NER objective	Capital investment, $m real FY14	Percentage
6.5.7(a) (2), 6.5.6(a) (2) – Compliance / Regulatory	62.74	22%
6.5.7(a)(3), 6.5.6(a)(3) – Maintain the Quality, Reliability and Security of Supply	224.19	78%

The IT investment themes and initiatives are described in more detail in the following sections, structured as follows:

- **Regulatory Proposal alignment** – alignment to the relevant key service areas of the SA Power Networks Regulatory Proposal 2015-2020
- **Business context** – the business initiatives proposed for the 2015-2020 RCP that require IT enablement or support
- **Enabling IT initiatives** - the IT initiatives that are required to enable or support the business initiatives
- **Benefits to customers** – the key benefits expected from the IT investment

5.1 Energised and Responsive Customer Service

Key points:

- Our legacy customer information and billing system, CIS OV, needs to be replaced in the next period. We have prudently deferred the CIS OV replacement in the 2010-2015 RCP, but deferring it any longer will expose SA Power Networks to an unacceptable level of risk. The cost of CIS OV failure to the organisation could be significant as it would affect monthly billing cash flow until the system is fixed. With most components going out of support between 2018 and 2021, the risk of system failure will materially increase during the 2015-2020 RCP as the system is approaching the end of its life.
- The existing Customer Contact Management System also needs to be replaced as it will reach the end of its life in 2017. The replacement system will deliver enhanced communication options to our customers, in line with customer preferences expressed as part of the Customer Engagement Program (**CEP**).
- The *Customer Service Strategy*[24] and *Customer Technology Plan*[25] developed as part of the CEP call for further improvement of our customer-facing systems in order to deliver information, communication and self-service options that our customers value. An integrated approach to the development of customer-facing systems is critical for our ability to meet evolving customer expectations. The implementation of the Customer Technology Plan will establish a single view of the customer data, improve the access to information and provide enhanced self-service options for our customers.
- Our systems and processes need to be upgraded to support the introduction of cost-reflective tariffs and the roll-out of advanced meters to enable customers to better control their energy use and manage peak demand.

Regulatory Proposal alignment

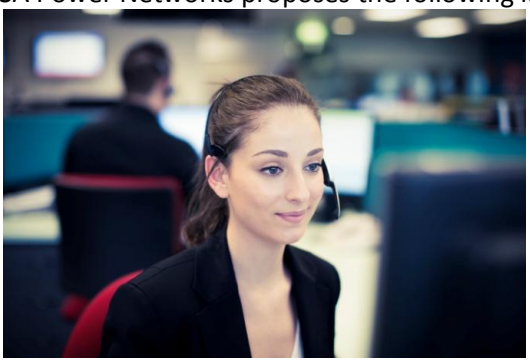
The relevant key service area described in the SA Power Networks Regulatory Proposal 2015-2020 is *Serving Customers Now and in the Future*, broken into*:*

- Adapting to changing customer expectations; and
- Promoting demand side participation.

The key business initiatives proposed for the 2015-2020 RCP are summarised below.

Business context

SA Power Networks proposes the following key customer-related initiatives for the 2015-202 RCP:



Adapting to changing customer expectations:

- deliver information, service, communications and self-service options that our customers value;
- provide accurate and timely information on service status and power restoration activities; and
- provide increasing levels of advisory information in line with customers' current and future electricity needs.

Promoting Demand Side Participation:

- facilitate the further connection of new technologies to advance the two-way network of the future;
- introduce cost reflective tariffs to promote efficient customer investment in such technologies and to address the increasing cross subsidies between customers;

[24] SA Power Networks, *Customer Services Strategy 2014-2020.*
[25] SA Power Networks, *Customer Technology Plan,* July 2014.

- install more capable meters as standard for new and replacement connections; and
- upgrade our systems and processes to manage increased volumes of customer, metering and network data.

These business initiatives have been developed following extensive customer engagement process including the development of the *Customer Services Strategy 2014-2020*[26], the TalkingPower™ Customer Engagement Program (**CEP**)[27], the SA Power Networks Directions and Priorities consultation and the development of the Tariffs and Metering Strategy. The critical role of information technology in delivering on the needs of our customers has been recognised during this process and reflected in the respective strategies, which include the *Customer Technology Plan*[28] and *Customer Data Quality Strategy*[29] that support the *Customer Service Strategy*. The key IT initiatives that are necessary to enable the delivery of the required business outcomes are outlined below.

Enabling IT initiatives

Legacy customer systems replacement (CIS OV and related applications)

The current technology solutions in place to provide customer and billing management functions are at end of life, disparate and do not provide the flexibility required to support capabilities into the future.

SA Power Networks currently utilises various systems to support its billing and customer management activities. The main application, CIS OV, provides billing capability for consumption-based charges as well as a number of other functions. It is a legacy system more than 15 years old and from a technology perspective is at end of life. Furthermore, SA Power Networks is the last customer in the world using this system. There are already major limitations when requiring enhancements or functionality changes and the vendor has indicated that support will not continue past 2015-2020 RCP.

In addition to CIS OV, there are nine other satellite legacy systems that track customer interactions and deliver reporting and analytics functionality. These systems are not sustainable into the future due to their age, proprietary nature and tight coupling with CIS OV, and must be included in the replacement program.

The risks associated with the use of these disparate legacy systems to provide critical business functionality were identified during the 2005-2010 RCP. As discussed earlier in Section 4.1 of this document, we have prudently deferred the replacement of CIS OV and related systems over the 2010-2015 RCP to extend their useful life and extract the best whole of life value from them. The risk assessment of CIS OV conducted by Ernst & Young in 2012[30] confirmed prudency of our approach at that point in time as the risks were successfully mitigated through a series of technical upgrades and enhanced vendor support contract. The current level of risk, however, is much greater than it was in 2012, as the systems are approaching the end of life with most components going out of support in 2021. Deferring the replacement past that time will expose SA Power Networks to an unacceptable level of risk. For example, the system failure would affect monthly billing cycle cash flow[31] until the system is fixed, and could lead to unrecoverable financial loss; the likelihood of fixing the system quickly diminishes with time due to the vendor risk and the required technical skills becoming scarcer on the market. The recent analysis by Deloitte (refer *BC01 - CIS and CRM business case*) concluded that CIS OV and related systems must be replaced in the 2015-2020 RCP.

[26] SA Power Networks, *Customer Service Strategy 2014-2020.*
[27] For further details, refer www.talkingpower.com.au.
[28] SA Power Networks, *Customer Technology Plan,* July 2014.
[29] SA Power Networks, *Customer Data Quality Plan 2015-2020.*
[30] Ernst & Young, *CIS O/V Risk Review,* August 2012.
[31] Excluding the first affected billing cycle during which manual billing is permitted.

Adapting to changing customer expectations (Customer-Facing Technologies and Customer Relationship Management)

Over the 2010-2015 RCP, we have progressively introduced and improved customer-facing systems, self-service channels and proactive customer communication mechanisms. The positive feedback and strong uptake of these services demonstrate SA Power Networks' commitment to delivering the services that our customers value. However, these services have generally been implemented via standalone applications, which limits our ability to further improve the accuracy and timeliness of information delivered to and from our customers.

Further development in line with customer preferences requires an integrated approach to our systems implementation so that we have the capabilities to support evolving customer expectations. To address these requirements, SA Power Networks developed a *Customer Technology Plan*[32] in 2013, which aims to deliver, amongst other things:

- a longitudinal, single view of customers, including their call and outage history and relevant network activity that impacts them;
- better quality customer data through a range of business driven data quality improvement initiatives;
- enhancement of our current customer communications channels through improved content, functionality and portal access; and
- a repository that captures knowledge from local intelligence sources (customers, council, business and State and Federal Government), to assist and improve the reliability and quality of supply in network areas.

This Plan addresses these requirements via the following initiatives:

- **CIS and CRM:** As a replacement for CIS OV and related applications, a modern Customer Relationship System (**CRM**) will be implemented. It will enable a single view of customer information by providing staff with a single sign-on portal with easy access to all customer data. The full description of this initiative is provided in the *BC01 - CIS and CRM business case*[33].
- **Customer-Facing Technology:** The implementation of Customer -Facing Technologies in accordance with the roadmap defined in the *Customer Technology Plan*[34] will increase the access to information via web portals and mobile applications for self-service and self-management (for customers, retailers and electrical contractors), leveraging the CRM. The full description of this initiative is provided in the *BC02a - Customer Facing Technologies business case*.
- **Customer Call Management Replacement:** The existing Customer Contact Management System, which will reach the end of its useful life in 2017, will be replaced with a modern application fully supported by a vendor and providing the level of interaction expected by our customers. The full description of this initiative is provided in the *BC02 - Customer Call Management Replacement business case*.

IT support for Tariffs and Metering

To support the SA Power Networks *Flexible Load Strategy* [35]and *Tariff & Metering Business Case*[36], our IT systems and processes need to be upgraded to manage increased volumes of customer, metering and network data and utilise interval data for network billing. These changes include:

- changes to systems to accommodate the additional peak usage data as well as the implementation of the new tariff calculations;
- maintenance and support costs for additional meter reading devices;

[32] SA Power Networks, *Customer Technology Plan,* July 2014.
[33] Deloitte, *SA Power Networks CIS & CRM Business Case,* 31/03/14.
[34] SA Power Networks, *Customer Technology Plan*, July 2014.
[35] SA Power Networks, *Flexible Load Strategy*, July 2014.
[36] SA Power Networks, *Tariff and Metering Business Case*, 22/09/14

- maintenance and support costs for additional data storage;
- upgrades to two of our existing systems, IEE and MTS, to support interval metering;
- additional infrastructure to store interval data;
- a data warehouse and analytics system for processing interval data for network planning and Advanced Distribution Management System (**ADMS**) integration;
- a security system and process in place for customers and the organisation's privacy protection;
- additional labour to support data validation for the increased volumes of interval data in the billing process, data analytics and base data systems;
- support for interactions with third party metering service providers; and
- acquisition of a Meter Management System (**MMS**).

Figure 17 summarises the key IT initiatives under the Energised and Responsive Customer Service theme.

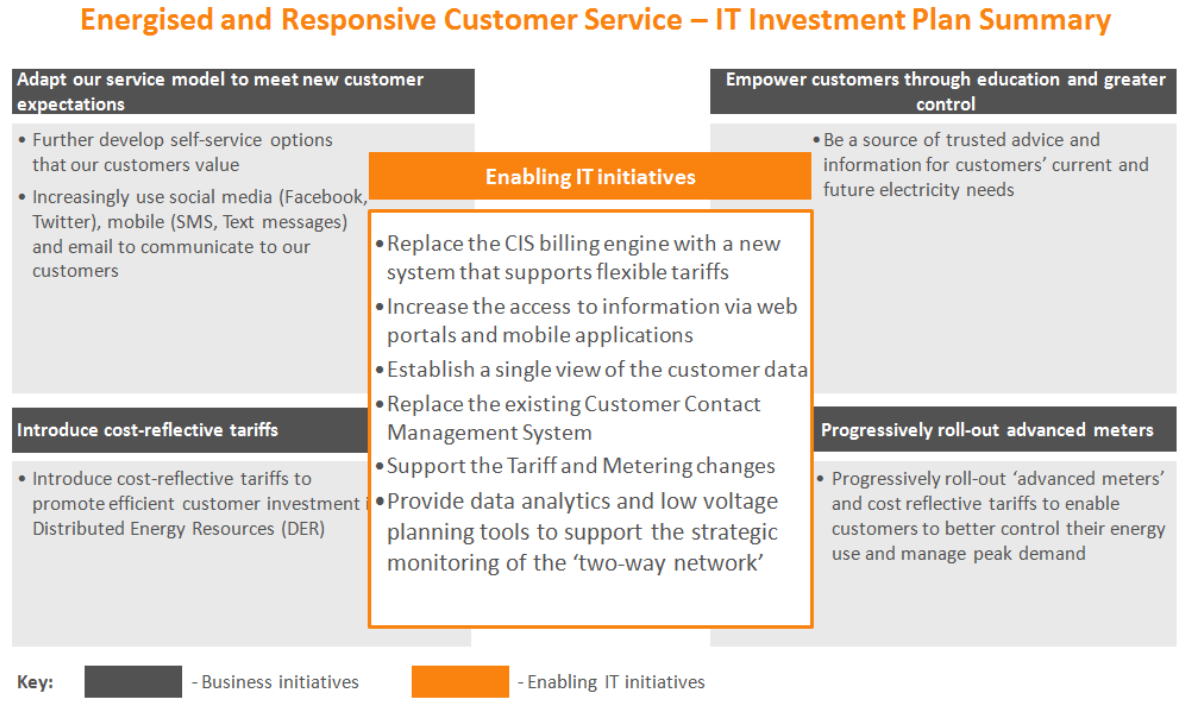


Figure 17: Energised and Responsive Customer Service – summary of the enabling IT initiatives

Benefits to customers

This investment in the IT systems, processes and capabilities will:

- ensure SA Power Networks continues to deliver on its customer and regulatory obligations by mitigating significant risks associated with the end of life of CIS OV and related applications;
- deliver a range of new and enhanced services to SA Power Networks' customers that will help them better manage and control their electricity costs, provide additional communication channels (e.g. for outage reporting) and deliver a range of other services and information that they value; and
- provide systems, processes and tools to support the introduction of cost-reflective tariffs and the roll-out of advanced meters to enable customers to better control their energy use and manage peak demand.

5.2 Excellence in Asset Management and the Delivery of Services

Key points:

- An increased volume of asset maintenance and replacement work is predicted over the 2015-2020 RCP due to ageing assets, more frequent occurrence of severe weather events and increased bushfire management. This will drive up costs in the core areas of the business. The use of modern technologies will enable SA Power Networks to maintain the required level of service while minimizing these cost increases.
- The implementation of the proposed IT program of work will also enable us to streamline our services and improve quality, integrity and access to information by reducing our IT environment complexity and supporting the adoption of shared business processes, data sets and systems across the organisation.

Regulatory Proposal alignment

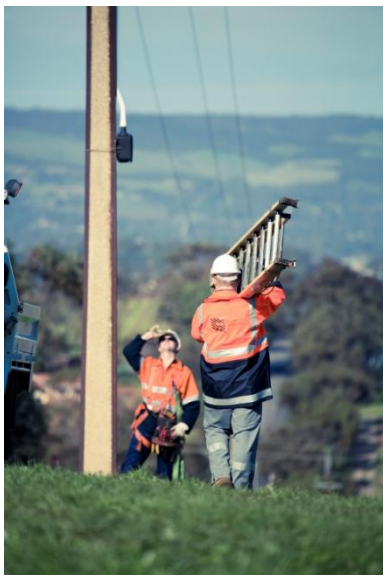
The SA Power Networks Regulatory proposal 2015-2020 describes a number of key service area related to **Excellence in Asset Management and the Delivery of Services**. The IT enablement is critical to deliver the outcomes in the following service areas:

- *Keeping the power on for South Australians*
- *Responding to severe weather events*
- *Safety for the community*
- *Ensuring power supply meets voltage and quality standards*
- *Capabilities to meet our challenges*

Business context

Keeping the power on for South Australians

Information systems support is critical to ensure the asset condition information is accurately recorded, monitored and assessed. As our existing electricity network is getting older with the majority of installations built in the 1950s and 1960s, significant investment is required in the next decade to renew ageing assets so that network reliability and performance can be maintained at the levels required by our customers. To manage the replacement and refurbishment of ageing assets cost effectively, SA Power Networks has adopted the 'Condition Based Risk Management' (**CBRM**) approach, which is current good industry practice and is widely regarded as the most efficient approach. Under the CBRM approach, the condition of an asset is continually monitored and assessed on a risk basis, and the asset is repaired or replaced when needed to maintain reliability at the least possible life cycle cost. Adequate information systems support is critical to ensure the asset condition information is accurately recorded, monitored and assessed.



Responding to severe weather events

Information systems support is required to improve outage detection, optimise unplanned maintenance schedule and prioritise preventative maintenance to mitigate risk. In addition to scheduled maintenance, the volume of unplanned maintenance and preventative risk mitigation work is expected to increase in the 2015-2020 RCP because of increasingly frequent occurrence of severe weather events. The support of information systems is required to improve outage detection (currently, it mainly relies on customer calls, whereas automated outage detection can be achieved by integrating the information from electricity network with geographic location and customer data), optimise unplanned maintenance schedule and prioritise preventative maintenance to mitigate risk.

Safety for the community

Information systems support is required to improve efficiency of the vegetation management processes, mitigate bushfire risks and ensure regulatory compliance. Improved **vegetation management** is critical to ensure reliability and safety of the network and to mitigate **bushfire risks**. While our trimming practices are driven by stringent legislative requirements, SA Power Networks must also respond to our customers' concerns about the visual impact and long-term tree health impacts of current tree trimming practices. Improved information systems support is required to improve efficiency of the vegetation management processes and ensure regulatory compliance.

Ensuring power supply meets voltage and quality standards

Improved information systems support is required to address the current quality of supply issues and prepare the network to support additional customer equipment that is expected in the future. Ensuring power supply meets voltage and quality standards is becoming more challenging due to the strong growth in solar Photovoltaic (**PV**) installations and the emerging new customer equipment such as battery storage and electric vehicles. These devices alter the energy flows in the network which can lead to power quality issues if left unmanaged. Improved monitoring and low voltage planning are required to address the current quality of supply issues and prepare the network to support additional customer equipment that is expected in the future.

Capabilities to meet our challenges

Design Management: Improved information systems support is needed to ensure complex designs can be effectively managed over the lifecycle. Accurate asset design specifications are critical for streamlining the asset construction, maintenance and replacement processes and reducing the risks associated with incorrect designs. As the volume and complexity of design work increases due to ageing assets, changed regulatory and compliance requirements and more complex network configurations, improvements to the existing, largely manual, design processes are required. Improved information systems support is needed to ensure complex designs can be effectively managed over the lifecycle resulting in less rework due to incorrect designs and reduced costs due to rationalised design tools and standardised 'bill of materials' management.

Portfolio Project Management (PPM): Fit-for-purpose information systems for planning, scheduling and tracking of work are needed to support modern approaches to program and project management. The increased volume of planned and unplanned asset maintenance and replacement work predicted over the 2015-20 RCP requires new approaches to planning and execution of field work so that more work can be performed by the same resources to contain the costs at an acceptable level. This can be accomplished by utilising modern approaches to project and program management supported by fit-for-purpose information systems for planning, scheduling and tracking of work.

Supply Chain: Streamlining the supply chain and procurement processes coupled with adequate information systems support will deliver additional benefits by reducing warehouse storage costs and enabling the organisation to improve forward planning to achieve volume discounts and reduce storage costs.

Enabling IT initiatives

In order for SA Power Networks to deliver these services in a prudent and efficient way, the IT function will need to deliver the following capabilities (Figure 18):

Enterprise Asset Management

- Leverage SAP® for standardised enterprise processes and functions that:
    - seamlessly integrate asset, work and financial information, supported by a complete master data structure to enable asset lifecycle management; and
    - enable improved service delivery through enhanced communication, planning, scheduling and coordination of work, manpower, materials and equipment .

- Provide the ability to monitor and capture asset condition data from the field via mobile devices
- Provide advanced analytics and reporting tools to support CBRM.
- Provide improved vegetation management capabilities.

An independent assessment of our EAM capabilities was conducted by Vesta[37]who identified areas which needed improvement and how we could leverage our use of SAP.

The full description of the Enterprise Asset Management initiative is available in the *BC03 - Enterprise Asset Management business case,* the *Enterprise Asset Management – Vegetation Management addendum* and the *Enterprise Asset Management - Category Analysis RIN addendum*.

Intelligent Design Management System

- Implement Intelligent Design Management System to standardise the design and consolidate and rationalise the existing Computer Aided Design (**CAD**) tools.

The full description of this initiative is available in the *BC10 - Intelligent Design Management System business case*.

PPM

- Implement Project, Program and Portfolio Management system that provides an integrated set of tools (estimating, work & resource planning, scheduling, spatial view of work, etc.) to improve efficiency and enable the organisation to efficiently manage any increased workloads, and provide enterprise wide visibility of work.

The full description of this initiative is available in the *BC05b - PPM business case*.

Field Force Mobility[38]

- Enable better work tracking and performance monitoring through mobile timesheeting
- Strengthen the data collection and information flows from our field personnel to our customers to provide accurate and timely information on service status and power restoration activities

The full description of this initiative is available in the *BC16 - Field Force Mobility business cas*e.

Supply Chain

- Implement the Supply Chain and Procurement system to improve forward planning to achieve volume discounts and reduced storage costs

The full description of this initiative is available in the *BC05a - Supply Chain business case*.

The key IT initiatives under Excellence in Asset Management and the Delivery of Services are summarised in Figure 18.

[37] Vesta, *SA Power Networks EAM Roadmap*, 28/01/2014.
[38] This initiative is also strongly related to the Energised and responsive Customer Service theme as it will help strengthen the data collection and information flows from our field to our customers.

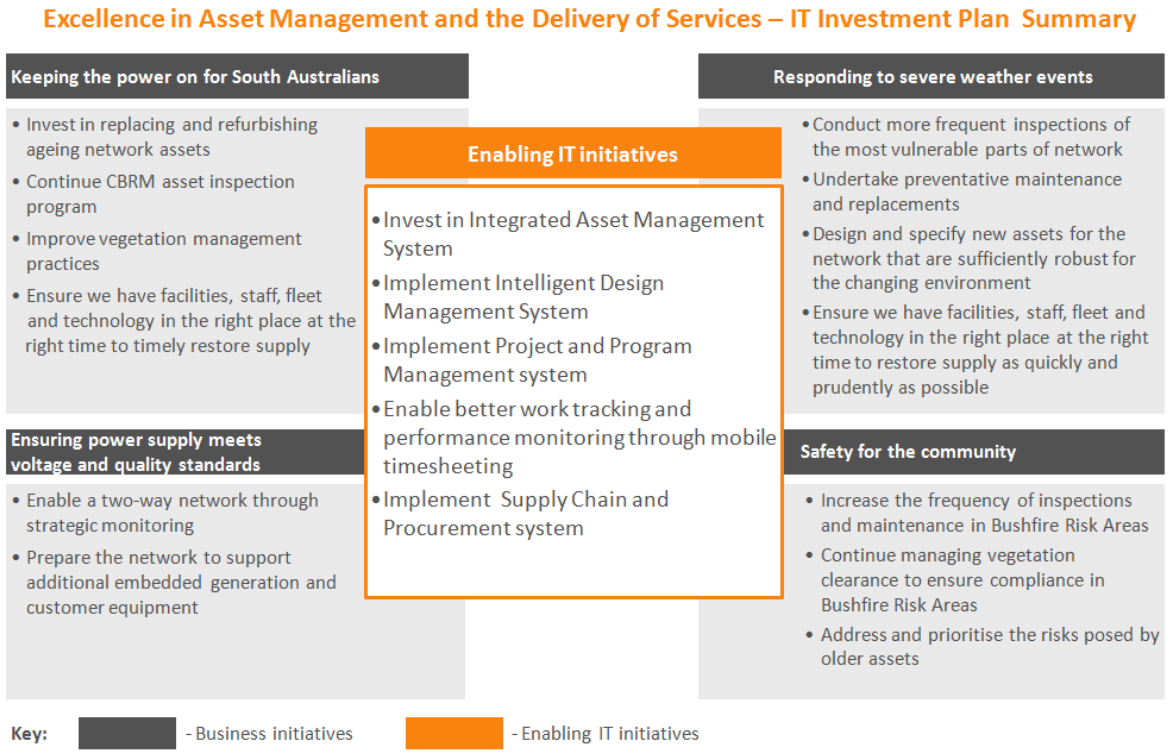


Figure 18: Excellence in Asset Management and the Delivery of Services – summary of the enabling IT initiatives

Benefits to customers

This investment in the IT systems, processes and capabilities will:

- enable SA Power Networks to meet its regulatory and customer obligations in a prudent and efficient way by delivering efficiencies in the core areas of the business and avoiding the additional costs associated with manual processes;
- streamline our services and improve quality, integrity and access to information by reducing our IT environment complexity and supporting the adoption of shared business processes, data sets and systems across the organisation; and
- enable us to cost effectively respond to the market and regulatory changes by maximising the value from our SAP investment.

5.3 Investing in our People, Assets and Systems

Key points:

- The SA Power Networks Strategy 2014-2018 identifies Enterprise Information Security, Enterprise Mobility and the Information Technology improvements as the key strategic initiatives for the IT Department. This Plan builds upon these foundational initiatives to deliver the required capabilities in the 2015-20 RCP.
- The implementation of the Enterprise Information Security initiative will provide foundational capability required to mitigate risks associated with increased vulnerability of national critical infrastructure to cyber attacks and minimise threats to security and privacy of personal information that SA Power Networks keeps in relation to our customers, contractors and employees.
- The implementation of the Enterprise Mobility initiative will provide foundational capability to empower our people, customers and partners to capture, view and share accurate information when they need it, wherever they may be.
- Following the implementation of the IT Transformation program in 2014, further improvements to our IT operating environment will enable us to control and, where possible, reduce technology costs in the long term through improved IT management systems and processes.

Regulatory Proposal alignment

The relevant key service area described in the SA Power Networks Regulatory Proposal 2015-20 is *Capabilities to meet our challenges*.

Business context

SA Power Networks is continually investing in enterprise capabilities required to meet our current and future challenges. In recognition of the increased criticality of Information Security, Enterprise Mobility and IT effectiveness for business operations and in response to the drivers discussed in Section 6.1, the SA Power Networks Strategic Plan 2014-18 sets the following targets for the IT function:

Table 2: The SA Power Networks Strategic Plan 2014-18 initiatives the IT function is accountable for

Ref [39]	KEY STRATEGIES TO DELIVER RESULTS	TIMING
4.1	Develop the Enterprise Information Security Strategy	Jul 2015
4.2	Develop the Enterprise Mobility Strategy and associated Technology Plan	Jun 2015
4.3	Improve Information Technology through the IT Transformation program	Jun 2015

The business objectives of these strategic initiatives are as follows:

- **Enterprise Information Security Strategy**: *SA Power Networks' business systems will ensure integrity, availability and security of data.*
- **Enterprise Mobility Strategy:** *To improve efficiency in our business processes and empower our people, customers and partners to capture, view and share accurate information when they need it, wherever they may be.*
- **Information Technology Improvements through the IT Transformation program:** *Our Information Technology people will be highly valued business enablers, providing services in a timely and responsive fashion.*

[39] Reference to the 'Key Strategies to Deliver Results' defined in the SA Power Networks Strategic Plan.

Business objectives for Enterprise Information Security

Due to the increased threats posed to the business and the critical nature of the services provided, an effective dedicated information security capability is required.

Business objectives for Enterprise Mobility platform and solutions

In the current period, we have expanded our mobility platform to increase the scope of the field functions and processes covered. Notwithstanding this, there remains a significant number of manual and paper based processes that result in multiple handling of data and rely on a range of mobile solutions with our people using multiple devices while undertaking day-to-day operational activities. There is a clear need for an integrated mobility solution, which leverages current digital technologies and covers all aspects of field and customer related work.

This will address some of the challenges facing our crews by enabling them to operate more efficiently and effectively when building and maintaining the distribution network. We aim to provide our crews the ability to flexibly manage, execute, monitor and analyse work in the field via mobile devices, tablets, wireless networks and related services.

This flexibility in receiving and completing work real time also extends to our service providers who conduct work on the network or for vegetation management. Our service providers have indicated that the ability to use one mobile device in the field with systems from multiple clients, will assist in keeping service costs low.

In recent years, field force mobility solutions and technologies have become more pervasive, better understood and cost effective. In summary, we will continue to build our mobile capabilities by improving our data and voice networks to enable our people to efficiently capture, view and share accurate information when they need it, wherever they may be, with a single (type-agnostic) device on a secure technology platform (refer *SA Power Networks Enterprise Mobility Strategy*[40]).

Our customers now expect information 'twenty four-seven' across multiple channels and increasingly want self-service and self-management options[41]. As outlined in Section 4.1, we have been responding to these changes during the 2010-2015 RCP and provided several mobile solutions to our customers including self-service capability for fault reporting via internet and mobile devices and the option for customers to set reminders on their scheduled meter reading dates to ensure we have access to the meter. These improvements in our connectivity with customers have increased the two-way flow of information and enabled customers to keep up to date proactively. The real time engagement with our customers will continue as we improve our mobility capabilities, collect more information from the field and further integrate our data and systems.

[40] Litmus Group, *SA Power Networks Enterprise Mobility Strategy*, February 2014.
[41] As indicated by the outcomes of the customer engagement program, refer to *SA Power Networks Directions and Priorities*, May 2014 and *SA Power Networks Customer Service Strategy*, 2013.

Enabling IT initiatives

In order to achieve these business objectives, the following capabilities need to be implemented during the 2015-20 RCP.

Enterprise Information Security

Significant investment is required to achieve a foundational capability and an acceptable level of maturity in information security. This will be achieved by investing in people, processes and technology to:

- establish processes tailored to the changed external and internal environment to guide consistent information security management, monitoring and enforcement;
- enhance preventative and detective technologies to support operational responsibilities and information security processes;
- provide more efficient and robust security services that are able to respond proactively to increased information security threats and risks ; and
- ensure consistency in the management and implementation of security practices across IT, Operational Technology and Telecommunication environments.

Further details this investment are available in the *BC26 - Enterprise Information Security business case*.

Enterprise Mobility

The Enterprise Mobility Platform and the associated upgrades in the data and voice network will improve process efficiency and empower our people, customers and partners to capture, view and share accurate information when they need it, wherever they may be. To achieve this, the following initiatives are required:

- Implement a **Mobile Device Management** platform that allows SA Power Networks to control and protect the data and configuration settings of all mobile devices in its network.
- Implement a **Mobile Application Platform** that provides relevant stakeholders with access to necessary applications and supports mobile application provisioning and deployment.
- **Security Management:** Ensure that application data is secure and accessible only to authorised users and ensure compliance with regulatory and corporate policies such as ISO 27001 and Information Management Security Framework.
- **Network Management:** Establish the capability to connect end user devices via available networks at any given location (e.g. public, private or Internet).
- **Integration Management:** Ensure that back end data and systems integrate with mobile devices to allow access to information from any device.

Further details of this investment are available in the *BC14 - Enterprise Mobility business case*.

Information Technology Improvements

Following the implementation of the IT Transformation program in 2014, the program of IT process improvements must continue with the focus on:

- improving the IT Service Management (**ITSM**) capability; and
- replacing the current basic Incident Management and Change Management system, VMWare Service Manager, which will reach the end of its useful life in 2017, with a contemporary, fit for purpose ITSM toolset.

Further details of this investment are available in the *BC29 - IT Management and Operations business case*.

Benefits to customers

This investment in the IT systems, processes and capabilities will:

- reduce risks associated with increased vulnerability of national critical infrastructure to cyber attacks;
- minimise threats to security and privacy of personal information that SA Power Networks is required to keep in relation to our customers, contractors and employees;
- empower our people, customers and partners to capture, view and share accurate information when they need it, wherever they may be;
- enable us to control and, where possible, reduce technology costs in the long term through operational improvements and improved systems for IT governance.

5.4 Business Foundations

Key points:

- The SA Power Networks Strategic Framework identifies Excellence in Regulatory Management, Sound Financial Management & Governance and Safe, Skilled & Committed People among key foundational business capabilities "that enable us to deliver".
- Significant investment in IT systems is needed to ensure compliance with the new regulatory and legal obligations such as Regulatory Information Notice (**RIN**) reporting[42] and National Harmonisation of Health and Safety laws[43].

Regulatory Proposal alignment

The relevant key service area described in the SA Power Networks Regulatory Proposal 2015-2020 is *Capabilities to meet our challenges*.

Business context

As a regulated business, SA Power Networks must comply with its regulatory obligations set out by the AER. The AER's Better Regulation program has resulted in new Regulatory Information Notice (**RIN**) data requirements from DNSPs. Benchmarking information demands are now extensive, and come with significant penalties for non-compliance. In addition to the current Annual RIN, future regulatory reporting includes the Category Analysis RIN, Economic Benchmarking RIN and Reset RIN. These reports require comprehensive corporate information at the level of detail currently not captured.

Most of the information requested by the AER is either not currently captured or not at the level of granularity being sought. To comply with AER requirements there is a need for additional data capture, management and reporting that aligns with the RIN data obligations.

The scope of the RIN reporting requirements impacts business units such as Supply, Field Services, Networks, Finance and Human Resources as well as multiple systems across SA Power Networks as broadly depicted below:

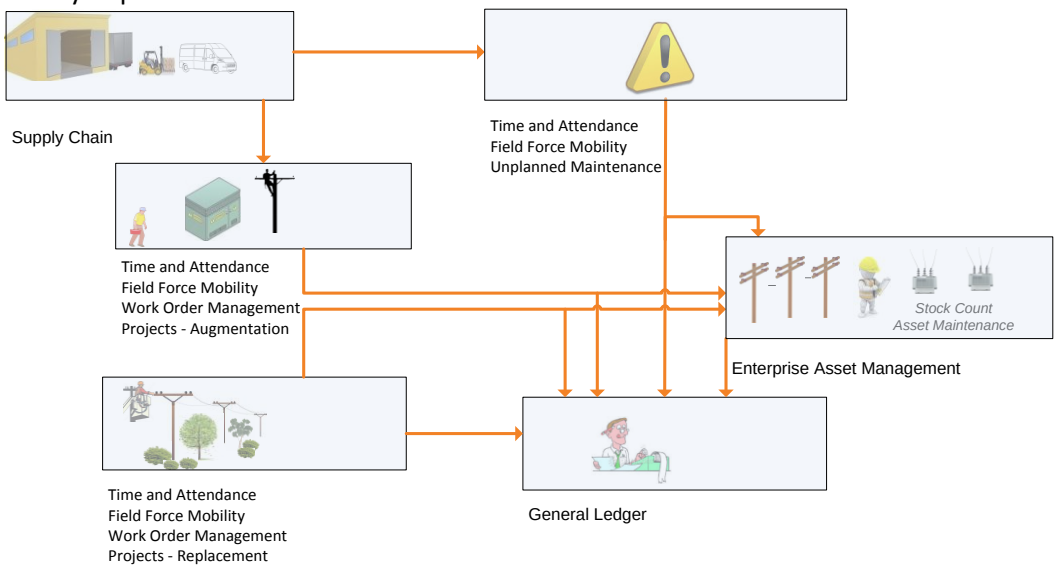


Figure 19: Simplified data flow through SA Power Networks' systems that enable RIN data capture and reporting

[42] covered under AER's Better Regulation program.
[43] covered under the Work Health and Safety Act (SA) 2012 and Work Health and Safety Regulations 2012.

In order to achieve compliance with changed regulatory requirements, improvements are required in the Regulatory Reporting, Financial Management, HR Management and a range of other business processes and related systems.

Additionally, SA Power Networks' business strategies call for:

- improvements to the Risk Governance and Compiance processes to achieve regulatory and legal compliance and improve the processes for capture, tracking and mitigation of business risks;
- enhanced Learning & Development and Performance Management processes to enable safe, skilled and committed workforce; and
- sound financial management and governance.

Enabling IT initiatives

RIN reporting

Significant investment in IT systems and processes is required to enable data collection, processing, maintaining and reporting across many systems in order to:

- Leverage and extend the current systems, review and redesign business processes and perform an extensive data capture and cleansing exercise of existing data sets to enable compliant RIN reporting.

Further details of this investment are available in the *BC32 - RIN Reporting business case*.

Financial Management

- Upgrade the existing core financial system to improve integration between financial, asset and service delivery information, provide integrated long-term business planning tools to improve efficiency and accuracy of financial planning and reporting.
- This project is one of the key dependencies for the RIN Reporting project as it upgrades a current standalone system to better integrate regulatory and financial information systems in support of improved reporting, analytics and decision making.

Further details of this investment are available in the BC04 - *Financial Management business case*.

People and Culture Improvements (HR Systems)

- Extend HR system capability to improve visibility of employee skills, learning and development, performance management and self-service capabilities.
- This project is one of the key dependencies for the RIN Reporting project as it provides the necessary data structures required for the RIN reporting.

Further details of this investment are available in the *BC11 - HR Systems business case*.

Governance, Risk, Regulation and Compliance

- Enhance the existing Governance, Risk, Regulation and Compliance systems to allow for regulatory and legal obligations reporting, optimise usability, allow for a single information repository, document management and integration with other systems as required.

Further details of this investment are available in the *BC31 - Governance, Risk, Regulation and Compliance business case*.

Benefits to customers

This investment in the IT systems, processes and capabilities will:

- ensure compliance with the new Regulatory Information Notice (**RIN**) reporting requirements
- ensure compliance with the new Harmonisation legislation; and
- maximise the value from our SAP investment to enable us to cost effectively respond to future market and regulatory changes.

5.5 Enterprise Enabling Technologies

Key points:

- In order to deliver the outcomes and benefits required within the focus areas described in Sections 5.1-5.4, a significant investment in the foundational information technology capabilities is required.
- This investment will enable our customers and business to derive maximum value from our increased information collection for improved decision making and reporting; provide a foundation to rationalise a number of systems into ERP (SAP) to reduce our IT environment complexity; support the adoption of shared business processes, data sets and systems across the organisation; and maximise the value from our SAP investment to enable us to cost effectively respond to the market and regulatory changes.

Regulatory Proposal alignment

The relevant key service area described in the SA Power Networks Regulatory Proposal 2015-2020 is *Capabilities to meet our challenges*.

Business context

In order to deliver the outcomes and benefits required within the focus areas described above, a significant investment in the foundational information technology capabilities is required. Figure 20 provides an example of RIN reporting requirements that illustrate how the required business capability (RIN reporting) is dependent on the Enterprise Enabling Technologies (BI Enablement, Data Management, Data Centre, Integration, SAP Foundation, etc.).

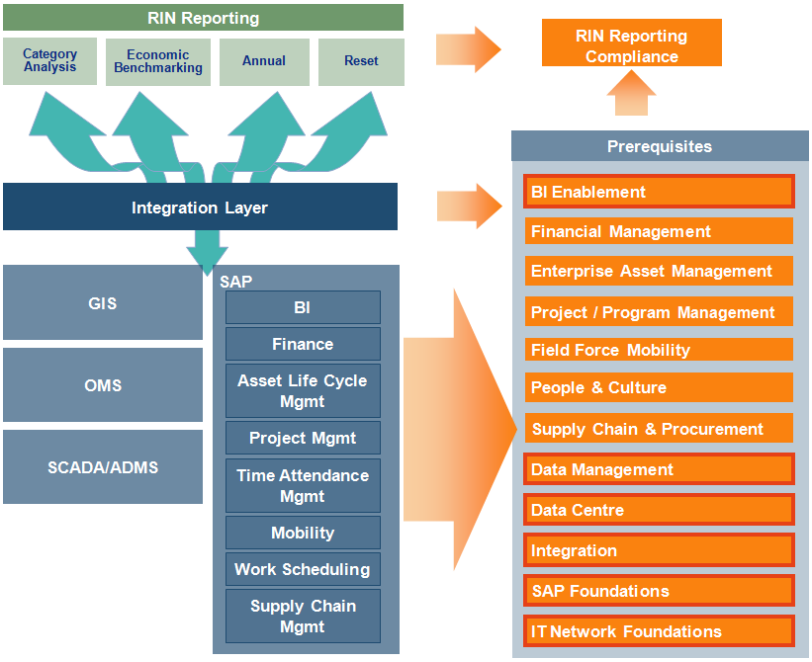


Figure 20: Dependency of the RIN reporting capability on the Enterprise Enabling Technologies

The key business requirements that call for the implementation of the Enterprise Enabling Technologies are outlined below.

An integrated approach to Business Improvement

The recent investments in network infrastructure and customer facing developments combined with the significant changes to people, data, systems and processes warrant an integrated approach to business improvement. New IT capabilities need to be implemented to provide integrated systems' and data environment, as well as the enterprise architecture management tools. An integrated approach to business improvement is discussed in more detail in Section 6.4 of this document.

Consolidation of our information technology environment

SA Power Networks' existing systems and processes have been developed and built over many years, with a focus on meeting specific functional needs as efficiently as possible. They have not been designed or configured to capture and categorise information in the manner recently required for regulatory reporting purposes, nor have they been consistently built with end to end business processes in mind. Historically, systems have been internally built or heavily customised with limited integration.

Rapid growth in IT systems to support business processes in the current RCP resulted in further bespoke, standalone applications in response to immediate business needs. This has added to the complexity of the IT landscape within SA Power Networks. Many of these changes resulted from requirements to meet changing stakeholder expectations.

The IT application 'suite' has increased significantly from 2010 to 2013, with the majority of developments on a standalone basis. This existing technology architecture is not fit to support SA Power Networks' future directions and customer expectations.

SA Power Networks will need to significantly increase investment in initiatives that reduce our IT environment complexity and support the adoption of shared business processes, data sets and systems across the organisation. This will allow improved collaboration, business agility, error reduction and reduced duplication, and provide longer term benefits for our customers.

Rationalising the application landscape to focus on a smaller number of core product suites will provide a means of delivering the required business capability but with lower change management costs in the longer term.

Data and information handling capabilities

As SA Power Network grows richer in data, the need for more advanced data and information handling capabilities arises. There has been a growing demand within our organisation for information management tools in recent years. In particular, we have realised that many existing business strategies are constrained without an enterprise approach to information handling.

The roadmap of IT initiatives in Appendix F provides a more complete view of the pre-requisites and dependencies between the initiatives that deliver outcomes and benefits required by our customers, community and business stakeholders and the Enterprise Technologies that need to be implemented to enable these outcomes.

Enabling IT initiatives

The following Enterprise Enabling Technologies are required:

Enterprise integration

Deliver an integration platform to facilitate improvement and standartisation of application integration and data flow between corporate systems. Further details of this investment are available in the *BC18 - Enterprise Integration business case*.

Data Centre

In line with increased information handling volumes, we will invest in a new Data Centre arrangement. The current business environment has demanded greater disaster recovery and an expanded hardware infrastructure to support increased system availability to underpin 24/7 service provision to our customers. Short term remedies do not provide an adequate sustainable approach.

A Data Centre Strategy and Roadmap[44] has been developed to ensure a cost effective and robust solution to support the business now and into the future.
This initiative will provide improved communication links and ensure the sustainability and scalability of our core infrastructure. Further information on this investment is available in the *BC17 - Data Centre Consolidation business case*.

BI Enablement, Enterprise Information Management and Data Management

Enhance customer and business insights, decision making and regulatory reporting with Business Intelligence and Data Management tools, including:

- document management (records management and digital asset management);
- document capture (scan, categorise, store and search);
- collaboration (team sites and communities, social media features and portals);
- web content management (site management, content publishing, portal management and social media features); and
- Enterprise Resource Planning (**ERP**) integration (providing visibility into the document management system from the ERP user interface, and provide a seamless and efficient user experience).

Further information on this investment is available in the *BC21 - Business Intelligence Enablement*, BC24 - *Enterprise Information Management* and *BC22 - Data Management* business cases.

SAP Foundation

Upgrade the SAP Foundation systems that approach their end of service life in 2016.

Further information on this investment is available in the *BC09 - SAP Foundation business case*.

Enterprise Architecture Tools

Deliver Enterprise Architecture tools to support Enterprise Architecture processes and governance.
Further information on this investment is available in the *BC07 - Enterprise Architecture business case*.

Benefits to customers

This investment in the IT systems, processes and capabilities will:

- enable the implementation of the core business-driven initiatives described in the previous sections, including but not limited to, RIN Reporting, Enterprise Asset Management, CIS and CRM, Customer-Facing Technologies, IT Support for Tariff and Metering;
- enable our customers and business to derive maximum value from our increased information collection for improved decision making and reporting;
- empower our people, customers and partners to capture, view and share accurate information when they need it, wherever they may be;
- provide a foundation to rationalise a number of systems into ERP (SAP) to reduce our IT environment complexity;
- support the adoption of shared business processes, data sets and systems across the organisation; and
- maximise the value from our SAP investment to enable us to cost effectively respond to the market and regulatory changes.

[44] *SA Power Networks Data Centre Strategy*, Ernst & Young, June 2013.

5.6 IT Applications and Infrastructure Refresh

Key points:

- Ongoing prudent and timely refresh of our systems and infrastructure will enable us to maintain security and reliability of our IT environment, and quality and reliability of our services, in line with our agreed service level targets and future business, customer and regulatory requirements.
- Improved disaster recovery as part of the corporate business continuity initiatives will ensure all business-critical systems can be recovered in an event of a disaster within the timeframes required by our stakeholders.
- Whilst the majority of our system and infrastructure are managed in house, some of our NEM systems are managed by the CKI/HEI Electricity Distribution Services Pty Ltd Services (CHED Services) under an outsourcing agreement. Recent review conducted by KPMG has concluded that maintenance and upgrade costs payable under the CHED Services agreement are prudent and efficient.

In addition to the business-driven investment described in the previous sections, continuing investment is also required in our existing IT environment to ensure its currency and security.

Current state assessment

The IT function is responsible for providing a sustainable IT environment, covering support, maintenance and upgrades to our major business systems such as OMS, GIS, customer systems and business management systems.

As described earlier in Section 4.1, the IT investment plans for the 2010-2015 RCP focused on technology refresh and incremental enhancements to the capabilities established in the previous decade. In practice, faster than expected changes in the business environment triggered key organisational changes and imposed greater than expected requirements for technical capabilities. Additional investments were required in the Works Management, Asset Management, Customer-facing and Regulatory systems due to changed customer expectations, regulatory obligations and increased business demand for IT services. Greater than expected investment was also required to reduce risk and improve Disaster Recovery capabilities due to the increased criticality of IT systems to the business.

The business requires the IT Applications and Technical Operations functions to now support 60% more applications than was envisaged in 2010. The number of business critical applications requiring heightened support has more than quadrupled from 6 to 26 and information storage requirements have increased over 3,000% from 12.5 terabytes to 400 terabytes (some of this increase is due to changes in backup technologies).

This has resulted in the SA Power Networks IT function straining to support an IT landscape that has undergone a dramatic transformation over the current regulatory period. The increased complexity of the IT environment drove a significant increase in maintenance and support costs. The funding received through the current reset period did not foresee growth of business-critical applications and therefore investment in maintaining the IT Application and Technical Operations portfolio needed to be constrained. The following diagram illustrates the growth in applications and the percentage of these applications that have received upgrades, patching and enhancements from 2010 – 2013.

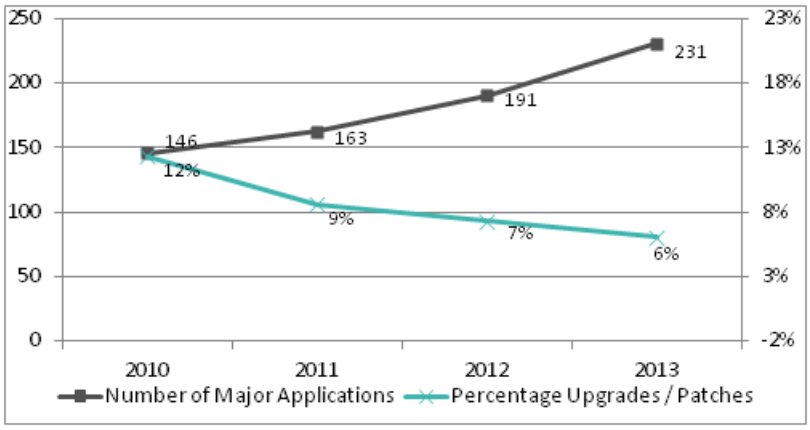


Figure 21: The growth in applications (black line) and the percentage of these applications that have received upgrades, patching and enhancements (aqua) during 2010-2013

Similarly, the following diagram illustrates the growth in virtual servers over the 2010-2015 RCP to support this transformation:

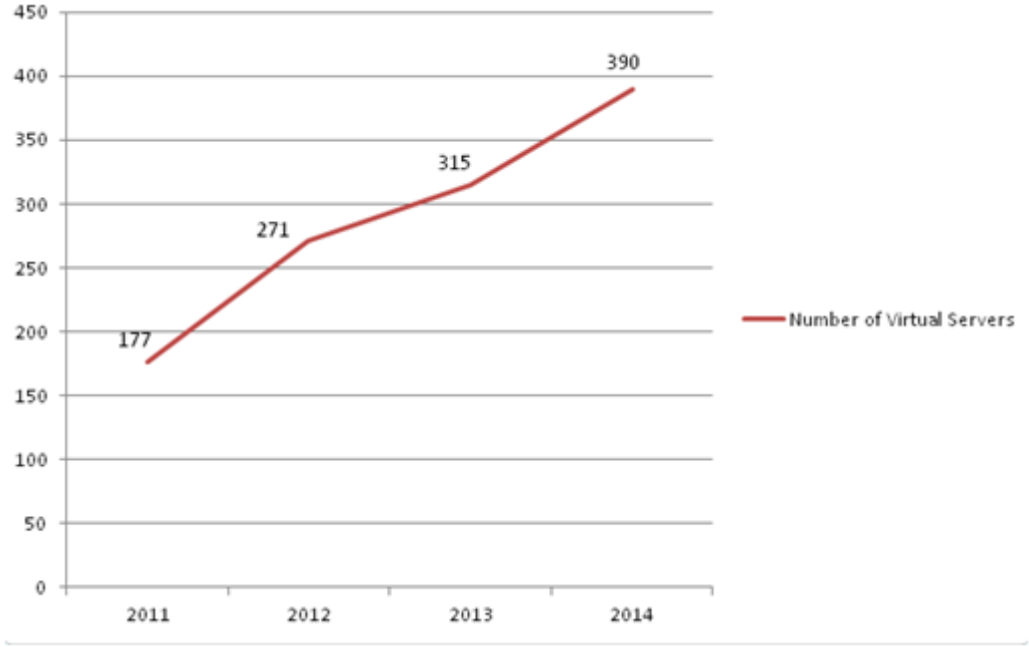


Figure 22: The growth in virtual servers over the 2010-2015 RCP

SA Power Networks has a strategy to rationalise the existing number of applications to constrain application growth. The rationalisation of applications is expected to be offset by additional applications to meet future business needs and therefore we aren't forecasting a significant reduction in applications or infrastructure.

Efficiency improvements have been accomplished through the introduction of IT Service Management good practice. These efficiency improvements have not addressed the risk associated with constrained spending on the maintenance of the IT Applications and Technical Operations portfolio. This exposes the business to an unsustainable level of risk affecting the ability to deliver a reliable and safe service to customers, for example:

- The failure of customer relations, outage management and network finance systems exposes the business to significant financial, OH&S, legislative and customer service risks;
- The Australian Government Department of Defence has released their top 35 mitigation strategies, to prevent 85% of cyber intrusions. The second and third most important mitigation strategies relate to patching applications and operating systems, therefore risking the confidentiality, integrity and availability of information assets;

- The stability of systems is potentially compromised where patches and upgrades are not applied in a timely manner. This includes requesting support from vendors who will require systems to be at the latest patch versions prior to providing assistance;
- Maintenance costs may be higher when implementing workarounds to issues resulting from unpatched systems where the issues have been addressed in current releases;
- Upgrade costs may be higher due to outdated systems requiring a more complex upgrade process;
- Less functionality is available from existing systems due to outdated software, providing lower value to the business; and
- A number of strategies were adopted to manage the risk profile by extending warranties, deferring upgrades, patches and prolonging warranty support instead of replacing end of life devices. For example, SA Power Networks have allowed infrastructure assets and associated software to go out of vendor support. This has led to the risk profile exceeding our acceptable standards with whole of business outages now possible.

SA Power Networks commissioned a Business Impact Assessment from CGI (a leading risk consulting firm), which identified that of the 16 most critical business applications, most need to be restored within a day of an outage occurring. This therefore places a higher reliance on people, processes and technology to provide higher reliability that is currently able to be provided.

The current practice is unsustainable. The complexity is such that SA Power Networks is exposing itself to a range of business continuity, systems outages and downtime risks that may result in SA Power Networks not providing quality services to its customers.

Where do we need to be?
Simply, we need to be more prudent and timely with patching, maintenance and upgrades for IT operations systems, infrastructure and IT applications.

This means getting to a state where:

- Systems are patched, upgraded and supported in an effective manner; and
- The applications are brought to a level that can reliably support the business now and in the future.

This will result in an increased ability to manage the risk of unpatched or outdated systems.

Further information on these initiatives can be found in the *BC27 - Technical Operations* and *BC28 - IT Applications* business cases.

National Electricity Market Systems
Whilst the majority of our system and infrastructure are managed in house, some of our NEM systems are managed by CKI/HEI Electricity Distribution Services Pty Ltd Services (**CHED Services**) under the Full Retail Contestability (**FRC**) IT Support Services Agreement. This agreement commenced in 2005, when SA Power Networks entered the national market, and has been extended a number of times. CHED services provide SA Power Networks with an annual maintenance and upgrade plan to ensure the systems remain current and capable of meeting SA Power Networks' NEM and jurisdictional Regulatory obligations. The associated costs have been included into our capital and operating plans.

To ensure these costs are prudent and efficient, we engaged KPMG to review the FRC IT Support Services Agreement. The review considered "areas of the service agreement, total annual fees, benchmarking, prudency and efficiency" of the ICT operating expenditure and included both financial and benchmarking analysis. The results of this review are contained in the *Independent analysis of arrangements between SA Power Networks and CHED Services*.

KPMG concluded that:

> "..contract has a defined scope…..established key performance indicators (**KPIs**)…reported on regularly"
> "….KPI's are broadly consistent with good industry practice…."
> "..the ratio of (**FRC**) expenditure to the total ICT expenditure base has remained constant over several years..".
> "…on the basis of the aggregated ICT operating benchmarking, we have not found evidence to indicate that the FRC IT costs are not efficient and therefore that by inference, that CHED FRC IT services would materially impact the efficiency of the determination of prudent expenditure costs."

Benefits to customers

This investment in the existing IT systems and infrastructure will:

- enable us to maintain reliability and quality of IT services, and security of our systems and infrastructure, in line with our agreed service level targets and future business, customer and regulatory requirements;
- improve disaster recovery as part of the corporate business continuity initiatives to ensure all business-critical systems can be recovered in an event of a disaster within the timeframes required by our stakeholders; and
- ensure we meet our NEM and jurisdictional Regulatory obligations.

6. IT Investment Plan key inputs

6.1 Change drivers

A number of external, internal and technology drivers will influence the operation of SA Power Networks during the next RCP and the IT function will need to respond accordingly through investments in order to continue to support the organisation in delivering on its fundamental objective. To identify the key drivers, we have undertaken a series of workshops with representatives from all areas of the business and analysed the outcomes of the Talking Power stakeholder consultation program, the new regulatory guidelines and the industry trends. We have also engaged an independent research organisation, Gartner Research, to gain insights into future technology trends and strategic priorities within the Energy and Utilities sectors in Australia and worldwide.

External drivers

ID	Driver	Description
E1	Customer Expectations	Customers are experiencing a level of connectivity and information access across a range of industries that is transforming their expectations of SA Power Networks. Increasingly, our customers expect tailored 24/7 access to information and services via multiple channels including the internet, smartphone applications, text messages and email. They are seeking self-service portals and connection via social media that would provide functionality such as real-time interaction with SA Power Networks and more information to help them make spending choices and to help speed up their transactions. Our customers still value contact centre services, however they increasingly expect that the call centre operators are equipped with an up-to-date, end-to-end view of the customer, including their location, preferences, contract history, and relevant network outage or construction activity.
E2	Demand Side Participation (Advanced meters and cost-reflective tariffs)	Defined as the ability of customers to make decisions regarding the quantity and timing of their energy consumption, Demand-side Participation will be a major external factor over the next RCP. The electricity market changes are driven by a number of recent reviews and reform processes including the AEMC Power of Choice Review, the Council of Australian Governments Energy Council (**COAGEC**) reform program and the AEMC NER change processes. 78% of customers surveyed during the TalkingPower[45] consultation program supported the installation of advanced meters to allow them to exercise greater control over their electricity use.
E3	Distributed electricity generation	The increase in the number of electricity generators, from household solar panels to community wind turbines will impose new demands in relation to metering, asset management and customer reporting. Our customers support SA Power Networks upgrading the network to allow the two-way flows and enable the increased uptake of new technologies.
E4	Security	As the sophistication of criminal and terrorist activity increases, cyber

[45] The SA Power Networks' dedicated consumer engagement channel available at http://talkingpower.com.au.

ID	Driver	Description
		attacks on critical infrastructure are increasingly seen as one of key threats to critical national infrastructure security. Furthermore, the introduction of new Information Privacy Laws has imposed additional obligations on SA Power Networks in relation to security and privacy of personal data that our organisation holds in relation to our customers, contractors and employees.
E5	Regulatory requirements	Regulatory reporting obligations have already been considerably strengthened and can be expected to increase further as the AER and other legislative bodies pursue a wider use of benchmarking methods and expect improved and timely compliance reporting. Regulatory compliance including alignment to the National Electricity Rules (NER) and AER Expenditure Objectives is one of the key external drivers for SA Power Networks' Capital and Operating expenditure plans.
E6	Ageing assets	The South Australian electricity distribution network is getting old, with the majority of installations built in the 1950s and 1960s. Significant investment and effort are required over the next decade to renew ageing assets to keep the network in good condition, maintain reliability and minimise safety risks for the community.
E7	Severe weather events	South Australia is often subject to severe weather events including lightning storms and high winds which can leave significant damage in their wake. The number and severity of these weather events are increasing and they are the major cause of prolonged interruptions to power supply. SA Power Networks is bound by the regulated Guaranteed Service Level (**GSL**) regime. While customers receive GSL payments from SA Power Networks in recognition of the inconvenience of extended interruptions, customers are telling us that we should improve the resilience of the existing above ground network through cost-effective enhancements, and better monitoring, control and automation equipment.

Internal drivers

ID	Driver	Description
I1	Asset Management	Improved asset management capabilities including asset identification, geographic localisation, acquisition, maintenance, performance and disposal history are demanded by the business to enable prudent and efficient asset utilisation.
I2	System integration	High support costs, challenges in supporting the growing requirements for consolidated information and the risks associated with the presence of a large number of stand-alone applications require the improvement in the way our applications are currently integrated.
I3	Information management and data quality	The increase in demand for data from our customers, stakeholders, regulatory bodies and our business personnel drives the requirement to put in place adequate tools, processes and governance to ensure availability of information and adequate integrity and quality of data.

ID	Driver	Description
I4	Data Centre	Our Data Centre is reaching the limit of its capacity; over the next RCP a new solution needs to be developed to support growing business requirements.
I5	IT environment simplification	Growing support and maintenance costs associated with the current IT Applications portfolio call for the simplification and rationalisation of the IT Applications landscape into a smaller number of core vendor solutions.
I6	Ageing workforce	The electricity industry has one of the oldest workforces of all Australian industries. Also, the post-Global Financial Crisis environment has caused many workers to delay retirement. Given that the industry is technically specialised with an inherently dangerous work environment, it takes considerable time and money to train and develop new workers and apprentices. Transitioning and replacing the ageing workforce will be a significant challenge during the 2015-2020 RCP.
I7	New and more complex competencies	The technical skills profile for the electricity industry is changing and becoming more complex, which means that new and more complex competencies will be required among SA Power Networks' workforce in the near future.

Technology drivers

ID	Driver	Description
T1	Mobility	Mobile technologies provide the ability for two-way communication with customers via their mobile devices and increased opportunities for field staff and contractors to access corporate applications and data from mobile devices to improve their work efficiency. Supporting mobile technologies is one of the key drivers of this Plan.
T2	IT / OT convergence	The convergence of Operational and Corporate information networks is associated with increased vulnerability to cyber security threats.
T3	Cloud technologies	With the increasing availability and diminishing costs of cloud solutions including Software as a Service, SA Power Networks will need to exploit the emerging opportunities in order to provide cost effective IT services.
T4	Network monitoring and control technologies	Driven by the transition to a two-way network, we will need to support the advanced technologies for remotely monitoring and controlling the electricity network. Developing these capabilities whilst maintaining adequate security controls will be crucially important.
T 5	ADMS	Implementation of a new Advanced Distribution Management System will result in organisational opportunities to leverage information generated from automated electricity distribution network support processes.
T6	Data volume and growth	It is anticipated that the amount of data utilised by SA Power Networks will grow significantly as we transition to smarter networks. In these circumstances Enterprise Content Management, Analytics, Reporting and data lifecycle management capabilities will become increasingly important to enable informed decision-making.

6.2 Business strategies

Throughout 2010-2015 RCP, SA Power Networks' ongoing approach to challenging the way we do business has seen the development of:

- Future Operating Model;
- Strategic Framework;
- the annually updated SA Power Networks Strategic Plan; and
- detailed business strategies including Customer Service Strategy, Asset Management Strategy, People and Culture Strategy among others.

SA Power Networks' response to the external, internal and technology drivers is reflected in the annually updated SA Power Networks Strategic Plan, built around our Strategic Framework (Figure 23).

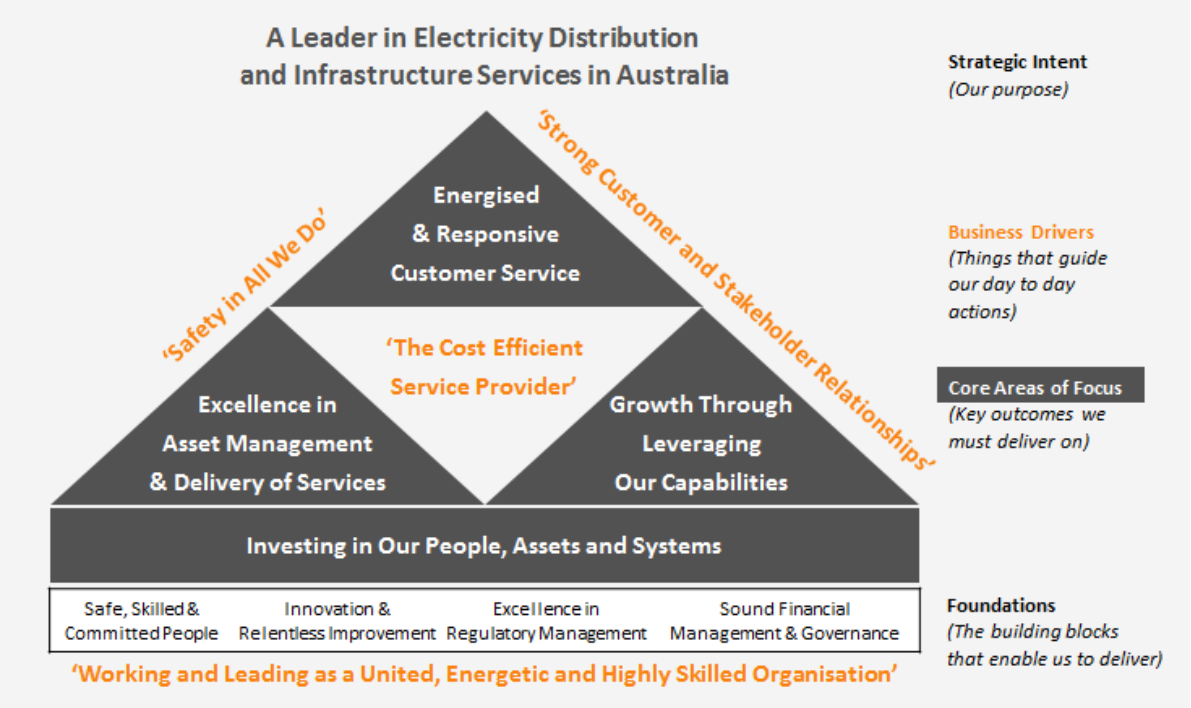


Figure 23: SA Power Networks Strategic Framework

Investment in the IT systems and services is required to achieve business objectives in our **Core Areas of Focus** and to support our business **Foundations.**

This Plan is aligned to the Core Areas of Focus and Foundations[46], which are referred to as the SA Power Networks Strategic Focus Areas throughout this document.

6.3 Technology strategies

Information Technology Strategy 2014-2018

The IT Strategy supports the SA Power Networks Strategic Plan and is updated annually. The latest IT Strategy, 2014-2020, has been developed in conjunction with this Plan in support of the SA Power Networks Strategic Plan 2014-2018. The IT Strategy 2014-2020 defines the following high-level objectives for the IT function:

1. **Maintain reliable and secure services.** Maintain reliable and secure services to the customer and the business in line with our agreed service levels
2. **Be an efficient service provider.** Ensure our services are cost effective, responsive and aligned to the long term business requirements

[46] Referred to as 'Business Foundations' in this document.

3. **Unleash the power of data.** Enable our customers and business to maximize our increased information collection for improved decision making and reporting and enable the development of a 'single source of truth'
4. **Drive the mobile transformation.** Enable our customers and business to live and work in a mobile world and support the delivery of the full set of information to and from the devices
5. **Our business and systems - working better, together.** Enabling the technology for integrated 'end to end' business processes.

Together with the business objectives and priorities defined in the SA Power Networks Strategic Plan 2014-2018 and the relevant business strategies, the IT objectives were used to guide the development of this Plan. The following table demonstrates how the implementation of the initiatives defined in this Plan will contribute to the achievement of the IT objectives. The business cases (**BCs**) referenced in the table below are described in Sections 5.1- 5.6 of this document under the relevant focus areas and summarised in Appendix D.

Table 3: Contribution of the IT Investment Plan initiatives to the achievement of the IT strategic objectives. The initiatives are identified by the relevant business cases (**BCs**). The descriptions of the business cases are provided in Appendix D.

IT objectives / Strategic Focus Areas	1. Maintain reliable and secure services	2. Be an efficient service provider	3. Unleash the power of data	4. Drive the mobile transformation	5. Our business and systems - working better, together
Energised and Responsive Customer Service	BC01 BC02a BC02	BC01 BC02a			
Excellence in Asset Management and the Delivery of Services	BC03	BC03 BC05b BC10			
Investing in our People, Assets and Systems	BC26	BC29			
Business Foundations	BC04 BC11 BC32	BC04 BC11 BC31			
Enterprise Enabling Technologies	BC09 BC17 BC21 BC14	BC12a	BC21 BC22 BC24	BC14	BC07 BC18
Applications and Infrastructure Refresh	BC27 BC28				

IT sub-strategies

A number of IT sub-strategies have also been developed in support of the detailed business strategies to address the identified technology requirements. The diagram in Appendix E details the IT sub-strategies and how each is linked to the business strategies.

Intelligent Network Technology Analysis, Strategy and Roadmap

During the 2010-2015 RCP, SA Power Networks has commenced the development of a long-term direction towards smarter operational networks and smarter meters. As part of this development, analysis was undertaken to understand how the organisation and IT in particular needed to change

to continue to effectively manage the new technologies and maintain reliable services for the long term.

To this end, in 2013 SA Power Networks undertook a top down benchmarking study using the Carnegie Mellon Smart Grid Maturity Model (**SGMM**). The objectives were to:

- understand the business objectives and intelligent network requirements;
- benchmark the whole organisation against other global and Australian distribution companies including current and future states;
- identify the gaps and the flow on implications of business requirements to IT;
- develop an Intelligent Network Technology Strategy and Roadmap to bridge the gaps and achieve the desired future state; and
- use this as input to the IT plans and business cases.

The outcomes of this study provided SA Power Networks with:

- a common understanding within the business and between the business and IT of the long term Intelligent Network objectives and requirements; and
- a detailed third party and business focused validation of the general scope and content of the IT program of works.

The outcomes of the benchmarking study informed the Intelligent Networks Technology Strategy[47] which was used as one of the key inputs into the development of this Plan.

6.4 An integrated approach to business improvement

During the 2010-2015 RCP, SA Power Networks recognised the need to move away from the incremental change to business processes (which has occurred over many years) to a more integrated 'end state' approach to data, systems, processes and people which is linked to service outcomes and business objectives**. Our organisation's core business processes are spread across multiple IT systems creating hurdles to delivering business requirements and responding to customer needs.**

The SA Power Networks business strategies highlight that:

- It is now imperative that we invest in the business systems to establish a strong and enduring linkage of data relating to assets, customers and work to:
    - deliver the excellence in asset management;
    - enable the delivery of the services that customers are expecting now and in the future; and
    - support the ongoing prudent and efficient operation of our business.
- Without the proposed investment in people, data, systems and processes SA Power Networks will not be able to satisfactorily meet the challenges of the changing environment and provide the expected outcomes to our customers and our owners in the most cost-efficient way.
- By embracing the opportunities from digital technologies over the next few years SA Power Networks will be well placed for the long term. Without this investment there is a risk that services provided to customers will be below expectations and lag developments in other industries and across Australia.

The recent investment in network infrastructure and customer facing developments combined with the significant changes to people, data, systems and processes warrants an integrated approach to business improvement. SA Power Networks recently established a framework and associated organisational arrangements to ensure the effective management of these changes, including:

[47] Litmus Group, *Intelligent Network Strategy and Roadmap*, December 2013.

- the development of an enterprise architecture aligned to industry standards and good business practice which provides the enterprise roadmap for our preferred 'future state';
- establishment of the Corporate Portfolio Management and Enterprise Architecture groups to facilitate the management of all change initiatives; and
- progressive implementation of a corporate-wide approach to quality and continuous improvement.

To establish the future technology roadmap in support of the SA Power Networks Future Operating Model 2013-2028, a number of reviews were conducted across the organisation to understand future business and technology requirements. These reviews included an assessment of our core enterprise system, SAP[48], the Intelligent Network[49] maturity assessment[50] and the Application Rationalisation options assessment[51].

The next step was the development of an organisation-wide Enterprise Blueprint[52,53] (Figure 24) in order to describe how future processes, their users and the relevant informational requirements are to be supported by core business applications in order to maximise business efficiencies, remove silos and data duplication, and improve information quality and integrity. The Enterprise Blueprint was developed with the following two key objectives in mind:

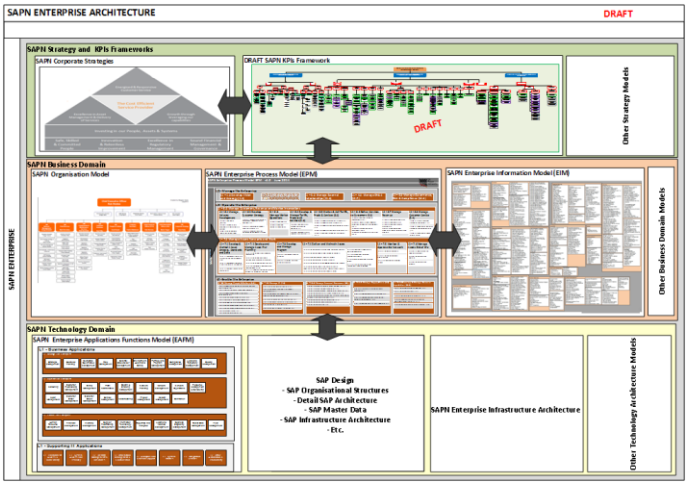


Figure 24: SA Power Networks Enterprise Blueprint. Note: A larger version of this diagram is provided in Appendix C

- Leverage SAP to its full potential by utilising the available functionality to a greater extent to support business processes and rationalising the existing business applications into a smaller set centred on SAP.
- Document the target state architecture for SA Power Networks to drive future business and technology investment decisions.

The outcomes of the Enterprise Blueprint were used as the key inputs into this Plan. All initiatives defined in this Plan are aligned with the Enterprise Blueprint and support end-to-end business processes that are designed to benefit our customers, community and employees.

[48] CAP Gemini, *SA Power Networks SAP Asset Management Development Analysis,* 9 January 2013.
[49] An Intelligent Network, commonly referred to as "Smart Grid" or "two-way network", incorporates the existing power distribution layer, a communication layer to provide real-time intelligence on the operation of the network, and an application layer in which new value-added products and services can be developed and extended to customers.
[50] Litmus Group, *SA Power Networks Intelligent Network Strategy and Roadmap,* 2013.
[51] Litmus Group, *Application Rationalisation: Current Landscape and Options,* 2013.
[52] SA Power Networks, *SAPN Enterprise Architecture: Final Enterprise Blueprint,* v.1.0, 12/06/2014.
[53] SA Power Networks, *Project Document: Application Architecture,* v.1.0, 12/06/2014.

7. IT Capital program of work

Table 4 presents the forecast IT Capital expenditure broken down into recurrent and non-recurrent expenditure.

Table 4: IT Capital expenditure forecast, real $million (FY13/14)

Forecast cost, $'000,000	Business Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Total 2015-20
Capital	**IT**	71.85	52.83	50.24	59.72	52.29	**286.92**
	Non-IT	8.36	14.33	8.61	7.50	4.23	**43.02**

7.1 Variation to the 2010-15 RCP

The variation in the **non-recurrent IT Capital expenditure** is due to the following key factors:

- Lifecycle changes of our core systems as two of major systems, CIS OV and SAP, will require major investment in the 2015-2020 RCP:
  - CIS OV and related applications are approaching their end of life and needs to be replaced before 2021.
  - SAP was implemented 20 years ago and needs a major refresh in order to meet the current and future business requirements.
- New Regulatory and legal compliance requirements including the Regulatory Information Notice (**RIN**) reporting, Australian Privacy Principles and Harmonisation legislation.
- New technology requirements brought about by the changes in the external environment (e.g. changes in the consumer preferences, regulatory changes, environmental changes, technology changes) and the internal SA Power Networks environment (e.g. changes in the business operating model). These factors include:
  - Improved SA Power Networks' asset management capability required to ensure long-term sustainable performance and condition of the assets. The associated IT requirements include improved asset data management and governance, improved visualisation capability of spatial asset data.
  - Increased expectations of SA Power Networks' customers regarding levels of service and quality of information. The IT implications include improved customer data management capabilities and the provision of customer self-service reporting options.
  - Progressive roll-out of smart meters and other demand-side participation technologies which require increased data storage, processing and analysis capabilities.
  - Increased level of cyber security threats that require greater investment in the IT security systems and processes to ensure corporate and operational systems and information are protected in an event of an attack.
- Changes to the IT operating model required to support the increased volume of capital work.

The variation in the **recurrent IT Capital expenditure** is due to the following key factors:

- Increased support requirements for key applications and infrastructure owing to the greater than anticipated growth of the business applications portfolio in the current RCP and the increased criticality of these applications for business operations.
- Strengthened demand for systems reliability, IT support and user training caused by the increased reliance on IT based information and systems.
- An increase in reliance on mobile computing and the associated expectation of standardisation between operating locations and environments.

- An increase in the level of required software upgrades and equipment renewals in line with supplier recommendations, reflecting the upgrade requirements of the additional hardware and applications installed during the current RCP.
- The compounding effects of the introduction of new business systems and capabilities on the IT support requirements, including additional data storage, network capacity, disaster recovery and integration with the existing systems.

Figure 25 shows the breakdown of the IT Capital expenditure into the SA Power Networks Strategic Focus Areas in comparison with the 2010-2015 RCP actual spend. The significant increase in the 'Energised and Responsive Customer Service' category is due to the CIS OV replacement and laying the foundations for Tariff and Metering changes.

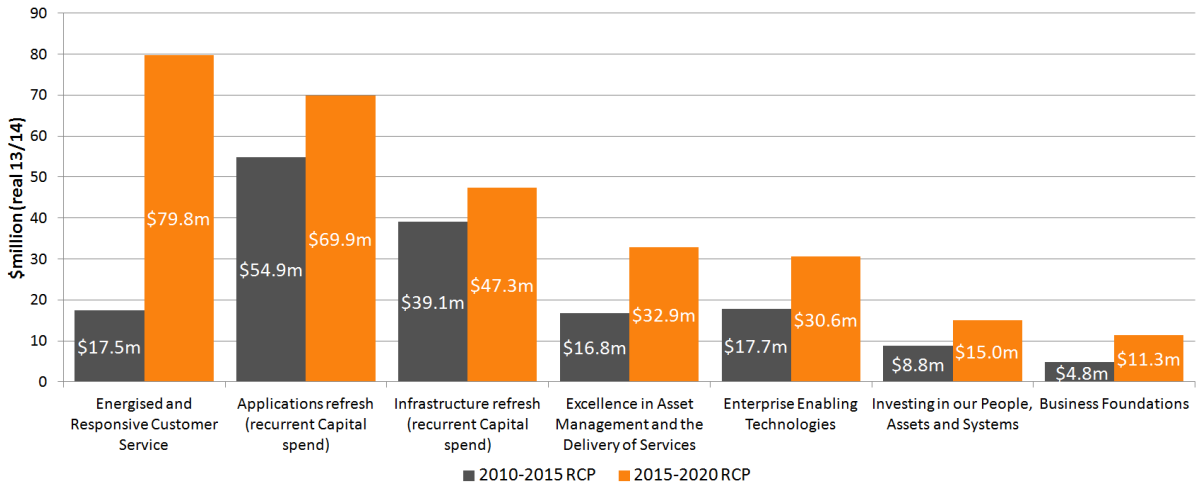


Figure 25: The IT Capital expenditure breakdown (excluding non-IT costs) into the strategic focus areas over the 2015-2020 RCP compared to the 2010-2015 RCP actuals. All costs are in real $ (FY13/14).

8. IT Operating expenditure

The forecast costs associated with the ongoing operation of the IT function are summarised in Table 5[54].

Table 5: IT Operating expenditure forecast, real $million (FY13/14)

Forecast cost, $'000,000	Business Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Total 2015-20
Operating	**IT**	31.01	36.78	39.04	39.90	41.16	**187.89**

The forecast Operational expenditure includes:

- The baseline IT Operating expenditure in 2013/14
- Increases associated with the Capital program of work

The IT Transformation program undertaken in 2013-2014 reduced the reliance on contractors and consultants in the operational work from approximately 50% to 20%. This resulted in operational cost efficiencies due to internal labour rates being lower than external rates. Additional efficiencies in our operating costs will result from decommissioning of applications, rationalisation of support arrangements and process improvements planned as part of the IT Capital program of work. **All associated operational cost savings have been factored into our Operating expenditure forecast.**

These cost efficiencies are offset by the growth in IT Operating expenditure resulting from the proposed Capital investment. The overall increase in the IT Operating expenditure compared to the 2013/14 baseline will be $65.2m over the 5-year RCP. The additional IT operating expenditure is required for the ongoing maintenance and support of the systems and infrastructure to be implemented as a result of the IT capital investment program. As detailed in the 2015-2020 SA Power Networks Regulatory proposal, this increase in the IT operating costs will be offset by the operational cost savings to the total of $24.5m, comprising of $20.5m to be realised generally across SA Power Networks and $4.0m specifically in Field Services and Networks Management. Additionally, the operational cost avoidance of $35.6m[55] during the 2015-2020 RCP has been estimated based on the analysis of individual business cases. We have investigated the alternative service delivery models and solution architectures such as Cloud, Software as a Service and Infrastructure as a Service and utilised these approaches where improved operational efficiencies could be achieved at an acceptable risk level.

The breakdown of the IT Operating expenditure uplift by the IT initiatives is provided in the table below.

Table 6: The breakdown of the IT Operating expenditure uplift by the IT initiatives, real $ (FY13/14)

Ref	Initiative	IT Opex uplift, $m	Primary NER objective(s)	Regulatory Driver detail
Energised and responsive customer service				
BC01	CIS and CRM	7.57	6.5.6(a)(3) – Maintain Reliability of Supply 6.5.6(a)(2) – Compliance / Regulatory	• Lifecycle stage of one of our major systems - end of life billing system • Meeting the NEM/ Jurisdictional Regulatory obligation
BC20	Tariff and Metering	5.65	6.5.6(a)(2) – Compliance / Regulatory	• Customer tariff and metering market changes

[54] The 2013/14 baseline includes Standard and Alternative Controls expenditure, National Markets (FRC) expenditure and unregulated expenditure.

[55] High-level estimate only, based on the analysis of benefits presented in individual business cases.

Ref	Initiative	IT Opex uplift, $m	Primary NER objective(s)	Regulatory Driver detail
BC02a	Customer Facing Technology	1.90	6.5.6(a)(3) – Maintain Reliability of Supply	• Changed customer preferences
BC02	Customer Call Management System Replacement	1.18	6.5.6(a)(3) – Maintain Reliability of Supply	• End of life call management system
Excellence in Asset Management and Delivery of Services				
BC05b	Project, Program and Portfolio Management	2.78	6.5.6(a)(3) – Maintain Reliability of Supply	• Cost avoidance in the core areas of the business[56]
BC03	Enterprise Asset Management	2.28	6.5.6(a)(2) – Compliance / Regulatory	• Foundation for RIN reporting
BC16	Field Force Mobility	1.47	6.5.6(a)(3) – Maintain Reliability of Supply	• Cost avoidance in the core areas of the business • Compliance with reporting requirements around safety
BC10	Intelligent Design Management System	.84	6.5.6(a)(3) – Maintain Reliability of Supply	• Compliance and reporting requirements around safety in design
BC05a	Supply Chain	.21	6.5.6(a)(3) – Maintain Reliability of Supply	• Cost efficiency due to improved inventory usage
Investing in our People, Assets and Systems				
BC26	Enterprise Information Security	9.86	6.5.6(a)(2) – Compliance / Regulatory	• Compliance with Privacy Act • Mitigate increased risk of cyber attacks
BC14	Enterprise Mobility	5.72	6.5.6(a)(3) – Maintain Reliability of Supply	• Foundation for the Asset Management, Field Force Mobility • Support interaction with customers and vendors
BC29	IT Management and Operations	2.98	6.5.6(a)(3) – Maintain Reliability of Supply	• Lifecycle – end of life Service Desk Management System • Support new IT Operating model
Business Foundations				
BC11	People and Culture Improvements (HR Systems)	1.61	6.5.6(a)(3) – Maintain Reliability of Supply	• Foundation for the RIN reporting and the asset management improvements • Improved time entry to enable accurate calculation of the cost of assets • Compliance with the skills and training accreditation requirements
BC04	Financial Management	.54	6.5.6(a)(2) – Compliance / Regulatory	• Foundation for the RIN reporting and the asset management improvements
BC31	Governance, Risk, Regulation and Compliance	.41	6.5.6(a)(2) – Compliance / Regulatory	• Enable timely Harmonisation legislation and other regulatory and legal compliance reporting and

[56] As outlined in Section 5.2, SA Power Networks business departments require more efficient systems and processes to avoid cost increases associated with the increased volume of asset maintenance and replacement work forecast for the 2015-2020 regulatory period.

Ref	Initiative	IT Opex uplift, $m	Primary NER objective(s)	Regulatory Driver detail
				avoid costs associated with manual reporting
BC32	RIN Reporting	.13	6.5.6(a)(2) – Compliance / Regulatory	• RIN reporting requirements
Enterprise Enabling Technologies				
BC18	Enterprise Integration	5.97	6.5.6(a)(3) – Maintain Reliability of Supply	• Minimise future Capex costs associated with building or changing 'point to point' integration solutions • Support the transition to the 'end to end' business process model from siloed functionality
BC17	Data Centre Consolidation	4.88	6.5.6(a)(3) – Maintain Reliability of Supply	• Capex/Opex tradeoff
BC22	Data Management	2.74	6.5.6(a)(2) – Compliance / Regulatory	• Foundation for RIN reporting • Compliance with Privacy law • SA Power Networks' business departments, our customers and regulatory bodies require accurate information, more of it, and in a timelier manner
BC12a	Unified Communications	2.49	6.5.6(a)(3) – Maintain Reliability of Supply	• Lifecycle – upgrade and extension of the phone business communication system • The extension is required to add video and instant messaging capabilities which will result in cost savings in other areas of the business
BC09	SAP Foundation	2.33	6.5.6(a)(3) – Maintain Reliability of Supply	• Lifecycle stage of our ERP system – major refresh
BC07	Enterprise Architecture Tools	1.78	6.5.6(a)(3) – Maintain Reliability of Supply	• Foundation toolset for enabling the management of the 'end to end' enterprise business processes
BC24	Enterprise Information Management	1.56	6.5.6(a)(2) – Compliance / Regulatory	• Foundation for RIN reporting • SA Power Networks' business departments, our customers and regulatory bodies require accurate information, more of it, and in a timelier manner
BC21	Business Intelligence Enablement	.70	6.5.6(a)(3) – Maintain Reliability of Supply	• Foundation for RIN reporting, vegetation management reporting, customer service standards reporting and legal reporting

9. IT Investment Plan implementation

9.1 Procurement and delivery model

In the past several years, the IT function has invested in improving its capability and processes for procuring and delivering its Capital program of work. In parallel, initiatives were implemented at the corporate level to improve corporate governance over major programs of work undertaken by the organisation. The improved capabilities, processes and governance structures will help us meet the challenges associated with the increased volume of work and ensure that our proposed Capital program:

- is implemented efficiently;
- meets stakeholder expectations; and
- delivers tangible benefits to the business and to the consumers of SA Power Networks' services.

Figure 26 provides a summary of the recent initiatives undertaken to improve our procurement and delivery model. These initiatives can be broadly divided into:

- **Sourcing and vendor management** to ensure *commercial deliverability* of our Capital program
- **Portfolio management and investment governance** to ensure the *right projects are implemented at the right time in the right way* to maximise the expected benefits

Sourcing and vendor management

We understand the challenges associated with the increased volume and complexity of the IT work and are moving from predominantly in-sourced delivery model to the fundamentally different approach of utilising external partners and industry experts to deliver programs of work. To ensure this approach is successful, we have put in place the following key capabilities.

Sourcing model

In 2013, we developed a Request for Quotation for the Vendor Panel services and subsequently selected the panel of IT service providers following the robust selection and evaluation process. Outsourcing of Capital work to the Vendor Panel has commenced in 2014 and is gradually moving from outsourcing of individual projects to outsourcing of programs of work.

Vendor performance management

Strong vendor performance management is critical to ensure the efficiency of our sourcing model and quality of the deliverables. The measures currently in place include documented outcomes and acceptance criteria, agreed performance measures and periodic reviews against these criteria. We are also establishing a Commercial Steering Group and a Stakeholder Group to govern vendor performance at the executive level.

Vendor risk management

To mitigate increased risks commonly associated with outsourcing programs of work to external providers, including operational risks, risks to information confidentiality and risks to business continuity, we are developing a number of risk mitigation measures such as targeted contract clauses, joint risk management sessions and improvement of our internal processes.

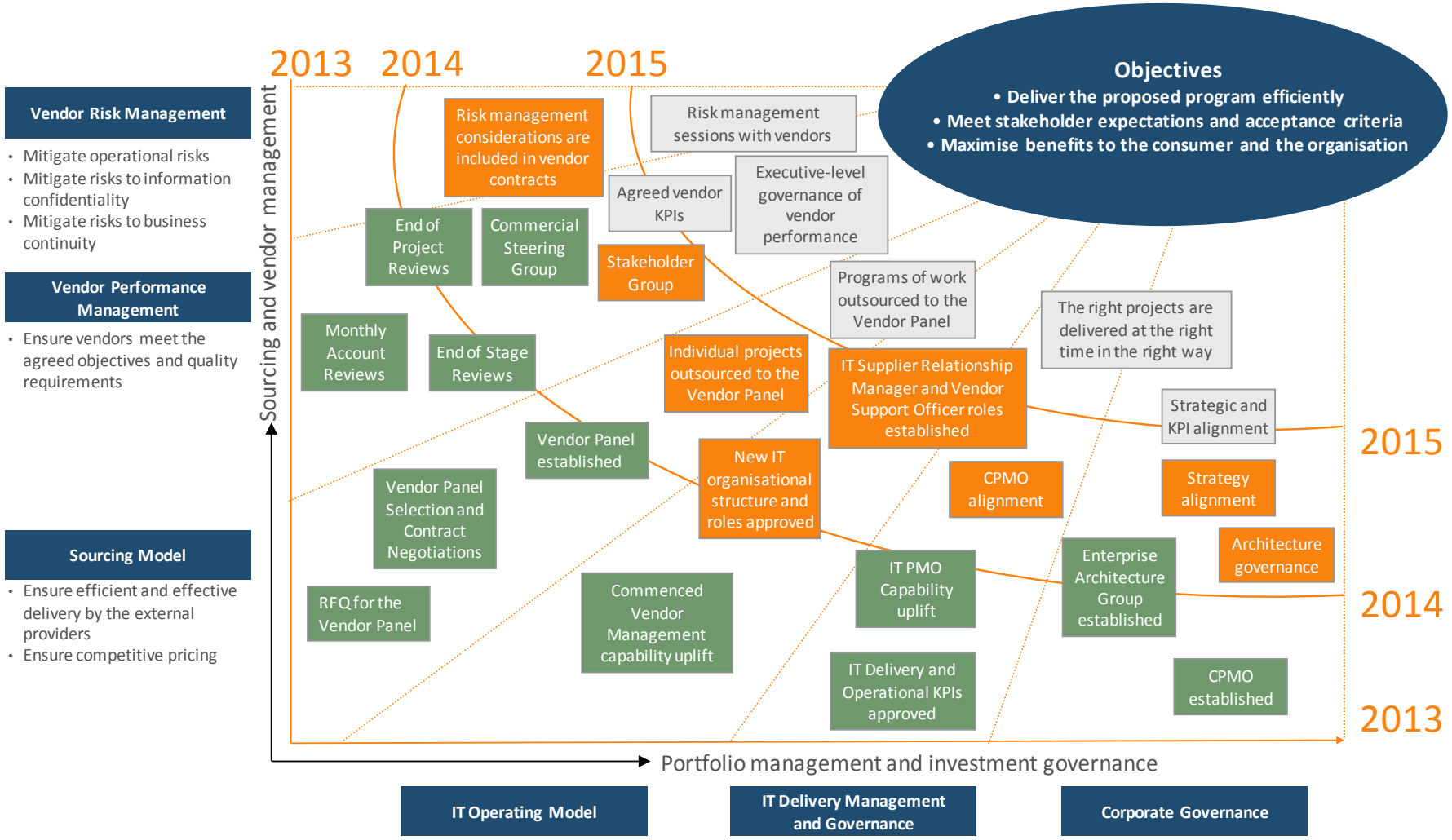


Figure 26: IT Capital program procurement and delivery model

Portfolio management and investment governance

IT Operating model

The IT Operating Model was introduced in 2013/14 as part of the IT Transformation Program and is critical to the execution of this Investment Plan to facilitate the change of IT function's role from 'service provider' to 'business enabler'. The IT Transformation Program put in place a new organisational structure aligned to the industry-standard "Plan, Build, Run, Monitor" model[57] and a new management team with diverse industry experience. The roles in the new organisational structure were filled through a competitive process that assessed the competency of each applicant against the changed business requirements.

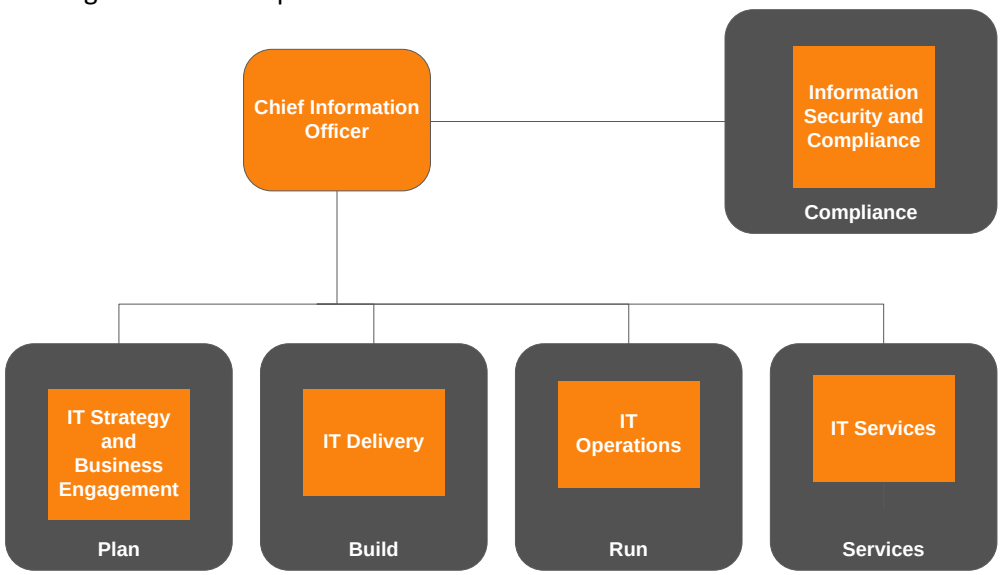


Figure 27: IT Organisational structure

Our IT Organisational structure is aligned to our operating model and is designed to ensure that we:

- improve the service experience for our customers;
- enhance business engagement;
- increase the creation and use of strategic partnerships with external service providers;
- improve the management and governance of projects, via the formalised IT Project Management Office (**IT PMO**) function with alignment to the Corporate Portfolio Management Office (**CPMO**); and
- establish a more appropriate balance between the use of supplementary labour and the IT Services Panel.

IT Delivery Management and Governance

The delivery of IT capital projects is the responsibility of the two IT functions with distinctly different roles:

- The IT Delivery function is directly responsible for undertaking the approved capital work within the agreed time and budget requirements.
- The IT PMO works in partnership with the CPMO and business areas to apply best practice project management processes and tools to ensure that the IT delivers the right projects, at the right time, in the right way to the business. The ITPMO is also responsible for scheduling of IT capital work, monitoring its progress and reporting to the Board and EMG.

The involvement of ITPMO in the delivery of IT capital work enables SA Power Networks to effectively and efficiently deliver IT projects in a way that is fully aligned with our strategic and internal IT goals

[57] Refer, for example, COBIT 5: Enabling Processes, ISACA, 2012, p. 23.

and objectives. We will continue to drive the consistent application and embedding of the Prince2 method in all aspects of project delivery to drive consistency and maximise success of the projects.

Corporate governance

Key to achieving alignment between corporate strategy and delivery, is the CPMO which reports directly to Executive Management Group with the ITPMO and the IT Business Engagement Partners being the conduit between IT, the business units and the CPMO. This ensures that the CPMO and ITPMO are executing the right projects at the right times and that operationally, our IT service delivery meets the needs of the business.

9.2 IT portfolio plan

During the IT Portfolio development, strategic alignment and prioritisation, we followed the organisation's standard processes for the Capital expenditure development and approval.

A business-led prioritisation has been undertaken to ensure the IT program of work is aligned to the business strategy and provides the right solutions and services to our business and customers at the right cost. Our robust bottom-up approach to the expenditure forecast development was supplemented by a top-down strategy alignment and rigorous prioritisation to ensure only the necessary minimum of the initially proposed program is put forward. The prioritised list of investments will be approved by the Board.

We have undertaken a detailed analysis of the interdependencies between the initiatives to identify the foundational capabilities that need to be implemented in order to deliver the required outcomes. We have also aligned the timing of related initiatives so that the efficiencies of implementing them together could be realised. The roadmap of the IT Capital initiatives is provided in Appendix F.

Our CPMO and ITPMO will work together to ensure that the portfolio is actively managed and adjusted as necessary to adapt and evolve with the inevitable change that will occur over the next 5 years to ensure that work is prioritised and delivered with our long term strategy and objectives at the forefront.

9.3 Sourcing and Resourcing Plan

We have developed the IT Sourcing and Resourcing Plan that will enable us to deliver the proposed program of work with the optimal mix of internal resources, external contractors and vendor services, in line with industry benchmarks. The IT Transformation program implemented in 2013-2014 established a new IT Operating Model to improve efficiency and provide the capability and flexibility needed to deliver the enhanced program of work. The IT Sourcing and Resourcing Plan proposes to deliver approximately 50% of work via outsourced services , while maintaining the 80/20 mix of internal employees and supplementary labour, in line with the objectives of our IT Operating Model. This 50% represents a challenging but achievable target with respect to the KPMG 2013 Australian Utilities benchmarks, which shows a mean of 24% and a maximum of 74%.

This overall outsourcing level is comprised of approximately 65% of capital project effort being delivered by external service providers and 30% of IT operations effort being delivered by managed services. Despite the volume of the work to be delivered by external service providers, given the size of the program of capital projects and forecast uplift in IT operational functions, we will grow the size of our internal IT function. This will ensure we do not exceed the proposed levels of outsourcing in order to maintain an appropriate risk profile by limiting the inherent risks associated with outsourcing of operations and ensuring we have a suitable contribution by internal staff in the delivery of capital projects to maximise overall chances of successful project outcomes.

Our approach to sourcing and resourcing provides a balance between maximising the use of external services that specialise in capabilities, skills and experience that SA Power Networks needs to deliver the forecast capital and operating forecast, and managing the inherent risk associated with outsourcing via the IT Operating model put in place by the 2013/14 IT Transformation program and the proposed outsourcing level limits.

10. Document authorisation and history

10.1 Template

This document is based on template **PMM_T_009** issued January 2013.

10.2 Revision history (key revisions)

Date	Version	Author	Description of Change/Revision
18/03/2014	0.1		
24/06/2014	0.12		
13/10/2014	0.14		
16/10/2014	1.0		
20/10/2014	1/1		

10.3 Approvals

Name and Title	Role	Signature and Date[58]
	Head of Regulation	Approved on 22/10/2014
	Chief Information Officer	Approved on 20/10/2014
	IT Regulatory Submission Manager and IT Business Partner, Customer	Approved on 20/10/2014

10.4 Distribution (key revisions)

Date	Version	Name and Title	Purpose
28/03/2014	0.4		Initial review as part of External Assurance for the IT regulatory submission.
28/03/2014	0.4		Reset alignment
28/03/2014	0.4		Further input, feedback and alignment with the IT sub-strategies
12/06/2014	0.11		IT Leadership Team review
12/06/2014	0.11		IT Leadership Team review
12/06/2014	0.11		IT Leadership Team review
12/06/2014	0.11		IT Leadership Team review
12/06/2014	0.11		IT Leadership Team review
12/06/2014	0.11		IT Leadership Team review

[58] Signed copy available on request

Date	Version	Name and Title	Purpose
16/06/2014	0.11		Preliminary review
25/06/2014	0.12		Strategic alignment
25/06/2014	0.12		Reset alignment
25/06/2014	0.12		Strategic and Reset alignment
22/08/2014	0.13		Reset alignment
16/10/2014-20/10/2014	1.0, 1.1		Final review and feedback

10.5 References

The following documents were referenced in completion of this document:

Ref	Document Name	Date	Version	Author
1.	SA Power Networks Strategic Plan 2014–2018	November 13	N/A	SA Power Networks
2.	SA Power Networks Future Operating Model 2013-2028	January 2014	N/A	SA Power Networks
3.	The South Australian Distribution Network: Directions and Priorities 2015 to 2020	May 2014	N/A	SA Power Networks
4.	Information Technology Strategy 2014-2020	August 2014	1.0	
5.	IT Expenditure forecasting methodology and approach	August 2013	1.2	
6.	Expenditure Forecasting Methodology 2015 Reset Project	November 2013	N/A	
7.	SA Power Networks SAP Asset Management Development Analysis	9 January 2013	N/A	
8.	SAPN Enterprise Architecture: Final Enterprise Blueprint	12/06/2014	1.0	
9.	Project Document: Application Architecture	12/06/2014	1.0	

Ref	Document Name	Date	Version	Author
10.	Application Rationalisation: Current Landscape and Options		N/A	Litmus Group
11.	Customer Services Strategy		N/A	SA Power Networks
12.	Customer Technology Plan	July 2014	1.4	SA Power Networks
13.	SA Power Networks EAM Roadmap	28/01/2014	4.4	Vesta
14.	Intelligent Network Strategy and Roadmap	December 2013	N/A	Litmus Group
15.	KPMG 2013 Utilities ICT Benchmarking - SA Power Networks	7/03/2014	N/A	KPMG
16.	IT Sourcing and Resourcing Plan 2015-2020	20/10/14	2.0	J. Needham
17.	SA Power Networks Enterprise Mobility Strategy	February 2014	4.0	Litmus Group
18.	Data Centre Strategy	June 2013	1.0	Ernst & Young
19.	Independent analysis of arrangements between SA Power Networks and CHED Services	October 2014	N/A	KPMG
20.	Independent Prudence and Efficiency Review of the 2015-20 Regulatory Technology Submission	October 2014	N/A	KPMG
21.	Flexible Load Strategy	July 2014	N/A	SA Power Networks
22.	**Business cases:**			
BC01	SA Power Networks CIS & CRM Business Case	31/03/14	3.2 Final	SA Power Networks
BC02	Customer Call Management Replacement Solution (**CCMS**)	08/04/14	1.0	SA Power Networks /SMS
BC02a	Customer Facing Technologies	03/10/14	1.3	SA Power Networks
BC03	Enterprise Asset Management	01/10/14	2	SA Power Networks
	Enterprise Asset Management - Category Analysis RIN		1	SA Power Networks
	Enterprise Asset Management – Vegetation Management		0.1	SA Power Networks
BC04	Financial Management	13/10/14	4	SA Power Networks
BC07	IT/OT/Tel Interworking - Enterprise Architecture Tools	28/03/14	1	SA Power Networks
BC05a	Supply Chain		41	SA Power Networks
BC05b	Project, Program and Portfolio Management	15/10/14	4	SA Power Networks
BC16	Field Force Mobility	8/10/14	1.2	SA Power Networks
BC09	SAP Foundation	18/03/14	3.4	SA Power Networks
BC10	Intelligent Design Management System	13/10/14	1	SA Power Networks
BC11	People & Culture	Oct 2014	4	SA Power Networks
BC12a	Unified Communications	17/04/14	1.2	SA Power Networks
BC14	Mobility Technology Foundations	7/04/14	0.8	SA Power Networks
BC17	Data Centre	13/10/14	1.0	SA Power Networks

Ref	Document Name	Date	Version	Author
BC18	Integration Foundations	30/09/14	.15	SA Power Networks
	Tariff and Metering Business Case	22/09/14	1.0	SA Power Networks
BC21	Business Intelligence Enablement	13/10/14	3.0	SA Power Networks
BC22	Data Management	Oct 14	1.0	SA Power Networks
BC24	Information Management: Enterprise Content Management Business Case	30/09/14	2	SA Power Networks
BC26	Information Security Foundation	30/07/14	0.5	SA Power Networks
BC29	IT Management and Operations	15/10/14	1.0	SA Power Networks
BC31	Governance, Risk, Regulation and Compliance	30/07/14	0.9	SA Power Networks
BC32	RIN Reporting	30/07/14	1.0	SA Power Networks
BC27	Technical Operations	15/08/14	2.2	SA Power Networks
BC28	IT Applications	08/10/14	4.6.2	SA Power Networks

10.6Acronyms and abbreviations

Acronym / Abbreviation	Definition
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
CAD	Computer-aided Design
CBRM	Condition-based Risk Monitoring
CEP	Customer Engagement Program
CHED Services	CKI/HEI Electricity Distribution Services Pty Ltd Services
CIO	Chief Information Officer
CIS	Customer Information System
CIS OV	Customer Information System 'Open Vision'
COAGEC	Council of Australian Governments Energy Council
COBIT	Control Objectives for Information and related Technology
CPMO	Corporate Project Management Office
CRM	Customer Relationship Management
EMG	Executive Management Group
FOM	Future Operating Model
FRC	Full Retail Contestability
GIS	Geographic Information Systems
HR	Human Resources
IT	Information Technology

Acronym / Abbreviation	Definition
ITIL	Information Technology Infrastructure Library
ITSM	IT Service Management
IVR	Interactive Voice Response
NECF	National Energy Customer Framework
NER	National Energy Rules
OMS	Outage Management System
OT	Operational Technology
PMO	Project Management Office
PPM	Portfolio Project Management
RCP	Regulatory Control Period
RIN	Regulatory Information Notice
Tel	Telecommunications

Appendix A - IT Investment Plan development stages and milestones

The key stages and milestones of the IT Investment Plan development process are shown in Figure 28.

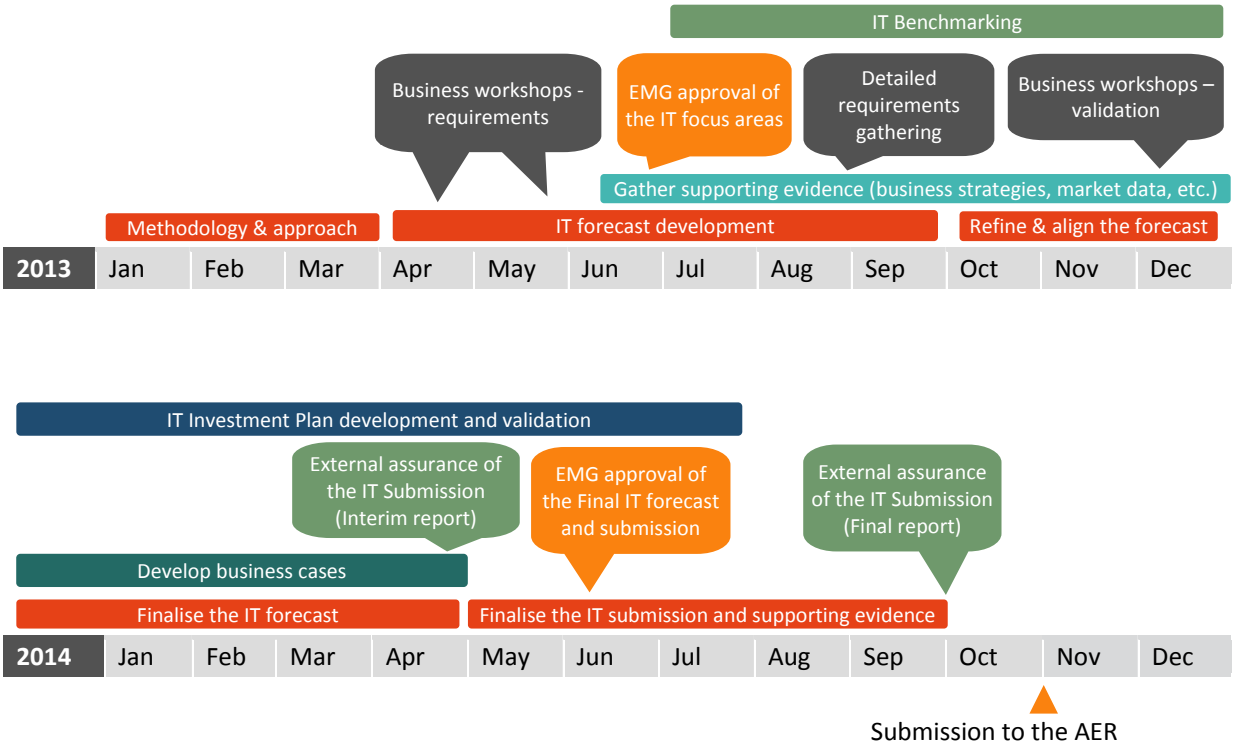


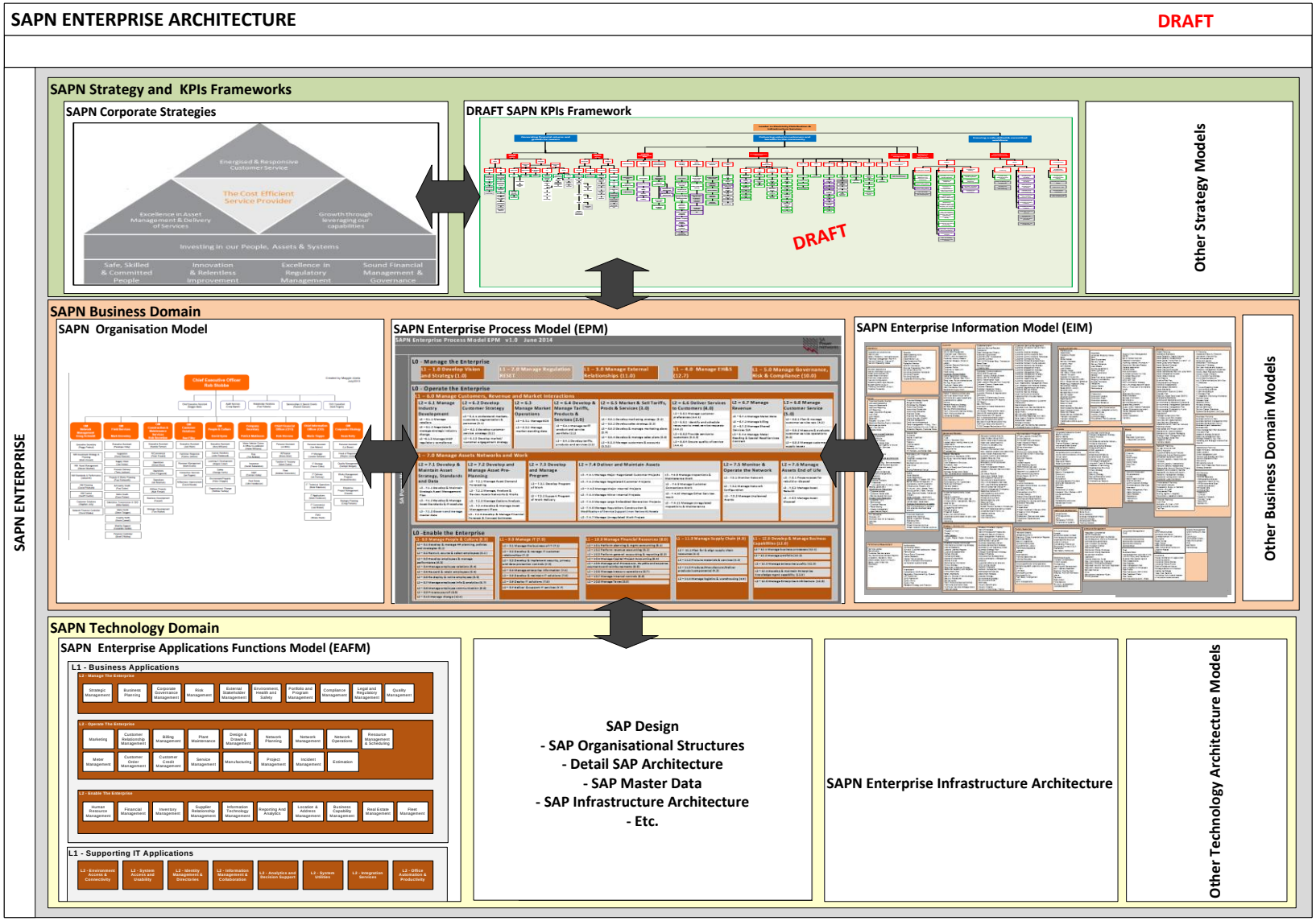
Figure 28: Key stages and milestones in the IT Investment Plan development process

Appendix B - Lessons learned

The lessons learned from the 2010-2015 IT Regulatory submission development and subsequent implementation of the approved program of work are summarised below. These lessons learned were collected during in 2013 in a series of workshops and interviews that involved the IT Management team and the representatives from other areas of the business.

Key Learning	Business Response	Technology Response
We need to be more responsive to our customers' desire to interact via multiple channels and have access to accurate, timely and relevant information	• Customer Engagement and Customer Strategy	• Customer Technology Plan and Customer Facing initiatives
Greater business focus, alignment and agility is required to adapt to an ever changing integrated business environment	• Future Operating Model (**FOM**) • Business strategies aligned with the FOM and SAP Power Networks Strategic Plan	• Future Technology Operating Model • IT Strategy and Technology sub-strategies aligned with business strategies • Business-wide consultation
We need to be more agile to accommodate rapid changes in technology	• Increased consultation with technology experts	• Investing in enabling technologies • Use of industry-leading research (e.g. Gartner)
Additional Change Management effort is required to fully embed business and technology changes	• New organisational Change Management function • Enterprise CPMO to monitor	• Business and Technical Projects include change management activities
Greater benefit can be achieved by identifying and implementing systems to support end-to-end business processes	• Enterprise CPMO including Architecture, Process and Data	• IT Architecture Group • Integration & Information Management strategy

Appendix C – Enterprise Blueprint



Appendix D – IT investments themes and initiatives

Business cases have been developed and endorsed by the business owners for each of the initiatives listed below. The business case approvers are listed in Appendix G.

Energised and responsive customer service

Ref[59]	Theme / initiative	Description	Primary NER objective[60]	Driver [61]	Capex[62]	Opex Impact[63]
	Customer Service					
BC01	CIS OV Replacement / CRM	Replace legacy billing and legacy customer related systems with a modern flexible billing engine and associated single view of customer system	6.5.7(a) (3) 6.5.6(a) (3) 6.5.6(a) (2)	E1, E2, E3, E5	$50.2m	$7.6m
BC02a	Customer Facing Technologies	Improve communication channels and information to customers	6.5.7(a) (3) 6.5.6(a) (3)	E1, E3, E5	$7.7m	$1.9m
BC02	Customer Contact Management System	Replace legacy call management system	6.5.7(a) (3) 6.5.6(a) (3)		$.8m	$1.2m
	Demand-Side Participation					
BC20	IT Support for Tariff and Metering	IT costs associated with the introduction of cost reflective tariff and advance metering capabilities	6.5.7(a) (2) 6.5.6(a) (2)	E2, E5, T4, T5	$21.1m	$5.7m

[59] Business case reference
[60] The NER expenditure objectives (capital and operational) that are most relevant to that particular initiative. Refer to the business cases for the complete list of the NER expenditure objectives this initiative is contributing to
[61] The external, internal and technology drivers relevant to this initiative. Refer to Section 6.1- Change drivers for the description of these drivers
[62] The estimated Capital costs required during the 2015-2020 RCP, real $ (FY13/14)
[63] The estimated total Operational uplift required during the 2015-2020 RCP, real $ (FY13/14)

Excellence in Asset Management and Delivery of Services

Ref	Theme / initiative	Description	Primary NER objective	Driver	Capex	Opex Uplift
	Excellence in Asset Management					
BC03	Enterprise Asset Management	Enhance and upgrade capabilities into an integrated enterprise approach to asset management including improvements in vegetation management	6.5.7(a) (2) 6.5.6(a) (2)	E5, E6, E7, I1, I2	$13.1m	$2.3m
BC10	Intelligent Design Management System	Consolidate design tools and implement a standardised design tool	6.5.7(a) (3) 6.5.6(a) (3)	E5, E6, E7, I1, I2, I5	$7.4m	$.8m
	Excellence in Delivery of Services					
BC05a	Supply Chain	Enable the visibility and management of inventory across depots and warehouses. Extend our data analytics and supplier management capabilities	6.5.7(a) (3) 6.5.6(a) (3)	E5, E6, E7	$3.1m	$3m
BC05b	Project, Program and Portfolio Management	Enterprise wide tool to view and manage all components of portfolios, programs and projects (i.e. scheduling, resource planning)	6.5.7(a) (3) 6.5.6(a) (3)	E5, E6, E7	$2.9m	$2.8m
BC16	Field Force Mobility	Significantly enhance existing field mobility capabilities	6.5.7(a) (3) 6.5.6(a) (3)	E5, E6, E7, I3, T1	$6.4m	$1.5m

Investing in our people, assets and systems

Ref	Theme / initiative	Description	Primary NER objective	Driver	Capex	Opex Uplift
	Investing in our systems					
BC26	Enterprise Information Security	Foundation enterprise security control capabilities	6.5.7(a) (2) 6.5.6(a) (2)	T1	6.69	$10m
BC14	Enterprise Mobility	Implement a cohesive, secure and standard IT platform for mobility	6.5.7(a) (3) 6.5.6(a) (3)	E6, E7, I3, T1	2.23	$3m
	Control and manage technology costs					
BC29	IT Management and Operations	Implement good practice IT management capabilities (i.e. Application Lifecycle, Configuration)	6.5.7(a) (3) 6.5.6(a) (3)	All	6.12	$3m

Business Foundations

Ref	Theme / initiative	Description	Primary NER objective	Driver	Capex	Opex Uplift
	Sound financial management and governance					
BC04	Financial Management	Upgrade current financial management systems for compliance and capabilities (i.e. existing General Ledger, Fixed Asset register)	6.5.7(a) (2) 6.5.6(a) (2)	E5	$4.7m	$.5m
	Safe, skilled and committed people					
BC11	HR Systems	Single view of employees and organisational structure and additional capabilities required for managing employees and skills	6.5.7(a) (3) 6.5.6(a) (3)	I5	$1.4m	$1.6m

Ref	Theme / initiative	Description	Primary NER objective	Driver	Capex	Opex Uplift
	Excellence in regulatory management					
BC31	Risk, Compliance and Governance	Upgrade to an enterprise wide, integrated solution to manage governance, risk and compliance processes	6.5.7(a) (2) 6.5.6(a) (2)	E4, E5	$1.5m	$.4m
BC32	RIN Reporting	Update and implement new systems, processes and data to meet the AER RIN requirements reporting	6.5.7(a) (2) 6.5.6(a) (2)	E4, E5	$3.7m	$.1m

Enterprise enabling technologies

Ref	Theme / initiative	Description	Primary NER objective	Driver	Capex	Opex Uplift
	Enterprise enabling technologies					
BC24	Enterprise Information Management	Implement a standard foundation to enable efficient management of documents, records and web content	6.5.7(a) (2) 6.5.6(a) (2)	E5, I3, T6	$7.0m	$1.6m
BC22	Data Management	Implement a standard foundation Data Management toolsets (i.e. Enterprise, Quality, Lifecycle)	6.5.7(a) (2) 6.5.6(a) (2)	E5, I3, T6	$2.4m	$2.7m
BC21	Business Intelligence Enablement	Foundational technical components to enable robust business, customer and regulatory reporting including data, analytics and information management	6.5.7(a) (2) 6.5.6(a) (2)	E5, I3, T6	$2.4m	$.7m
BC17	Data Centre Consolidation	Rationalisation of data centres, increase good practice disaster recovery and governance practices	6.5.7(a) (3) 6.5.6(a) (3)	I4, T3, T6	$4.1m	$4.9m
BC18	Enterprise Integration	Implement technical foundations for enterprise integration platforms for data and systems	6.5.7(a) (3) 6.5.6(a) (3)	I2, I5	$6.3m	$6.0m
BC09	SAP Foundations	Upgrade SAP hardware platform (including Oracle database	6.5.7(a) (3)	I5	$5.8m	$2.3m

Ref	Theme / initiative	Description	Primary NER objective	Driver	Capex	Opex Uplift
		systems and User Interface for ERP system)	6.5.6(a) (3)			
BC12a	Unified Communications	Upgrade telephony and business communications system and implement new integrated communications channels	6.5.7(a) (3) 6.5.6(a) (3)	T1, I4, T6, T4	$1.8m	$2.5m
BC07	Enterprise Architecture Tools	Enterprise Architecture repository based toolset	6.5.7(a) (3) 6.5.6(a) (3)		$.8m	$1.8m

Applications and infrastructure refresh

In addition to the non-recurrent investment themes outlined in the tables above, recurrent Capital investment is also required to maintain the reliability and quality of IT systems, infrastructure and services, as outlined below.

	Theme / initiative	Description	Primary NER objectives	Driver	Capex	Opex Uplift
BC27	Technical Operations	Periodical refresh of IT infrastructure to maintain services	6.5.7(a) (3)	All	41.65	-
BC28	IT Applications	Periodical refresh of core application services and platforms to maintain services	6.5.7(a) (3)	All	59.87	-

Appendix E – Alignment between business and technology strategies

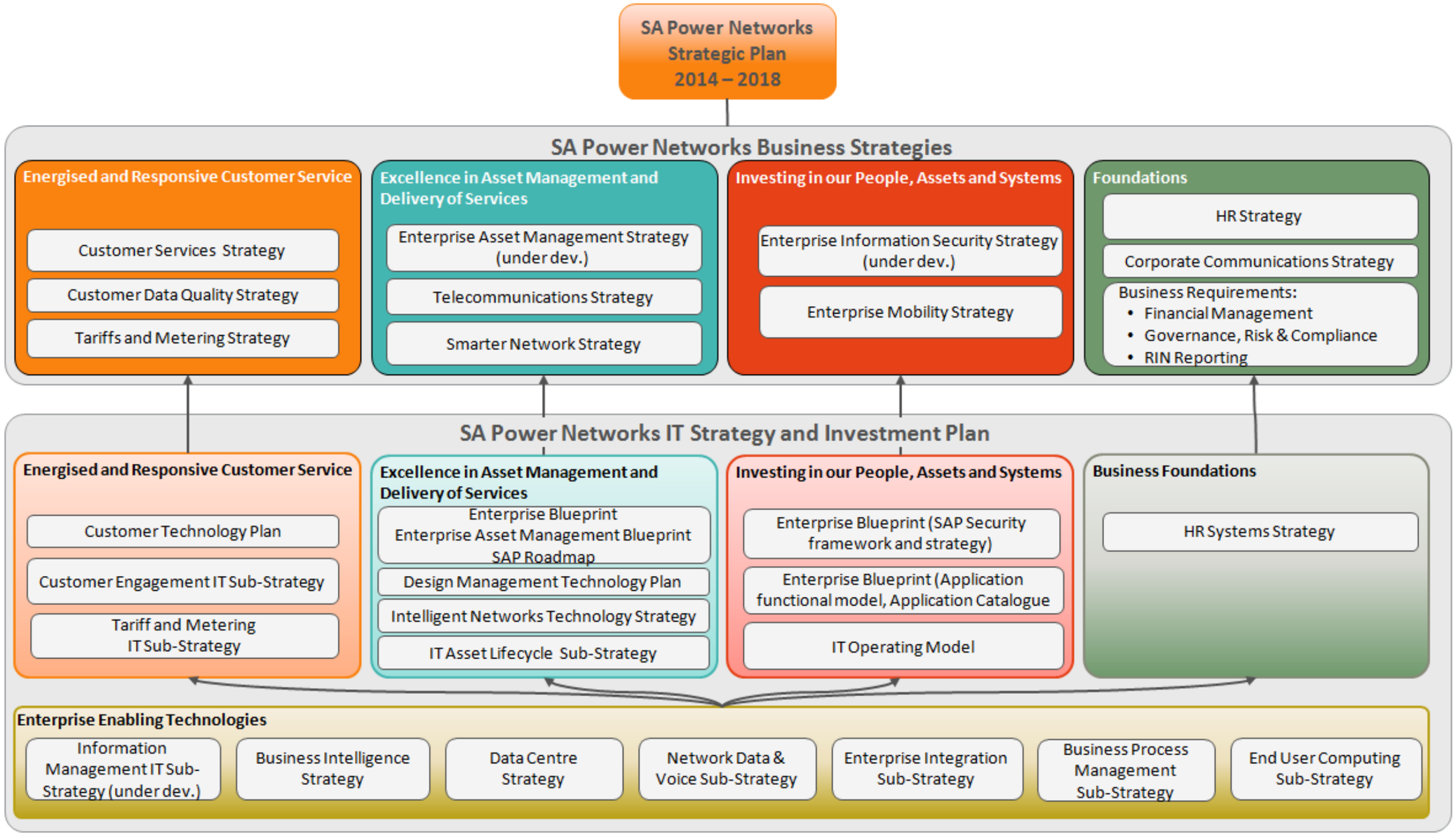
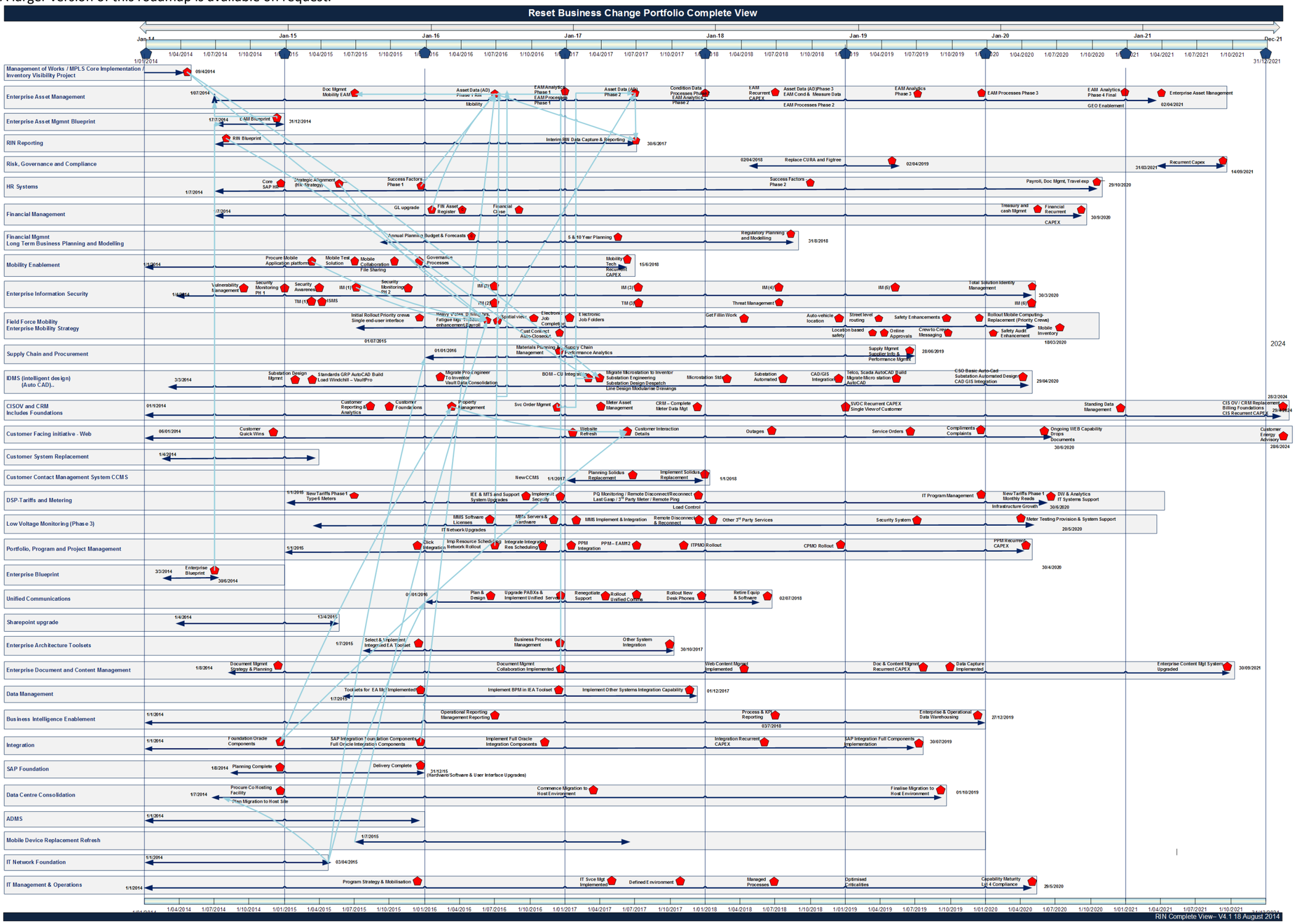


Figure 29: Alignment between the SA Power Networks Business and Technology Strategies

Appendix F – Roadmap of Information Technology initiatives

A larger version of this roadmap is available on request.



Appendix G – Business Case Governance

Reset ID	Business Case Name	Business Owner	IT Owner
BC01	CIS and CRM	GM Customer Relations / Manager Business Improvement & Planning	CIO
BC02	Customer Call Management Replacement	GM Customer Relations / Manager Customer Response Telecommunications Planning & Engineering Manager	CIO/Manager IT Operations
BC02a	Customer Facing Technologies	GM Customer Relations/ Manager Business Improvement & Planning	CIO
BC03	Enterprise Asset Management	GM Network Management/ Manager Network Asset Management CFO/ Manager Fleet GM People & Culture/ Peter Chapple	CIO/ IT Strategy Program Manager
BC04	Financial Management	CFO/ Manager Finance	CIO/ IT Strategy Program Manager
BC07	Enterprise Architecture	GM Network Management/ Telecommunications Planning & Engineering Manager / Manager Network Investment Strategy and Planning	CIO/ IT Strategy Program Manager / Manager IT Operations
BC05a	Supply Chain	GM Field Services	CIO
BC05b	Project, Program and Portfolio Management	GM Corporate Strategy/ Manager Corporate Portfolio Management Office GM Field Services/ Manager Projects and Construction	CIO / Manager IT Services
BC16	Field Force Mobility	GM Field Services / Manager Business Improvement	CIO
BC09	SAP Foundation	EMG	CIO/ IT Strategy Program Manager
BC10	Intelligent Design Management System	GM Field Services / GM Network Management / GM Construction & Maintenance Services	CIO/ IT Strategy Program Manager
BC11	HR Systems	GM People & Culture / HR Strategy Manager	CIO/ IT Strategy Program

Reset ID	Business Case Name	Business Owner	IT Owner
			Manager
BC12a	Unified Communications	GM Network Management / Telecommunications Planning & Engineering Manager	CIO/ IT Strategy Program Manager/ Manager IT Operations
BC14	Enterprise Mobility	GM Field Services	CIO/ IT Strategy Program Manager
BC17	Data Centre Consolidation	EMG	CIO/ Manager IT Operations
BC18	Enterprise Integration	EMG	CIO/ IT Strategy Program Manager
BC20	IT Support for Tariffs and Metering	GM Network Management/ Manager Network Investment Strategy and Planning	CIO/ IT Strategy Program Manager
BC21	Business Intelligence Enablement	EMG	CIO/ IT Strategy Program Manager
BC22	Data Management	EMG	CIO/ IT Strategy Program Manager
BC24	Enterprise Information Management	EMG	CIO/ IT Strategy Program Manager
BC26	Enterprise Information Security	GM Network Management / Telecommunications Planning & Engineering Manager	CIO/ Manager Information Security / Manager IT Operations
BC29	IT Management and Operations	N/A	CIO/ Manager IT Operations
BC31	Governance, Risk, Regulation and Compliance	Company Secretary / Manager Risk	CIO
BC32	RIN Reporting	GM Corporate Strategy / Manager Strategic Planning & Communications / Head of Regulation	CIO
BC27	Technical Operations	N/A	CIO/ Manager IT Operations
BC28	IT Applications	N/A	CIO/ Manager IT Operations