Attachment 8.4

Information Technology Plan

2016/17 to 2020/21 Access Arrangement Information

Australian Gas Networks

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APA Group

Asset Strategy and Planning

AUSTRALIAN GAS NETWORKS

INFORMATION TECHNOLOGY INVESTMENT PLAN

for the 2017-2021 Access Arrangement Period

Revision	Date	Status	Author
1.15	18-June-15	Draft	APA

GLOSSARY

Term	Definition
AA	Access Arrangement
AAP	Access Arrangement Period
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AGN	Australian Gas Networks Limited
AMR	Automated Meter Reading
APA	APA Group
BI	Business Intelligence
B&T	Business and Technology
CMF	Change Management Framework
DBYD	Dial Before You Dig
DGA	DGA Consulting
FTE	Full Time Equivalent
GIS	Geographic Information System
IT	Information Technology
LPG	Liquefied Petroleum Gas
NECF	National Energy Customer Framework
NGR	National Gas Rules
NTPoW	Networks Technology Program of Work
PAF	Project Assurance Framework
PCF	Project Competency Framework
PMF	Project Management Framework
RoLR	Retailer of Last Resort
SA	South Australia
SCADA	Supervisory Control and Data Acquisition
SIB	Stay-in-Business

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1 EXECUTIVE SUMMARY

1.1 Introduction

APA Group (**APA**) is contracted by Australian Gas Networks Limited (**AGN**) to operate and maintain its gas distribution assets around Australia. As part of this contract, APA provides Information Technology (**IT**) services that cover the operations and maintenance of IT systems and infrastructure.

The IT program, like many other aspects of AGN's proposal for the upcoming Access Arrangement Period (AAP), has been heavily influenced by the changes underway in the eastern Australian gas market, which are affecting:

- the wholesale price of gas – wholesale gas prices are rising above their historic levels of $3-$4/GJ in response to the development of the LNG facilities in Queensland and rising costs of production;
- the way in which Australians are consuming energy – this change has been brought about by the increasing emphasis placed on energy efficiency and sustainability; and
- the competitiveness of gas *vis-à-vis* other energy sources – unlike electricity, gas really is a fuel of choice, with most customers able to substitute natural gas appliances with an electric or liquefied petroleum gas (LPG) equivalent. This is a particular issue for distribution networks because the distribution charge accounts for a significant proportion of the final bill.

Together these factors are placing AGN under significant pressure to provide high quality services in the most affordable manner.

From an IT perspective, this has resulted in a renewed focus on obtaining maximum value from the economies of scale. To this end, AGN has recently commenced a national program of work to replace state-based IT systems with the enterprise equivalents servicing all five Australian jurisdictions in which AGN operates. Considerable progress has been made towards the nationalisation of the IT systems and infrastructure in the current (2012-2016) AAP[1] and this effort will continue into the next (2017-2021) AAP[2].

1.2 IT Asset Management Plan summary

To meet AGN's business objectives and targets for the 2017-2021 AAP defined in AGN's *Insights and Implementation – Australian Gas Networks' response to stakeholder insights* report[3] (**Insights and Implementation Report**), a total IT Capital investment of $59.7m and a $3.0m increase in IT Operating expenditure[4] will be required.

The breakdown of the forecast IT expenditure for the 2017-2021 AAP is provided in Table 1.

[1] The period between 1 July 2011 and 30 June 2016
[2] The period between 1 July 2016 to 30 June 2021
[3] *Insights and Implementation - AGN' response to stakeholder insights, South Australian Stakeholder Engagement Program,* AGN, February 2015
[4] Unless otherwise stated, all costs in this document are expressed in real 2014/15 dollars excluding overheads

Table 1: APA IT expenditure forecast for the 2017-2021 AAP, $m real 2014/15, excluding escalation and overheads. Totals may not exactly match the sum of individual costs due to rounding.

Expenditure category	FY17	FY18	FY19	FY20	FY21	Total $m
Capex	11.0	18.2	14.5	8.5	7.6	59.7
Opex	0.4	0.6	0.8	0.7	0.6	3.0

This expenditure is required to address the following key areas:

Maintain the current levels of IT services

- **Maintain the current levels of IT services and mitigate risks associated with AGN's core business systems** through a prudent cycle of system upgrades and replacements. During the 2017-2021 AAP, the ongoing 'stay in business' application upgrade program is required to maintain the security and integrity of the IT environment and to keep technology risks at an acceptable level. Additionally, the legacy Geographical Information Systems (**GIS**) suite needs replacement due to the existing legacy systems running out of vendor support. Finally, the current Supervisory Control and Data Acquisition (**SCADA**) and Historian systems in South Australia (**SA**) need to be upgraded to align with the national system, linking AGN's control and monitoring system with the Queensland and Victorian AGN Networks. These projects account for approximately 62% of the total IT Capital investment.

Enable effective & efficient delivery of AGN services

- **Enable effective and efficient delivery of AGN services and its program of work proposed for the 2017-2021 AAP**. The two service delivery IT initiatives planned for the 2017-2021 AAP are Mobility Integration and Business Intelligence. Mobility Integration will deliver an enhanced mobile communications platform to: enable field data capture into core operational systems; facilitate the integration of field data into the Enterprise Asset Management suite of IT applications; and provide the latest information to field crews. The Business Intelligence initiative will deliver enhanced capability for informed decision making in relation to the network asset lifecycle processes, and the Digital Capabilities initiative will consolidate 5 websites into 1 and provide an improved gas connection customer experience. These initiatives account for approximately 31% of the total IT Capital investment.

Enable regulatory compliance

- **Enable regulatory compliance** by providing sufficient resources to manage the business process and system changes required to respond to changing regulation, pricing and other compliance requirements as the Australian Energy Market Operator's (**AEMO**'s) vision of a nationally harmonised gas market is implemented. Additionally, AGN has proposed a Remote Meter Reading initiative that will trial the automation of meter reads to address the high number of estimated meter reads due to the increasing lack of access to properties (compliance with meter reading obligations). These initiatives contribute approximately 7% to the total IT Capital investment.

The breakdown of the IT Capital expenditure by the IT investment categories described above is provided in Figure 1.

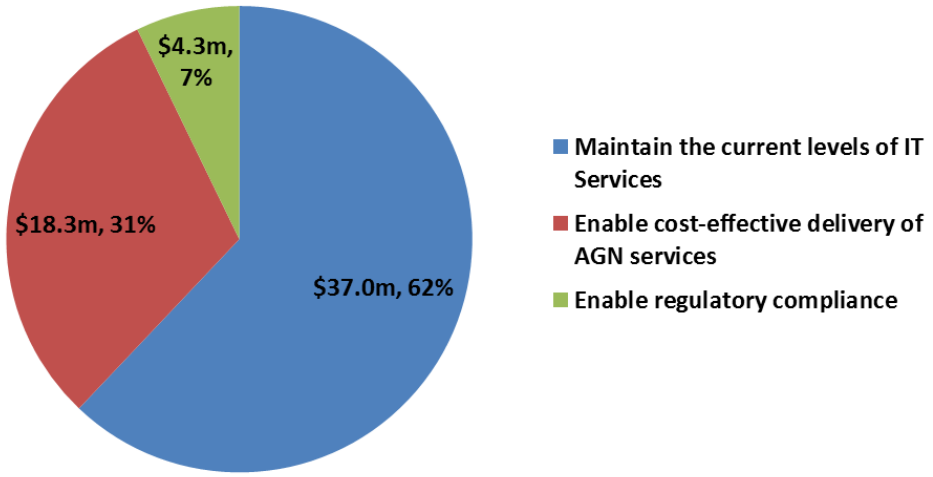


Figure 1: Breakdown of IT capital expenditure by investment category

1.3 Benefits from the IT investment

The IT investment will deliver the following key benefits:

1. Maintain security and integrity of business information and mitigate the risk of failure of critical business systems
2. Mitigate significant financial and safety risks associated with an unsupported GIS application
3. Complete the implementation of standardised national processes to simplify data management and maintain integrity of spatial and asset data
4. Ensure the continued delivery of reliable SA AGN data to AEMO and other stakeholders
5. Reduce effort associated with manual data entry, validation, error handling and correction of information collected by field crews
6. Enable field crews to collect increased volumes of data that are required to meet AGN's regulatory and customer obligations and avoid additional costs associated with manual processing of this data
7. Improve employee and contractor safety through access to improved asset data, streamlined safety tools and processes and live access to corporate knowledge such as latest version of technical work instructions
8. Improve data quality and decision-making capability; in particular, enhance asset management decision-making, including targeted maintenance and asset replacement activities to maintain asset integrity
9. Streamline technical, regulatory and legislative compliance reporting to ensure compliance obligations are met and reported on appropriately
10. Increase the efficiency of obtaining accurate data from the SA AGN SCADA system
11. Meet the regulatory obligation to obtain an actual meter read every calendar year
12. Improve meter read accuracy for hard to access sites, thereby increasing customer service levels and reducing re-work arising from complaints, increased call volumes and adjustments to bills
13. Reduce Health and Safety risks by eliminating the need to physically enter properties to obtain meter reads

14. Provide a modern digital customer experience resulting in improved customer service for the gas connection process and 24/7 access to one website for gas leak reporting and safety information
15. Ensure ongoing compliance with regulatory changes

In addition to avoidance of future costs associated with increased data generation and manipulation, there are business cost savings arising from the IT investment, estimated at $1.1m. These are set out in the respective business cases.

1.4 Alignment to business strategy

AGN has outlined its proposed key areas of focus for the 2017-2021 AAP in the *Insights and Implementation report*. The report identifies four key themes based on stakeholder feedback:

- **Include** stakeholders - stakeholders want AGN to involve and include them by increasing the transparency of AGN's operations. This will help them make better decisions and provide more informed opinions.
- **Maintain** reliability and service - stakeholders value AGN's high reliability and want AGN to keep providing the same service levels (as a minimum) – if AGN doesn't, it should compensate those impacted.
- **Improve** the network - stakeholders want AGN to explore ways in which services can be improved, particularly as it relates to network safety.
- **Efficient** price and operational outcomes - stakeholders are concerned with rising costs in general and they want AGN to promote efficient price outcomes for consumers of natural gas.

The main focus (95%) of the AGN business investment proposed in the *Insights and Implementation Report* is directed to the **Maintain** and **Efficient** themes, reflecting stakeholders' preference for AGN to prudently and efficiently maintain its current reliability and service levels. Accordingly, this IT Investment Plan is focused primarily on maintaining the existing IT environment and services and on enabling AGN to effectively and efficiently maintain its current business operations and service levels. At the same time, the IT investment in Mobility Integration, Business Intelligence and Website Consolidation will provide the foundations for future digital capabilities that AGN plans to develop to achieve the **Include** theme objectives. Finally, the Remote Meter Reading initiative will contribute to the **Improve** and **Efficient** themes.

The mapping of the planned IT program of work to the AGN stakeholder engagement themes is provided in Table 2.

Table 2: Mapping between IT investment categories, IT initiatives and stakeholder engagement themes

IT investment categories	ID	IT initiatives	Stakeholder engagement themes			
			Include	Maintain	Improve	Efficient
Maintain the current levels of IT services	SA57	Application Renewal Program		✓		
	SA82	Infrastructure Upgrades		✓		
	SA58	GIS Upgrade		✓		
	SA62	SCADA Upgrade		✓		
Enable effective & efficient delivery of AGN services	SA59	Mobility Integration	✓	✓		✓
	SA60	Business Intelligence	✓	✓		✓
	SA 84	Digital Capability	✓	✓		✓
Enable regulatory compliance	SA64	Remote Meter Reading			✓	✓
	SA65	Industry Change Projects		✓		

1.5 IT investment proposal development process and governance

This proposal has been developed following the standard business investment governance framework that includes:

- business-led prioritisation process
- robust standardised bottom-up costing estimates
- strategic alignment and business needs analysis
- business case development with defined benefits and alignment to the National Gas Rules (**NGR**)
- formal approval by an independent Governance Forum, e.g. the full Board or the Group Transformation Committee, depending on the size of the project.

1.6 Outcomes of the current period

Capital IT expenditure in the current (2012-2016) AAP is projected to be $21.9m[5]. In the 2012-2016 AAP, considerable progress has been made towards the nationalisation of AGN's IT systems and infrastructure. The major projects implemented during the current AAP have commenced building the platforms to leverage efficiencies in business operations through data consolidation, enablement of standard national processes and task automation. These platforms will be delivered over the last three years of the current (2012-2016) AAP and finalised in the next (2017-2021) AAP. The timeline of the IT program of work highlighting the nationalisation projects delivered in the current (2012-2016) AAP and those planned for the next (2017-2017) AAP is provided in Figure 2.

[5] $ nominal, excluding overheads

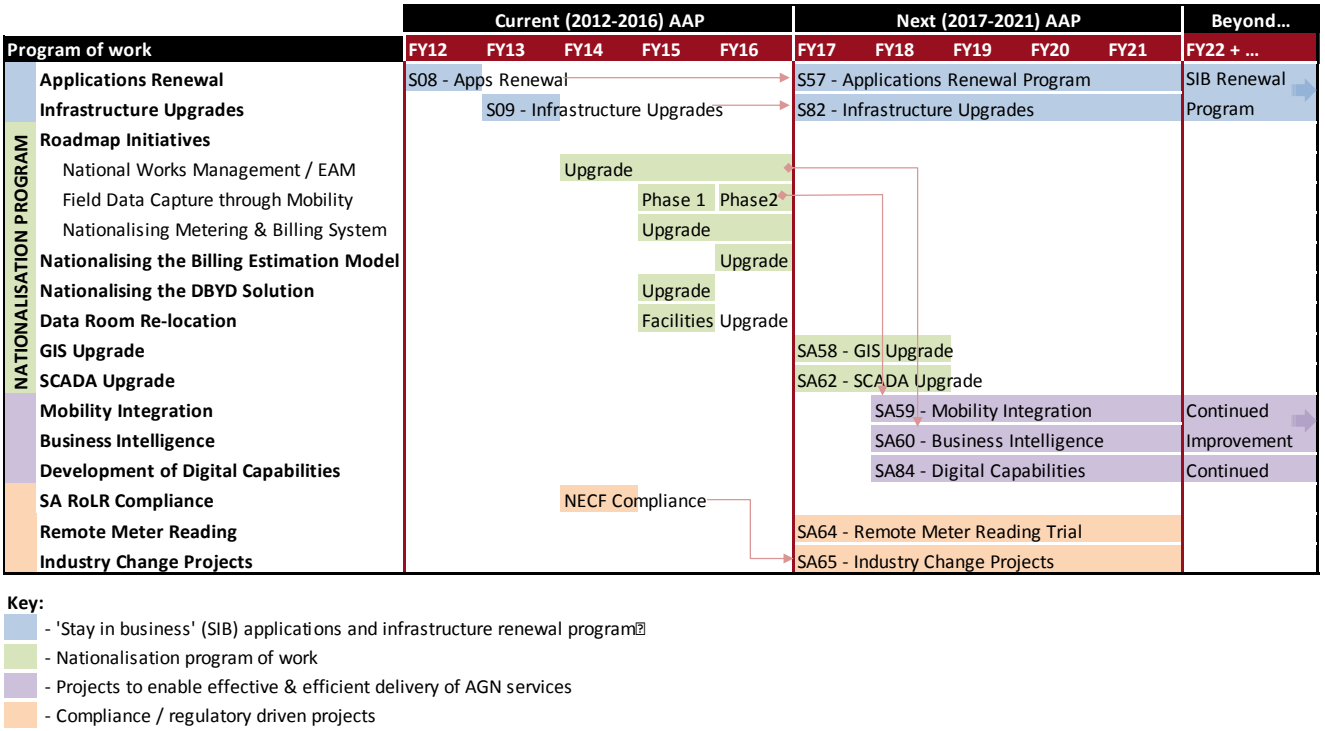


Figure 2: Timeline of IT program work during the current (2012-2016) and next (2017-2021) AAP. The projects that are part of the nationalisation program are highlighted in green

1.7 IT Capital program of work planned for the next period

The IT Capital expenditure planned for the next (2017-2021) AAP is $59.7m. This investment is required to complete the nationalisation program of work commenced in the 2012-2016 AAP, to maintain the current levels of IT services and mitigate the risks associated with AGN's core business systems across all five Australian jurisdictions that AGN operates in, to enable effective and efficient delivery of AGN services and ensure regulatory compliance.

The SCADA Upgrade and GIS Upgrade projects will complete the major upgrades of the IT systems associated with the nationalisation program. The legacy GIS system is the last system in the AGN IT portfolio that is over 10 years old and is not supported by the vendor. The investment profile of the applications and infrastructure renewal work going forward is expected to be smoother as the currency of the IT portfolio will be maintained through a prudent cycle of IT system upgrades and replacements as part of the Stay-in-Business (SIB) Renewal Program. The SIB program ensures systems are kept up-to date enabling AGN to continue to maintain secure, reliable, compliant and efficient business process and systems, preserving the on-ongoing integrity of services.

Failure to complete the nationalisation program of work in the next (2017-2021) AAP will significantly increase AGN's risk of non-compliance with relevant regulations and legislation and may result in customer and business interruptions, public safety issues and have corresponding adverse financial and reputation impacts.

The IT Capital expenditure required to deliver the program of work for South Australia over the 2017-2021 AAP was estimated using a cost allocation method based on South Australia's proportion of end consumers serviced by AGN across all five Australian jurisdictions.

The breakdown of the planned IT Capital expenditure by IT initiative over the 2017-2021 AAP is provided in Table 3.

Table 3: Breakdown of proposed capital expenditure by initiative, $m (real $2014/15), excluding overheads. Totals may not exactly match the sum of individual costs due to rounding

ID	IT initiative	2016/17	2017/18	2018/19	2019/20	2020/21	Total
SA57	Application renewal	3.8	2.6	3.8	2.6	4.8	17.6
SA82	Infrastructure upgrades	0.5	0.5	-	-	-	1.0
SA58	GIS Upgrade	2.6	8.6	3.8	-	-	15.0
SA59	Mobility Integration	-	1.9	2.1	2.8	2.2-	9.0
SA60	Business Intelligence	-	2.0	3.9	2.6	0.1	8.6
SA64	Remote meter reading	1.5	0.6	0.1	0.1	0.1	2.5
SA62	SCADA Upgrade	2.2	1.2	-	-	-	3.4
SA65	Industry change projects	0.4	0.4	0.4	0.4	0.4	1.8
SA84	Digital Capability	-	0.4	0.4	-	-	0.8
	Total	11.0	18.2	14.5	8.5	7.6	59.7

1.8 IT Operating expenditure

The breakdown of the IT operating expenditure step change is provided in Table 4. The costs in Table 4 are net of the offsetting cost saving benefits that are expected over the 2017-2021 AAP.

Table 4: Breakdown of IT operating expenditure step change by initiative ($m real 2014/15) , excluding overheads. Totals may not exactly match the sum of individual costs due to rounding.

ID	IT initiative	2016/17	2017/18	2018/19	2019/20	2020/21	Total
SA58	GIS Upgrade	0.0	0.2	0.2	0.2	0.2	0.7
SA59	Mobility Integration	0.0	0.0	0.2	0.1	0.0	0.3
SA64	Remote Meter Reading	0.1	0.1	0.1	0.1	0.1	0.5
SA84	Digital Capability	0.3	0.3	0.3	0.3	0.3	1.5
	Total	0.4	0.6	0.8	0.7	0.6	3.0

The overall increase of $3.0m in IT operating costs over the 2017-2021 AAP is due to:

- Vendor support costs that will be required for the upgraded GIS system, which is currently unsupported.
- The full realisation of cost saving benefits of the Mobility Integration project lagging the support costs by two years, resulting in temporary Opex cost increase.
- Increased operational costs of hosting services and support required to achieve compliance with existing regulatory obligations.
- Consolidation of 5 existing websites and the ongoing maintenance and management of the system

1.9 Deliverability of the Plan

AGN has a successful track record of delivering annual programs of work of similar size during the 2012-2016 AAP. AGN has robust controls in place to ensure successful delivery of the program of work planned for the 2017-2021 AAP. The key controls include:

1. Executive management support
2. Strong Program/Project governance
3. A sound project management methodology including robust risk analyses which are revisited regularly throughout the life of the project
4. Stakeholder involvement throughout the lifecycle of each project
5. Partnering and external resourcing arrangements, with demonstrable access to appropriate skills and experience.

The resources required for project delivery have ramped up over the current AAP. In order to deliver the planned program of work, there will be an increased resource pool allocated to this work. There are sufficient partnering and external resourcing arrangements in place to achieve deliverability of the plan.

2 INTRODUCTION

2.1 Background

APA provides asset management, operating and maintenance services to AGN under a long-term contract agreement. As part of this contract, APA provides IT services that cover the operations and maintenance of IT systems and infrastructure.

The information technology environment supporting the SA branch of AGN is described in Appendix A - APA IT environment.

The domestic gas industry in eastern Australia is presently facing significant challenges brought about by an increasing exposure to international markets and higher costs of production, which is giving rise to higher wholesale gas prices. At the same time, an increased focus on energy efficiency and sustainability has led to changes in the way Australians consume energy.

Compared to other energy sources, gas is a fuel of choice with customers in many cases able to substitute natural gas appliances with an electric or LPG equivalent. In South Australia, the distribution charge represents approximately 50% of the end gas price and, therefore is a very significant factor affecting the cost to customers and their potential decision to switch over to other energy sources. This puts AGN under significant pressure to provide high quality services in the most affordable manner.

In order to obtain maximum value from the economies of scale, AGN has recently commenced a national program of work to replace the state-based IT systems with the enterprise equivalents servicing all five Australian jurisdictions in which it operates. AGN has already made considerable progress towards the nationalisation of the IT systems and infrastructure in the current (2012-2016) AAP and this effort will continue into the next (2017-2021) AAP. The project delivery schedule within the nationalisation program of work has been planned to effectively manage the major upgrades of IT systems some of which are over 10 years old and are inherently complex to upgrade due to the interdependencies between applications, infrastructure and their associated technology. The roadmap of the AGN IT systems and infrastructure projects is provided in Figure 3.

Failure to complete the nationalisation program of work in the next (2017-2021) AAP will significantly increase AGN's risk of non-compliance with relevant regulations and legislation, potential customer and business interruptions, potential public safety issues and the corresponding adverse financial and reputation impacts.

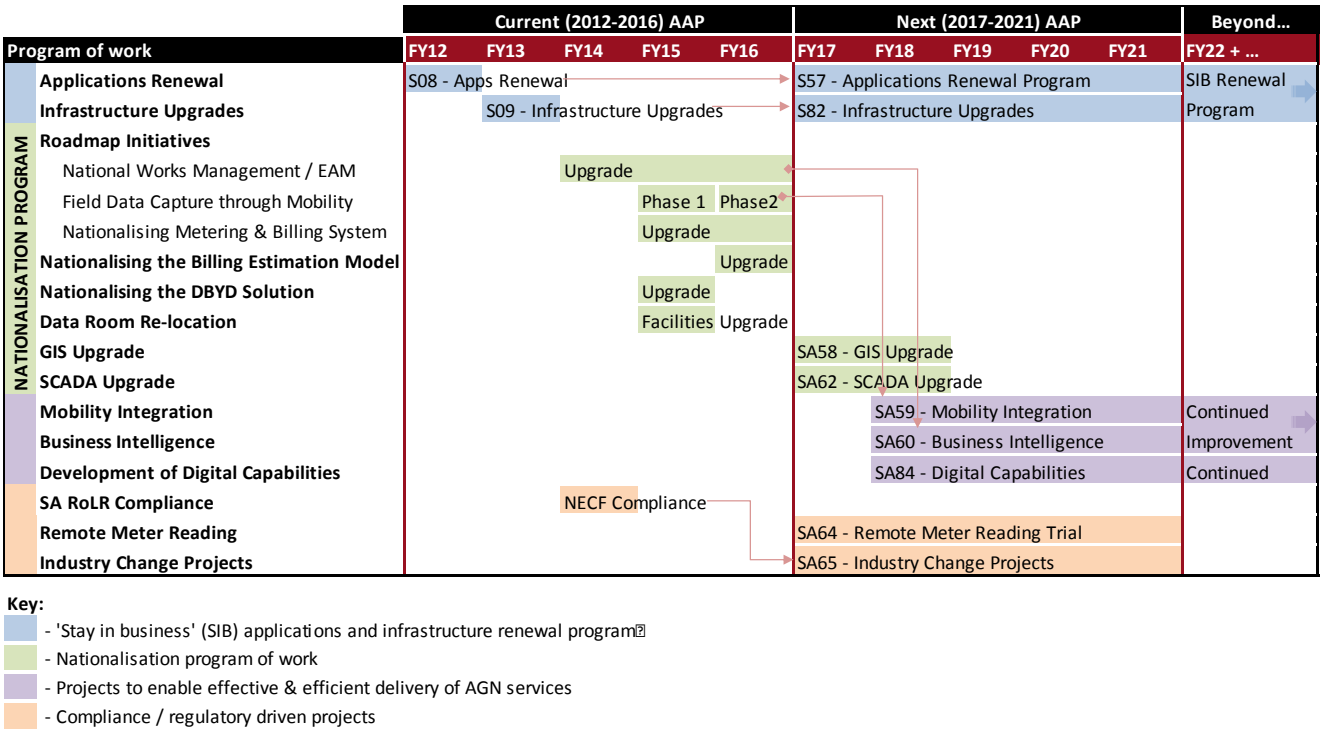


Figure 3: Roadmap of the AGN IT systems and infrastructure projects. The nationalisation program of work is highlighted in green.

2.2 Purpose of the document

The purpose of this document is to describe the IT program of work for the 2017-2021 AAP in support of AGN's regulatory proposal for the 2017-2021 AAP.

2.3 References

The documents listed in the following table may provide useful information when read in conjunction with this document.

Table 2 Referenced Documents

Document title	Author	Version / date
Australian Gas Networks stakeholder insights report, South Australian Stakeholder Engagement Program[6]	Deloitte	February 2015
Insights and Implementation – Australian Gas Networks' response to stakeholder insights, South Australian Stakeholder Engagement Program[7]	Australian Gas Networks	February 2015

[6] http://stakeholders.agnl.com.au/_r169/media/system/attrib/file/53/Deloitte%20Stakeholder%20Insights%20Report.pdf
[7] http://stakeholders.agnl.com.au/_r173/media/system/attrib/file/57/Insights%20and%20implementation%20report_FINAL_.pdf

APA Information Technology Strategy[8]	APA Group	May 2015
Letter to Heather Reynolds - Reference: Compliance with NGR[9]	DGA Consulting	28 April 2015

2.4 Document structure

The remainder of this document is organised as follows:

Section	Title	Description
3.	Alignment to business strategy	Describes how the program of work set out in this proposal aligns to AGN's and APA's business strategies and objectives.
4.	Consistency with National Gas Rules (NGR)	Describes how AGN ensures it complies with the NGR.
5.	IT proposal development process and governance	Describes the review and approval processes that were followed during the development of this Plan and related business cases.
6.	Outcomes of the current period	Outlines the program of work implemented during the current, 2012-2016, AAP and the benefits delivered to AGN and its customers
7.	IT Capital program of work planned for the next period	Describes the Capital program of work planned for the next, 2017-2021, AAP, the benefits to be delivered to AGN and its customers and the operational impacts of the IT Capital program.
8.	IT Operating expenditure	Describes the Operating expenditure step changes for the 2017-2021 AAP
9.	Deliverability of the IT program of work	Explains how the IT program of work planned for the 2017-2021 AAP will be delivered and outlines the organisational processes and controls to enable on-time and on-budget delivery and ensure prompt realisation of the identified benefits.

[8] Available upon request
[9] Attached in Appendix B

3 ALIGNMENT TO BUSINESS STRATEGY

3.1 AGN stakeholder engagement program

In July 2014, AGN embarked on a stakeholder engagement program in order to gain insights into the needs and preferences of its stakeholders, and the key issues that they are facing. The stakeholder insights gained during the program[10] were used by AGN to evaluate and inform its business plans, in conjunction with a consideration of its regulatory obligations[11]. In February 2015, AGN issued the *Insights and Implementation Report*, which outlines AGN's response to the stakeholder feedback and the proposed key areas of focus for the 2017-2021 AAP. AGN invited its stakeholders to submit feedback to this report. Submissions on this document will help inform AGN's final South Australian Access Arrangement Proposal for the 2017-2021 AAP, prior to submission to the AER by 1 July 2015.

The *Insights and Implementation report* identifies four overarching themes:

- **Include** stakeholders - stakeholders want AGN to involve and include them by increasing the transparency of AGN's operations. This will help them make better decisions and provide more informed opinions.
- **Maintain** reliability and service - stakeholders value AGN's high reliability and want us to keep providing the same service levels (as a minimum) – if AGN doesn't, it should compensate those impacted.
- **Improve** the network - stakeholders want AGN to explore ways that services can be improved, particularly as it relates to network safety.
- **Efficient** price and operational outcomes - stakeholders are concerned with rising costs in general and they want AGN to promote efficient price outcomes for consumers of natural gas.

To deliver upon the stakeholder expectations under each of these themes, AGN has defined a program of work for the 2017-2021 AAP that is currently being validated through stakeholder feedback. The key initiatives defined under each theme are provided below, along with the approximate percentage of the total spend proposed by AGN for the 2017-2021 AAP attributed to a particular theme.

Table 5 - Key business initiatives (including enabling IT initiatives) by stakeholder expectations theme.

Theme	Key initiatives
Include	Digital strategy will provide AGN with the tools to effectively and efficiently communicate with the community Education and advocacy initiative that develops education materials and manages their distribution to consumers
Maintain	Mains replacement program - to maintain safety and reliability of the network Ongoing programs of work required to maintain business operations

[10] Summarised in the *AGN stakeholder insights report, South Australian Stakeholder Engagement Program,* Deloitte, February 2015

[11] *Insights and Implementation – Australian Gas Networks' response to stakeholder insights, South Australian Stakeholder Engagement Program,* Australian Gas Networks, February 2015

Improve	New projects designed to improve the network including: • repairing customer outlet services • fitting fire shut-off valves • reducing risk from assets on private property • remote meter reading
Efficient	Operate our network in a safe and efficient manner in order to maintain and grow our customer base

Source: *Insights and Implementation – Australian Gas Networks' response to stakeholder insights, South Australian Stakeholder Engagement Program,* Australian Gas Networks, February 2015

The AGN business investment proposed in the *Insights and Implementation report* is mainly directed to the **Maintain** theme, reflecting the stakeholders' preference for AGN to prudently and efficiently maintain its current reliability and service levels. Accordingly, the IT investment proposed in this document is primarily focussed on maintaining the existing IT environment and services and on enabling AGN to cost-effectively maintain its current business operations and levels of service. At the same time, the investments in Mobility Integration, Business Intelligence and Website Consolidation will provide the foundations for future digital capabilities that AGN plans to develop to achieve the objectives of the **Include** theme, aimed at involving and including stakeholders by increasing the transparency of AGN's operations. Finally, the Remote Meter Reading initiative has been proposed by AGN under the **Improve** and **Efficient** themes, and is aimed at improving the efficiency of gas meter reading process, reducing the safety risks associated with manual meter reading and ensuring compliance with the regulatory obligation to obtain an actual meter read every calendar year.

3.2 Strategic alignment of the IT program of work

The IT program of work supports AGN's business objectives and is aligned with the stakeholder expectation themes as follows:

Table 6: Mapping between IT investment categories, IT initiatives and stakeholder engagement themes

IT investment categories	ID	IT initiatives	Stakeholder engagement themes			
			Include	Maintain	Improve	Efficient
Maintain the current levels of IT services	SA57	Application Renewal Program		✓		
	SA82	Infrastructure Upgrades		✓		
	SA58	GIS Upgrade		✓		
	SA62	SCADA Upgrade		✓		
Enable effective & efficient delivery of AGN services	SA59	Mobility Integration	✓	✓		✓
	SA60	Business Intelligence	✓	✓		✓
	SA84	Digital Capability	✓	✓		✓

Enable regulatory compliance	SA64	Remote Meter Reading			✓	✓
	SA65	Industry Change Projects		✓		

3.3 APA IT Strategic Objectives

The APA Information Technology (IT) Strategy is to provide enterprise business solutions that align with the One APA business model.

The APA IT Strategy is supported through objectives that are designed to ensure APA delivers IT services to AGN prudently and efficiently and that the IT solutions are fit for purpose, flexible and extendable to meet the changing needs of the business. Table 7 demonstrates how the proposed program of work is aligned with the APA IT strategic objectives.

Table 7: Alignment of the proposed IT initiatives to the APA IT Strategic Objectives

ID	IT Strategic Objectives	How the proposed IT initiatives deliver on the IT Strategic Objectives
IT1	Enterprise focussed investments enabled through delivering enterprise-wide solutions wherever possible to support the AGN business	SA57, SA82, SA58, SA62: • Continued nationalisation of the IT systems in order to leverage economies of scale
IT2	Automation of process and information flows and a single source of truth so information is available anywhere it's needed in our systems without manual intervention and it is created once and maintained in one location	SA59 • Providing access out in the field to business information and automate the gathering of data from the field SA60: • Provide the single platform for data and make the information available without manual intervention SA84 • Consolidate 5 websites into 1 resulting in an improved customer experience and easier access to gas connection, gas leak reporting and safety information
IT3	Enhanced analytical capability delivered by solutions that enhance our ability to generate insights from the significant amount of information we capture about assets, customers and people	SA58: • Modernise GIS to provide functionality to utilise and analyse asset information SA60: • Enabling increased amounts of

		information to be captured and stored from across the business and combined in a variety of ways to provide greater business knowledge
IT4	Secure operations to mitigate and manage the growing and evolving IT security risks confronting all businesses	SA57, SA82: • Software is able to be upgraded and patched, minimising exposure to security risks
IT5	Scalable and flexible solutions designed to accommodate growth and a changing environment	SA82: • Up-to-date infrastructure platforms supporting more flexible choice in applications and modes of use (e.g. mobile) for the business • Enterprise solutions are being built to cater for the changing environment
IT6	Resilient systems and infrastructure is built and provides 24 x 7 operations where required	SA57, SA82: • Timely upgrades and patches increase resilience and minimises the risks of critical systems failure to ensure 24 x 7 operations where required
IT7	Communication, collaboration and productivity enhancements that drive innovation and efficiency for individuals and teams	SA59: • Enhancing sharing of information on work practices and drive efficiency in data gathering out in the field SA60: • Drives the analysis required to provide knowledge of the business operations to further drive productivity improvements utilising data from systems such as EAM, Finance and the GIS SA84 • 24/7 access to the AGN website through modern digital devices will improve customer access and communication resulting in a better gas connection customer experience SA82: • Up to date communication and collaboration platforms

4 CONSISTENCY OF PROPOSED PROGRAM WITH NATIONAL GAS RULES

AGN operates its networks in accordance with the National Gas Law and National Gas Rules (**NGR**). The overarching objective of the National Gas Law is set out in the National Gas Objective (**NGO**), which states that the objective of the Law is "*promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply*".

AGN's investment in IT in the upcoming AAP is consistent with this objective because it will enable AGN to maintain and prudently extend its IT systems, infrastructure and processes in a manner that will ensure the safety, reliability and security of supply is managed in a cost effective way. The proposed expenditure on IT, which consists of both capital and operating expenditure, also conforms with:

- The new capital expenditure criteria in rule 79 of the National Gas Rules because it is:
  - Such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services, consistent with rule 79(1)(a); and
  - Necessary to maintain and improve the safety of services, maintain the integrity of services and comply with a regulatory obligation or requirement as highlighted in the table below, consistent with rule 79(1)(b) and 79(2)(c)(i)-(iii); and
- The operating expenditure criteria in rule 91 of the NGR because it is such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.

Table 8: Consistency of the proposed IT program with rule 79(1)(b) of the NGR

#	NGR Criteria	Justification of the proposed expenditure
79(2)(c)	The capital expenditure is necessary:	
(i)	to maintain and improve the safety of services	Business cases SA57 and SA82 - Making this investment reduces the risk of failure of the critical systems or security breaches. Any failure will have impacts on the safety of services. SA58 - The GIS system is no longer supported and therefore has a higher risk of failing for a period of time. The non-availability of this system will have safety implications for the business, particularly in the availability of Dial Before You Dig (DBYD) information for the public and asset locations for staff and contractors. SA59 - Mobility offers a number of opportunities to decrease health and safety risk to both the workforce and to the public. SA60 - More extensive access to accurate information about assets and the ability to predict failures will result in a safer network. SA64 - The safety of meter readers will be improved if difficult to access premises are read remotely

		SA62 - Making this investment reduces the risk of failure of the critical SCADA systems SA84 – Capability to enable 24/7 gas leak reporting in one place, and up to date safety and emergency information
(ii)	to maintain the integrity of services	Business cases SA57 and SA82 - The integrity of the services will be impacted if there are risks to critical systems being available. SA58 - The non-availability of the GIS application or associated data will have implications for the integrity of services through the inability to provide appropriate asset management decisions, such as capacity modelling, asset design and maintenance optimisation SA59 - Allow increased amounts of accurate data to be extracted and utilised for improved decision making. SA59 - There will be less operational errors from manual processing of data, which will improve the integrity of the services provided SA60 - The integrity of services will be preserved and improved through rapid and accurate access to financial and asset information. SA64 - The increased use of actual rather than estimated reads will improve the accuracy of the data and therefore enhance the integrity of services SA62 - The integrity of the services will be impacted if critical systems are not available. This project mitigates this risk. SA65 - This project is required to maintain the integrity of services both to retailers and end customers in the changing IT environment SA84 – Consolidation of 5 websites into one and a simpler gas connection customer experience will result in improved and more efficient service delivery
(iii)	to comply with a regulatory obligation or requirement	Business cases SA57 and SA82 - Retail Market Procedures would be breached if the systems were not available. SA58 - Regulatory obligations may be breached if the GIS were not available, in particular Retail Market Procedures obligations. SA59 - Manual process can result in delays of service provision and meeting the regulatory obligations. SA59 - The mobile systems will ensure that the data is available to demonstrate compliance SA60 - Access to more extensive and accurate asset information will decrease the cycle time required to meet regulatory reporting periods. SA64 - The use of Automated Meter Reading will facilitate achievement of the regulatory obligation for a firm meter reading

		each year SA62 - Regulatory obligations will be breached if the SCADA systems are not available. SA65 - Regulatory obligations can be breached if the systems are not updated in line with national requirements

Further support for the view that the expenditure is such as would be incurred by a prudent service provider acting efficiently, can be found in the findings of independent consultant, DGA Consulting (**DGA**), who was asked to undertake an expert independent review of the business cases that form part of this IT Investment Plan. DGA concluded that: AGN's "approach to the IT program of work complies with the NGR criteria in the following ways:

1. It is *Prudent*

- The expenditure is necessary in order to maintain the integrity of services and comply with regulatory obligations and requirements. The alignment with industry practice of N-1 ensures ongoing vendor support and mitigates the risk of system outages and potential regulatory breaches
- The application of version upgrades to critical business systems every 2 years is good industry practice as vendors typically provide at least one major and several minor upgrades or patches over that period
- The interoperability of disparate applications must be constantly monitored in order to have visibility of potential incompatibilities. The application of version upgrades through a quality based testing regime mitigates any risks associated with this issue
- The APA Group on behalf of AGN have a long and sustained track record in the successful delivery and management of IT systems. They have put forward a prudent approach to functional improvement of the systems and ensured that they are aligned with their strategic themes of stakeholder inclusion, maintain reliability, improve the network and efficient outcomes.

2. It is *Efficient*

- AGN is using an application lifecycle management methodology which results in efficiencies from a quality based approach (reduces errors and rework)
- AGN views the FRC systems holistically, which requires efficient interoperability between applications
- AGN uses a project estimation and management methodology which applies ongoing historical data and learnings from previous projects, resulting in better resource management and cost estimation (this would be considered good practice in the software development life cycle and industry maturity models)
- The justification for the business cases align with the strategic themes, and position AGN to take advantage of new technologies such as field crew mobility, business intelligence

and remote meter reads to continuously improve the level and standard of service to customers and the ongoing safety of the network".[12]

[12] DGA Consulting, *Letter to Heather Reynolds - Reference: Compliance with NGR*, 28 April 2015

5 OUTCOMES OF THE CURRENT PERIOD

5.1 Major Projects delivered

During the current (2012 - 2016) AAP, a number of major projects to nationalise and upgrade key IT application systems were implemented. These projects delivered improved IT systems with increased scalability, flexibility and reliability, while also ensuring that AGN continues to meet its regulatory and customer obligations. In addition to recurrent application and infrastructure renewal projects, the following major projects either commenced or were completed:

- IT Roadmap Initiatives including:
  - Billing Optimisation – Nationalising the Metering & Billing System
  - National Works Management through Enterprise Asset Management
  - Field Data Capture through Mobility
- Knowledge Management – incorporated with Enterprise Asset Management
- Data Room Re-location – Outsourcing of Data Centres
- SA Retailer of Last Resort (RoLR) compliance – Industry Driven Change
- Billing Estimation Model – Nationalising the Billing Estimation Model
- Dial Before You Dig (DBYD) – Nationalising the DBYD Solution

The project delivery schedule within the national program of work has been planned to effectively manage the major upgrades of IT systems taking into account the interdependencies between applications, infrastructure and their associated technology. The timeline of the national program of work highlighting the projects delivered in the current (2012 – 2016) AAP is provided in Figure 4.

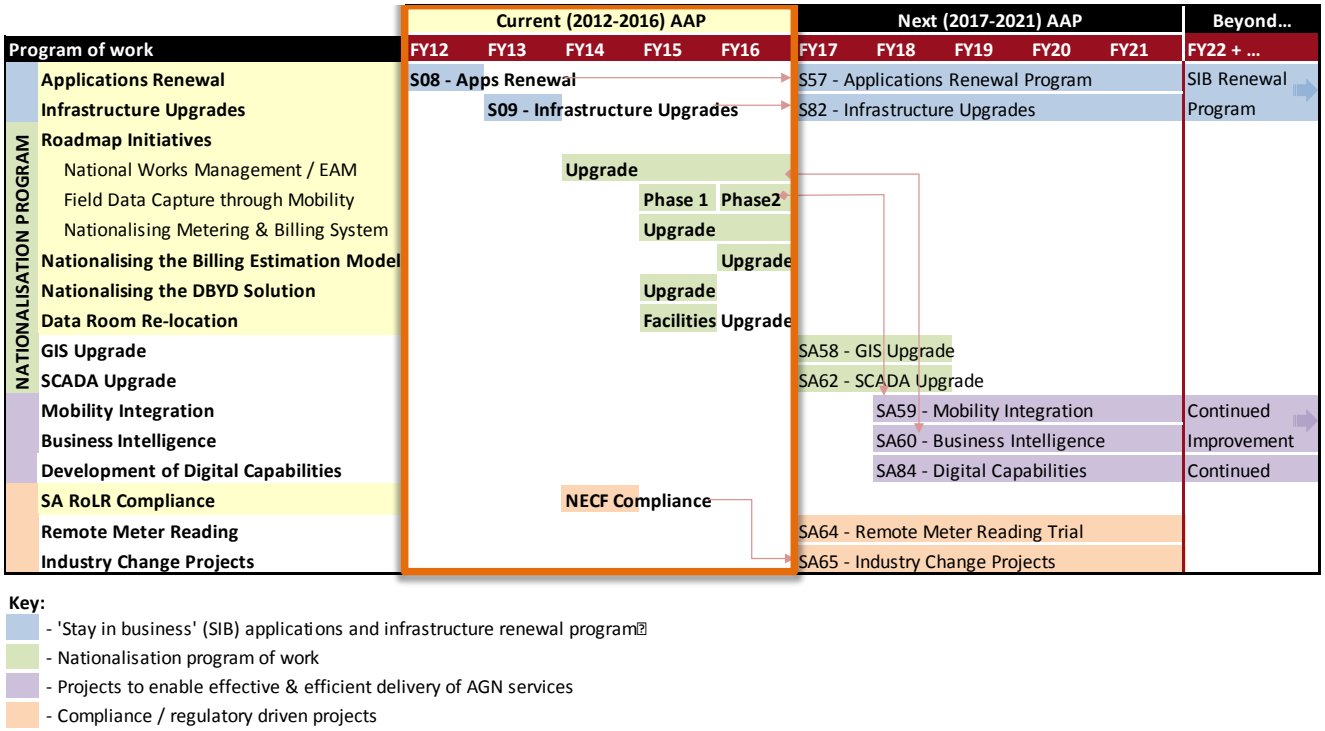


Figure 4: Timeline of the national program work highlighting the current (2012-2016) AAP

These major projects delivered sustainable fully resilient infrastructure and application systems, aligned with business processes.

6 IT CAPITAL PROGRAM FOR THE NEXT AAP

The key objectives of the Capital program of work planned for the 2017-2021 AAP are to:

1. Maintain the current levels of IT services
2. Enable efficient and effective delivery of AGN's services to its customers
3. Enable regulatory compliance

The timeline of the national program of work highlighting the projects planned in the next (2017 – 2021) AAP is provided in Figure 5.

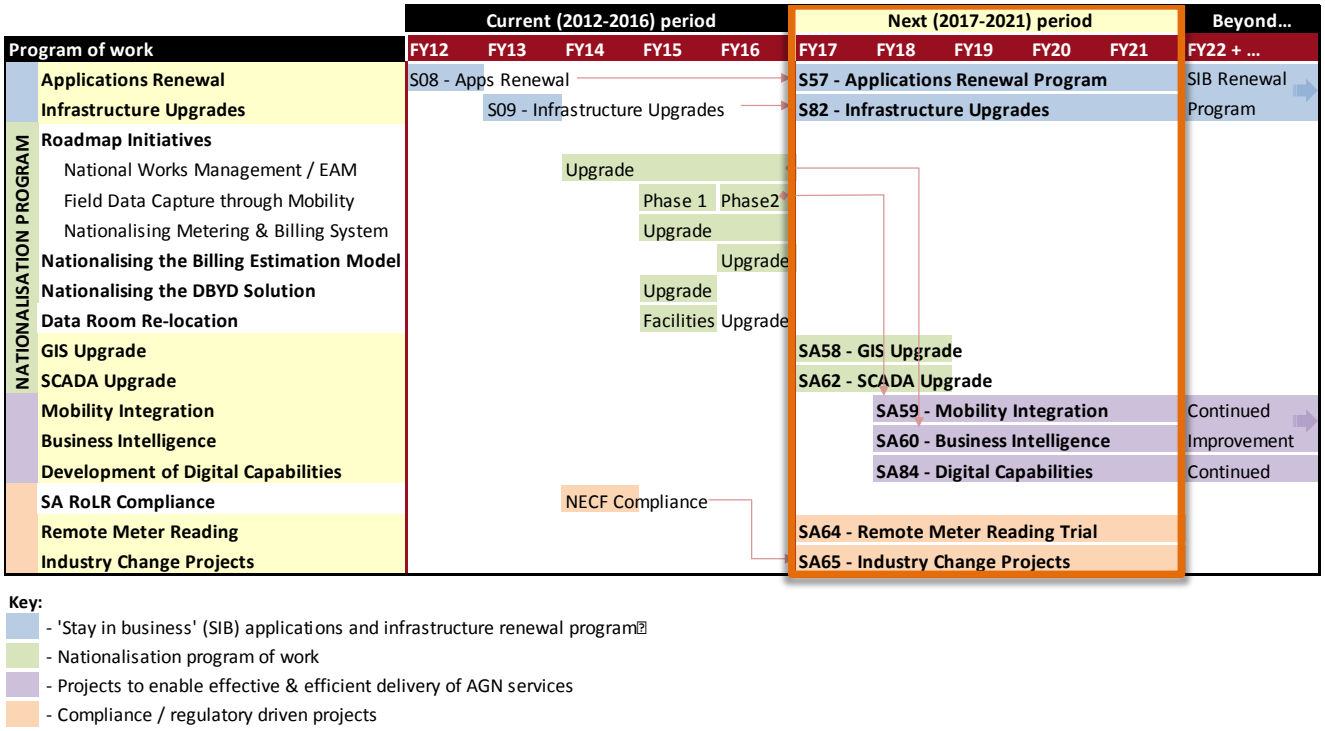


Figure 5: The timeline of the IT program work highlighting the projects planned for the next (2017-2021) AAP

The initiatives to deliver on each of these objectives are described below. Business cases for each of the following projects are provided in Attachment 7.1 of the Access Arrangement Information.

6.1 Maintain the current levels of IT services

Maintain the current levels of IT services

In order to maintain the current levels of IT services and mitigate risks associated with AGN's core business systems, the existing IT applications need to be periodically upgraded or replaced. The ongoing 'stay in business' application upgrade program is required to maintain the security and integrity of the IT environment and to keep technology risks at an acceptable level. Additionally, a major upgrade or replacement of the legacy Geographical Information Systems (GIS) suite is required during the 2017-2021 AAP, due to the existing legacy systems running out of support.

Following the major upgrade projects the ongoing support and maintenance of the enterprise systems is managed within the Stay-in-Business (SIB) Renewal Program. The program ensure systems are kept

up-to date enabling AGN to continue to maintain reliable, compliant and efficient business process and systems, preserving the on-ongoing integrity of services.

6.1.1 SA57 – Applications renewal

The proposed expenditure for the 2017-2021 AAP is provided below.

Expenditure category	2016/17	2017/18	2018/19	2019/20	2020/21	Total
CAPEX	3,795	2,601	3,807	2,616	4,839	17,658
OPEX non-base year cost	-	-	-	-	-	-
Total	3,795	2,601	3,807	2,616	4,839	17,658

The applications upgrade plan is based on the 'stay in business' program of work to ensure that the application systems are kept up-to-date. The program consists of the following recurrent upgrade projects, to be undertaken in the years indicated by 'X':

Upgrade Projects	2016/17	2017/18	2018/19	2019/20	2020/21
Billing Estimation Model	X		X		X
Dial Before You Dig		X		X	
Metering & Billing System	X		X		X
Enterprise Asset Management	X		X		X
Geospatial Information System					X
Telemetry System		X		X	
Historian System		X		X	
FRC Market Gateway		X		X	
Business Intelligence Reporting – FRC	X		X		X
Middleware – BizTalk		X		X	
Field Data / Mobility	X	X	X	X	X

For further detail regarding each of these upgrade projects, please see Appendix A.

This group of projects enables the periodic upgrade of AGN's critical IT applications over the period 1 July 2016 to 30 June 2021. This will ensure that AGN continues to maintain reliable, compliant and efficient business processes and systems and preserves the on-going integrity of the services.

6.1.2 SA82 – Infrastructure renewal

The expenditure planned for the 2017-2021 AAP is provided below.

Expenditure category	2016/17	2017/18	2018/19	2019/20	2020/21	Total
CAPEX	512	510	-	-	-	1,022
OPEX non-base year cost	-	-	-	-	-	-
Total	512	510	-	-	-	1,022

The infrastructure renewal project proposes to upgrade two key pieces of AGN infrastructure - Desktop and Telephony. The desktop operating platform is six years old. These are typically refreshed on a 3-7 year cycle. The telephony infrastructure is over 10 years old and the increasingly scarce availability of spare parts represents a business risk.

These projects enable the periodic upgrade of AGN's critical IT infrastructure over the period 1 July 2016 to 30 June 2021. This will ensure that AGN continues to maintain reliable, compliant and efficient business processes and systems and preserves the on-going integrity of the services.

6.1.3 SA58 - GIS Upgrade

The expenditure planned for the 2017-2021 AAP is provided below.

Expenditure category	2016/17	2017/18	2018/19	2019/20	2020/21	Total
CAPEX	2,617	8,557	3,787	-	-	14,961
OPEX non-base year cost	-	160	160	160	160	640
Total	2,617	8,717	3,947	160	160	15,601

This project will upgrade the SmallWorld GIS application that currently manages data associated with the Australian Gas Network Ltd.'s (AGN) distribution assets. The objectives of this project are to:

1. Reduce business risk resulting from an unsupported version of a critical business management application – support ceased in 2010.
2. Improve the functionality and upgrade path of the GIS application by removing historical customised functionality
3. Leverage benefits from integrating into an Enterprise-wide IT system architecture
4. Implement prudent and efficient end to end business processes to ensure ongoing accuracy of GIS data.

Ultimately, this project will mitigate a significant business risk associated with an unsupported GIS application and integrate the GIS into the broader Enterprise Asset Management suite of IT applications.

6.1.4 SA62 – SCADA Upgrade

The expenditure planned for the 2017-2021 AAP is provided below.

Expenditure category	2016/17	2017/18	2018/19	2019/20	2020/21	Total
CAPEX	2,171	1,174	-	-	-	3,345
OPEX non-base year cost	-	-	-	-	-	-
Total	2,171	1,174	-	-	-	3,345

This project will upgrade the current SCADA and Historian systems in South Australia (SA) to align with the National system, linking AGN's control and monitoring system with the Queensland and Victorian AGN Networks.

Operational processes will be streamlined thereby ensuring the continued delivery of reliable SA Networks data to AEMO and other stakeholders.

6.2 Enable effective and efficient delivery of AGN services to its customers

Enable effective & efficient delivery of AGN services

The two service delivery IT initiatives planned for the 2016-2021 AAP are Mobility Integration and Business Intelligence. Mobility Integration will deliver an enhanced mobile communications platform to enable field data capture into core operational systems and integration with the Enterprise Asset Management suite of IT applications. The Business Intelligence initiative will deliver enhanced capability to enable better informed decision making in relation to the network asset lifecycle processes.

6.2.1 SA59 – Mobility Integration

The expenditure planned for the 2017-2021 AAP is provided below.

Expenditure category	2016/17	2017/18	2018/19	2019/20	2020/21	Total
CAPEX	-	1,866	2,099	2,798	2,194	8,957
OPEX non-base year cost	-	-	200	100	-	300
Total	-	-1,866	2,299	2,898	2,194	9,257

This project will build upon the implementation of mobile collaboration and tactical mobility as part of the National Mobility Strategy and Roadmap. The objectives of this project are to:

- Enhance the mobile communications platform to enable field mobility within the workforce.
- Integrate the enhanced mobile communications into the Enterprise Asset Management System (Maximo) and Geospatial Information System (GIS).
- Implement prudent and efficient end to end business processes that automate enterprise asset management and GIS functionality through mobility.

Ultimately this project intends to improve service delivery to customers through the integration and application of enterprise wide asset management and geospatial information, to automate current

paper-based and manual processes, and enable the field work force to deliver high quality and timely services through the use of mobile devices and integrated processes.

Forecast cost savings resulting from this project have been netted off the project cost and are detailed in Section 7.

6.2.2 SA60 - Business Intelligence

The expenditure planned for the 2017-2021 AAP is provided below.

Expenditure category	2016/17	2017/18	2018/19	2019/20	2020/21	Total
CAPEX	-	1,976	3,895	2,597	96	8,564
OPEX non-base year cost	-	-	-	-	-	-
Total	-	1,976	3,895	2,597	96	8,564

This project is for the implementation of a Business Intelligence (BI) toolset, to provide improved information and reporting utilising the data from the disparate IT applications used within the business.

The objectives of this project are to:

- Implement a BI toolset that allows consolidated views of disparate sets of data from multiple IT applications.
- Drive improved decision making through additional access to information
- Streamline reporting through standardised reporting tools
- Provide integration into other Enterprise business applications to provide ease of publishing information
- Implement prudent and efficient end-to-end business processes to maintain and improve data quality

Ultimately, this project will provide a toolset that will improve data quality, streamline reporting effort and allow greater access to information for optimised decision making.

Forecast cost savings resulting from this project have been netted off the project cost and are detailed in Section 7.

6.2.3 SA84 Development of Digital Capability

The expenditure planned for the 2017-2021 AAP is provided below.

Expenditure category	2016/17	2017/18	2018/19	2019/20	2020/21	Total
CAPEX	-	432	432	-	-	864
OPEX non-base year cost	300-	300	300	300	300	1,500
Total	300	732	732	732	732	2,364

This project intends to establish a digital platform for Australian Gas Networks (AGN) that will deliver online digital services and communications for customers and stakeholders.

The objectives of this project are to:

1. Establish a foundation digital platform that can reliably serve various devices and applications and evolve to meet the needs of the changing technological environment.
2. Make it easier for customers to find and action information about the gas connection process, gas maintenance work and gas emergencies, on the device and time they choose.
3. Improve engagement with various industry partners involved in the gas connection process through the application of digital capabilities.
4. Integrate with existing systems to provide the capability to transact online.

The intent of this project is to provide a set of digital capabilities to enable AGN's customers and stakeholders access to a single AGN website that will provide gas connection information 24/7 in near real time through modern digital devices.

6.3 Enable regulatory compliance

Enable regulatory compliance

To manage the business process and system changes required to respond to changing regulation, pricing and other compliance needs as AEMO's vision of a nationally harmonised gas market, sufficient IT resources need to be provided. Additionally, a trial of automated meter reads is planned for a defined set of customer areas to address the high number of estimated meter reads, due to the increasing lack of access to properties and to improve customer satisfaction.

6.3.1 SA64 - Remote Read (AMR) Project

The expenditure planned for the 2017-2021 AAP is provided below.

Expenditure category	2016/17	2017/18	2018/19	2019/20	2020/21	Total
CAPEX	1,504	632	111	123	136	2,506
OPEX non-base year cost	85	123	99	107	116	530
Total	1,589	755	210	230	251	3,036

To resolve a number of operational challenges AGN will install Automated Meter Reading (AMR) on a small proportion of gas meters. The initial solution selected is essentially a drive-by electronic meter read, which has been adopted in a number of international jurisdictions.

To assess the feasibility of this solution AGN proposes to undertake the trial project in both new and existing areas over the next regulatory period. The results of the trial program, including a fuller understanding of the costs and benefits, would assist AGN in determining the business case for a fuller deployment of the technology.

Forecast cost savings resulting from this project have been netted off the project cost and are detailed in Section 7.

6.3.2 SA65 – Industry Change Projects

The expenditure planned for the 2017-2021 AAP is provided below.

Expenditure category	2016/17	2017/18	2018/19	2019/20	2020/21	Total
CAPEX	364	364	364	364	364	1,821
OPEX non-base year cost	-	-	-	-	-	-
Total	364	364	364	364	364	1,821

This project is being established to ensure that AGN have sufficient resources in place to cope with the expected level of changes required to move towards AEMO's vision of a nationally harmonised gas market.

7 IT OPERATING EXPENDITURE

The breakdown of the IT operating expenditure step change is provided in Table 9 while Table 10 sets out the operational savings that are expected to arise as a result of the proposed IT program. The step changes in Table 9 are **net** of the operational savings set out in Table 10.

Table 9: Breakdown of IT operating expenditure step change by IT initiative, $000s (real $2014/15), excluding overheads. Totals may not exactly match the sum of individual costs due to rounding.

ID	IT initiative	2016/17	2017/18	2018/19	2019/20	2020/21	Total
SA58	GIS Upgrade	-	160	160	160	160	640
SA59	Mobility Integration	-	-	200	100	-	300
SA60	Business Intelligence			0	0	0	0
SA64	Remote Meter Reading Trial	85	123	99	107	116	530
SA84	Development of Digital Capability	300	300	300	300	300	1,500
	Total	885	583	759	667	576	2,970

Table 10: Operational savings expected from implementing the IT program of work

ID	IT initiative	2016/17	2017/18	2018/19	2019/20	2020/21	Total
SA59	Mobility	-	-	100	200	300	600
SA60	Business Intelligence	-	-	150	150	150	450
SA64	Remote Meter Reading Trial	-	-	30	30	30	90
SA84	Development of Digital Capability						
	Total	-	-	280	380	480	1,140

Further detail on the step changes required under the GIS Upgrade, Mobility Integration and Remote Meter Reading projects is set out in the table below.

ID	IT initiative	Total step change, $000s	Justification
SA58	GIS Upgrade	640	GIS support costs will increase over the next AAP due to vendor support now being provided for a previously unsupported system
SA59	Mobility Integration	300	Mobility Opex costs initially increase due to additional mobility application IT support costs being incurred from Year 1, with the offsetting Opex benefits from reduced data entry gradually being realised as additional mobility functionality is implemented during the life of the project.
SA64	Remote Meter Reading Trial	530	Increased operational costs are required to comply with regulatory obligations

A total step change of $1.470 million (real $2014/15) (or $294,000 per annum) is required because:

- the expenditure does **not** form part of the base year Opex, nor is it captured in the growth rate AGN has assumed for the purposes of applying the base-step-trend approach when developing its Opex forecast;
- the expenditure on the GIS Upgrade and Mobility Integration projects is required to:
    - ensure that safety and integrity of the services are maintained in a manner that is in the long-term interests of consumers (eg, because the cost of implementing these projects is lower than the costs that would be incurred if, for example, the existing GIS system failed and an incident occurred that resulted in personal injury or fatality because the Dial Before You Dig information was not available); and
    - comply with regulatory obligations under the Retail Market Procedures.
- the expenditure on the Remote Meter Reading Trial will enable AGN comply with regulatory obligations under the Retail Market Procedures and will also allow it to determine whether there is a business case for a fuller deployment of technology, which over the longer run could substantially reduce the costs of meter reads and which would, in turn, benefit consumers.

8 DELIVERABILITY OF THE IT PROGRAM OF WORK

AGN has a successful track record of delivering annual programs of work of similar size during the 2012-2016 AAP. APA has robust controls and vendor arrangements in place to ensure successful delivery of the planned program of work:

- Executive management support and strong Program/Project governance
- A sound project management methodology including robust risk analyses which are revisited regularly throughout the life of the project
- Stakeholder involvement
- Capacity to deliver in terms of sufficient Full Time Equivalent (FTE)s of committed internal staff or resources supplied via outsourcing / partnering arrangements, with the appropriate skills and experience

The Program and Project Governance for B&T projects is designed to provide a decision making framework that is logical, robust and repeatable to not only increase a project's opportunity for success but also prioritise projects that will enhance APA's/AGN's prudent and efficient use of IT resources to meet our business objectives and stakeholder expectations whilst adhering to National Gas Rules.

8.1 Business case development with clear links to business strategy

Business cases are developed according to a corporate methodology. Clear linkages to Business Strategies and IT Strategic Objectives have been summarised in Section 3.

8.2 Executive management support and Program and Project governance

As will be seen from the composition of the various Governance Forums below, the most senior people in APA and AGN, from Board members to the CEO to Executive Committee members, are involved in approving and monitoring B&T projects.

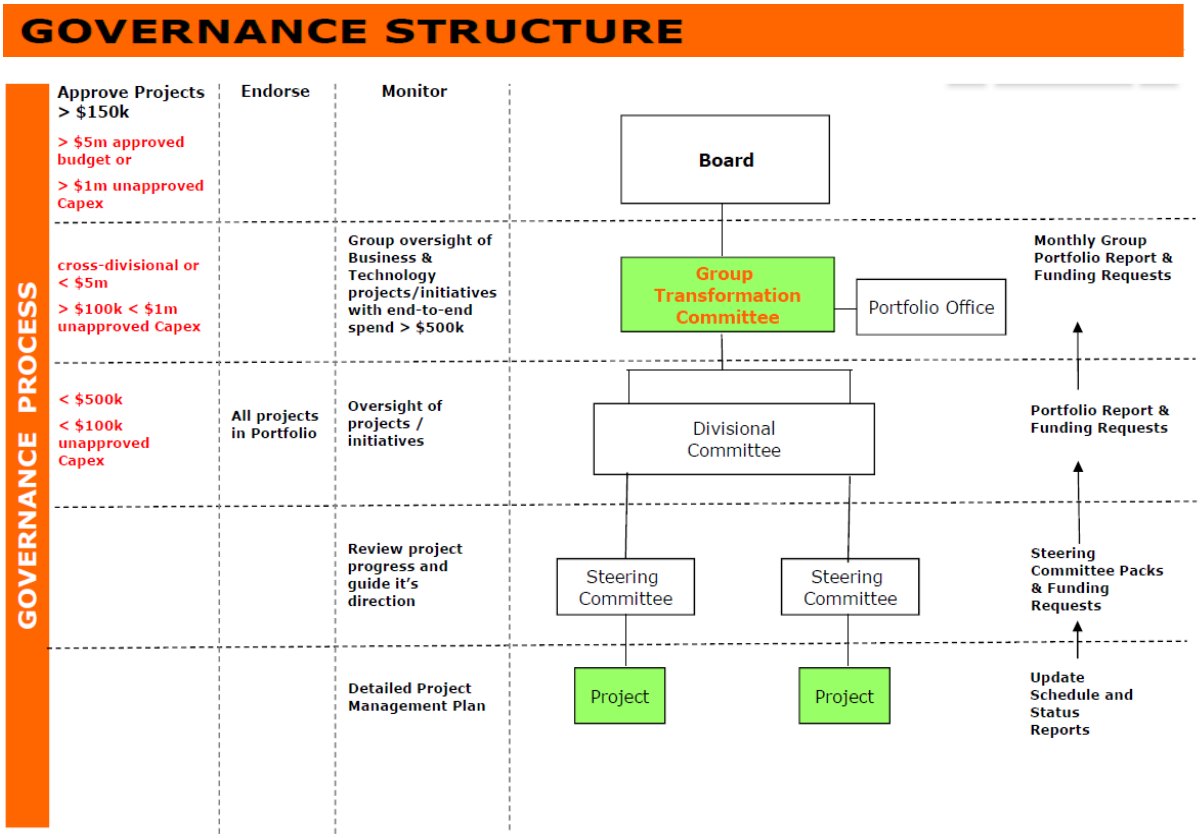
The following mandatory review and assessment points exist within the governance framework:

1. Formal approval by an independent Governance Forum, e.g. the full Board, the Group Transformation Committee, depending of the size of the project
2. Stage Gate assessment of key deliverables, schedules and processes
3. Risk assessment in each stage
4. Progress review by Project Steering Committee (at least monthly)
5. Review of Business Case, to ensure benefits are still attainable
6. Spot-check assessments
7. Formal user acceptance testing and sign-off
8. Post Implementation Reviews identifying lessons learned and enhancing the corporate methodology
9. Closure Reports

8.2.1 B&T Project Governance Structure

The B&T project governance structure ensures the projects undertaken are the most appropriate, support Network business and IT strategy and provide business benefits and risk mitigation.

The governance structure is scaled to ensure approvals occur at the right level of the organisation, and smaller projects are not unnecessarily burdened with onerous governance processes.



8.2.2 IT Governance Forums

The following forums are required to support the effective operation of IT governance and help facilitate the IT decision making process for all B&T projects.

Board

Any projects that have an expected end-to-end budget of over $2m must be approved at Board level.

Transformation Committee

The Transformation Committee consists of the executives and managing director. The Transformation Committee provides strategic direction and facilitates decision making around IT. All B&T projects must be approved by the Transformation Committee, which is essentially the investment committee for B&T projects.

The Committee:

- Prioritises B&T Projects
- Approves funding

- Verifies project alignment with strategic objectives
- Has authority to start and stop projects/initiatives

Divisional Committee

Divisional Committee acts as the progress committee for B&T projects.

The Committee:

- Endorses all new projects
- Endorses all requests to Transformation Committee
- Ensures project alignment with strategic objectives
- Is responsible for the governance of all projects & initiatives; monitoring overall spend/savings, benefits, project health and dependencies
- Drives (and measures) productivity performance against agreed financial year cost saving targets
- Monitors overall risks
- Has authority to start and stop projects/initiatives
- Identifies productivity and business improvement opportunities, including the leverage of initiatives across the business, and drives out best practice initiatives

Steering Committee

The Steering Committee comprises relevant senior stakeholders who regularly review the project's progress and guide its direction, to ensure it is in line with strategic objectives and is delivering according to agreed business need, priority, objectives, benefits and success criteria.

The Committee:

- Provides timely thought leadership (decisions / advice / guidance)
- Engages the business at executive level
- Champions stakeholder support of internal resources and management of resource constraints
- Facilitates business buy-in and commitment
- Acts as an escalation path and decision making forum for critical issues, risk and scope changes
- Originates and maintains organisational links within APA and with external constituencies
- Oversees conflict resolution by providing assistance to PM as required
- Initiates appropriate communication and information flows within the committee and relevant governing bodies
- Monitors the progress according to defined project performance criteria (scope, schedule, costs, funding, stakeholder commitment, benefits, risks, issues, resourcing, dependencies, change management, vendor management)
- Ensures project objectives and critical success criteria are met

8.3 A sound project management methodology

An organisational-wide project management framework underpins the Program Delivery. Risk assessments are required as part of the business case development, and are revisited at each stage of the project to ensure changes in the project, the business operating environment and/or the regulatory environment are always considered and addressed. This overall approach is supported by four frameworks:

- The Project Management Framework (PMF) - providing a consistent and scalable approach to Project Management including artefacts and processes.
- The Change Management Framework (CMF) – providing guidance for the activities and artefacts required for change at each stage of the project lifecycle.
- The Project Assurance Framework (PAF) - providing guidance for health checks, stage gate reviews and post implementations reviews.
- The Project Competency Framework (PCF) - describing the key knowledge and skills and behaviour important for project's successful delivery of projects.

8.3.1 Project Management Framework (PMF)

The PMF is made up of five Project Management Stages:

Each stage has distinct areas of focus and key artefacts for completion. To exit each stage, stage gate criteria must be met to ensure key deliverables and processes within a stage are completed satisfactorily before the next stage can commence, and to ensure the project is still viable.

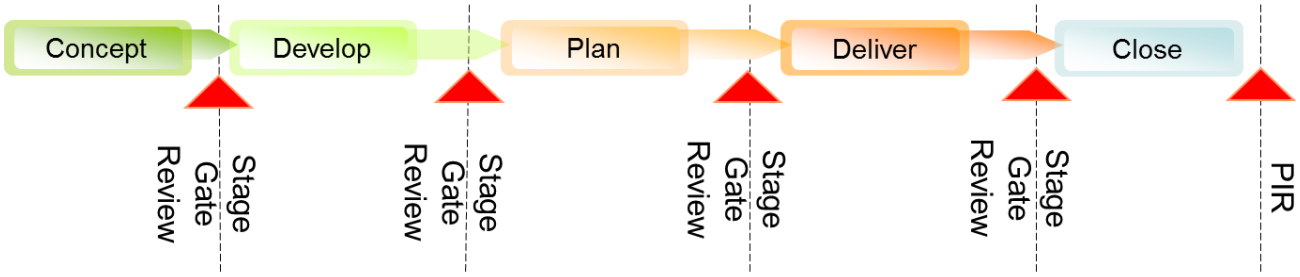
8.3.2 Change Management Framework (CMF)

The CMF is our structured approach to transitioning individuals, teams and the organisation from current state to the desired future state and aims to maximise the value and likelihood of achieving business outcomes and minimising disruption for our people and customers.

Similar to the Project Management Framework, it is a disciplined methodology and follows a staged approach as per the diagram below:

8.3.3 The Project Assurance Framework (PAF)

The PAF ensures consistent application of the project management governance, artefacts and methodologies required to progress a project from stage to stage.



In addition to providing the basis for progression of a project, the Project Assurance Framework will guide

- Health Checks
- Internal Audits
- Post Implementation Reviews.

8.3.4 The Project Competency Framework (PCF)

The PCF recognises and highlights the competencies that are required to deliver effective project management. It matches the project manager's skills and competencies with the project being undertaken.

The PCF is used to:

- recruit all project managers
- develop performance reviews for existing project managers
- create increased awareness for project managers as its own discipline
- provide a development path in project management within APA.

8.4 Stakeholder involvement

Stakeholders are involved throughout the life of each project, participating in Business Case development, risk assessments, user acceptance testing and sign-off, post implementation reviews, identifying lessons learned and developing appropriate enhancement to IT methodologies.

The stakeholder insights gained during the Stakeholder Engagement Program[13] discussed above were used by AGN to evaluate and inform its business plans, in conjunction with a consideration of its regulatory obligations.

[13] Summarised in the *AGN stakeholder insights report, South Australian Stakeholder Engagement Program*, Deloitte, February 2015

8.5 Capacity to deliver

As a provider of IT Services to AGN, APA has a mature Portfolio and Project Management capability and is geared to manage a large B&T program of work.

APA has a successful track record of delivering annual programs of work of similar size during the 2012-2016 AAP. The resource allocation for AGN project delivery ramped up over the current AAP, with the AGN projects accounting for around half of APA's total project delivery over the last three years. In order to deliver the planned program of work, APA intends to increase the percentage of its total resource pool allocated to the AGN contract. To provide the required scalability, APA has sufficient partnering and external resourcing arrangements in place.

Appendix A APA IT ENVIRONMENT

8.6 Business Process Capabilities

Business process capabilities delivered by information technology systems are:

1. Managing market transactions
2. Issue and control of field work
3. Monitoring and recording gas deliveries to customer sites;
4. Emergency response
5. Monitoring network condition
6. Analysing network capacity
7. Recording the configuration and location of assets

8.7 Systems and functions

The integrated nature of these systems is demonstrated by the IT architecture diagram shown in the figure below:

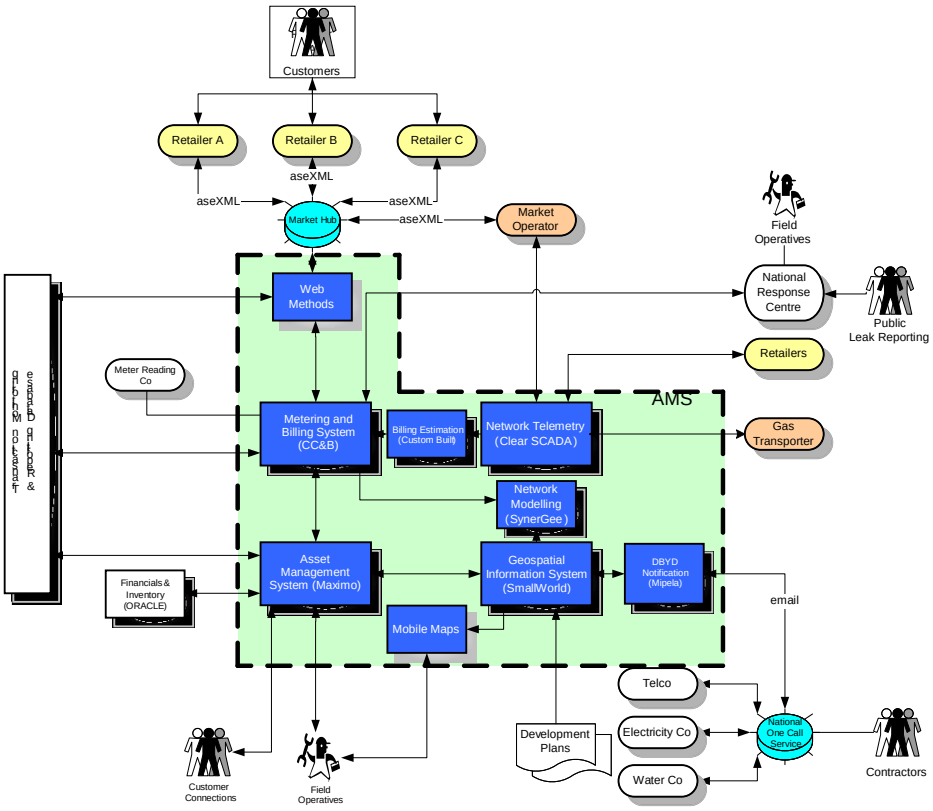


Table 11 lists the core IT applications supporting the South Australian AGN business, their functions and the planned projects for the 2017-2021 AAP impacting each application.

Table 11: Core AGN applications supported by APA, their functions and the planned projects for the 2017-2021 AAP impacting each application.

Application	Functions	Proposed projects in 2017-2021 AAP
FRC Market Gateway - Web Methods	Send & Receive Service Order Requests Send & Receive Meter Fix Send & Receive Customer Transfer requests	SA57 – upgrade & maintain
Meter Reading & Billing System – ORACLE CC&B	Transaction Workflow Meter Reading Delivery Point Billing	SA57 – upgrade & maintain
Enterprise Asset System – IBM Maximo	Planning Dispatching Work Job Completion Details Delivery Point Status Management Preventative Maintenance Contractor Payment Meter Management	SA57 – upgrade & maintain
Geospatial Information System- GE Smallworld	Map Base (Cadastre) Management Delivery Point Lifecycle Management Network Configuration/Connectivity Management Emergency Response Management Mains Extension & Replacement Planning	SA 58 – GIS Upgrade
Mobile Maps – LatLonGO	Asset Location – Emergency Response Asset Location – Customer Connection	SA59 - Mobility
Network Modelling System – Synergee	Capacity Strategic Planning Customer Connection Assessment Emergency Response	N/A
Dial Before You Dig - Mipela	Management of National Dial Before You Dig Enquiries Asset Location Notification	SA57 – upgrade & maintain
Network Telemetry System – ClearSCADA	Pressure Monitoring Interval Meter Monitoring & Reporting Custody Transfer Monitoring & Reporting	SA62 - SCADA Upgrade
Networks Interval Metering Data System – Historian OsiPi	Storage of SCADA data Billing information	SA57 – upgrade & maintain
Billing Estimation Module – custom built	Delivery Point Forward Estimate Interval Consumer Management Base Load & TSF Calculation	SA57 – upgrade & maintain

Appendix B DGA CONSULTING: COMPLIANCE WITH NGR

28/04/2015

Heather Reynolds
Vendor Manager, Group IT
APA Group
30 Currie Street
Adelaide SA 5000

Reference: Compliance with NGR

Dear Heather Reynolds:

Australian Gas Networks Limited (AGNL) is submitting a proposal for capital and operational investment to the Australian Energy Regulator (AER) as part of their upcoming access arrangement renewal. DGA Consulting was engaged to provide an expert independent review of the business cases as part of that submission. The purpose of this letter is to provide a view on AGNL's approach to its Business and Technology (B&T) projects, justification for the investment and alignment with the National Gas Rules (NGR).

In assessing AGNL's justification for investment in IT systems, DGA Consulting has considered the background and intent of the application. AGNL has described its approach as follows:

Over the past number of years Australian Gas Networks has made significant investments in a number of Business & Technology projects in order to improve the efficiency and effectiveness of its Information Technology (IT) application systems. These projects have delivered sustainable IT application systems, and aligned business processes, with increased scalability, flexibility and reliability, while also ensuring that Australian Gas Networks meets its obligations as set out in the Retail Market Procedures.

The Australian Gas Networks application systems environment constitutes a number of disparate application systems that are tightly integrated. With tightly integrated systems there is a resulting interdependency of the applications and their associated technologies. Upgrades to applications, and their associated technologies, are typically not completed in isolation of one another and due to this complexity will be run as internal Business & Technology (B&T) projects.

During the last Access Arrangement Period (pre FY17) a number of major projects to nationalise and upgrade key IT application systems were implemented. These projects provided improved IT application systems with increased scalability, flexibility and reliability, while also ensuring that Australian Gas Networks continues to meet its obligations as set out in the Retail Market Procedures.

The B&T projects delivered over the previous Access Arrangement period included:

- Billing Optimisation – Nationalising the Metering & Billing System (Oracle CC&B);
- National Works Management - Enterprise Asset Management (Maximo);
- Telemetry System – Nationalising the Telemetry System (Clear SCADA);

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- Historian Reporting – Nationalising the Historian Reporting System (OSi/PI);
- Billing Estimation Model – Nationalising the Billing Estimation Model (Accruals)

These projects delivered sustainable application systems and aligned business processes to ensure that Australian Gas Network's systems continue to meet current and future needs.

To maintain this considerable investment in business application systems, Australian Gas Networks will utilise an application lifecycle management methodology to determine upgrade timelines and priorities. An application upgrade roadmap, based on a stay in business program of work, will ensure that these application systems are kept up-to-date. This upgrade program will:

- Ensure upgraded applications continue to provide required integrated functionality to support business processes
- Ensure technology alignment with other co-existing technologies
- Ensure validity of support requirements with technology vendors
- Introduce appropriate new functionality
- Improve software performance

Software application assets are upgraded based on a 2 year cycle depending on the assets and the policies of the vendors for the frequency of upgrades. There exists interdependencies between the various software applications which are integrated to support business requirements. These interdependencies create a working construct of software applications, and associated technology platform components, that are at risk were they not maintained at compatible software release levels as prescribed by technology vendors.

An application upgrade plan is in place which is based on a stay in business program of work and ensures compliance with our underlying principle of staying at a minimum of (N-1) for application upgrades. This enables appropriate levels of operation and inter-operability between vendors.

Based on the application upgrade plan, the following Australian Gas Networks IT systems will be upgraded over the period FY17 to FY21:

- Billing Estimation Model - purpose built
- Dial Before You Dig - Mipela
- Metering & Billing System – Oracle, CC&B
- Enterprise Asset Management – IBM, Maximo
- Geospatial Information System – GE SmallWorld / ESRI
- Telemetry System - ClearSCADA
- Historian System – Osisoft PI System
- Full Retail Contestability Market Gateway - WebMethods
- Business Intelligence Reporting – Full Retail Contestability
- Middleware – Microsoft BizTalk
- Field Data / Mobility Systems

Key Drivers and Assumptions

- Critical IT applications are linked together and are reliant on each other to allow high volumes of transactions to flow from one to the other;
- It is necessary to ensure the full functionality of these linked critical IT application systems to satisfy retail market rules and Australian Gas Networks' business requirements;
- Significant IT investment has been made in recent years to ensure that Australian Gas Networks' application systems meet their obligations as set out in the retail market rules. Australian Gas Networks needs to ensure this investment is managed and maintained;
- A stay in business program of work is in place to apply upgrades to critical business IT application systems every two years;

- Work is to be undertaken using our Project Methodology which provides governance over tasks, activities and resourcing.
- Resourcing will be by qualified internal personnel and external contractors, sourced from trusted recruitment agencies based on specified requirements of skills and experience.

National Gas Rules Criteria

Justification	Applicability
the capital expenditure is necessary: (i) to maintain and improve the safety of services; or	Making this investment reduces the risk of failure of the critical systems or security breaches. Any failure will have impacts on the safety of services
the capital expenditure is necessary: (ii) to maintain the integrity of services; or	The integrity of the services will be impacted if there are risks on critical systems being available.
the capital expenditure is necessary: (iii) to comply with a regulatory obligation or requirement; or	Regulatory obligations would be breached if the systems were not available. (e.g. FRC requirements for processing timeframes)

DGA Consulting considers that AGNL's approach to the IT program of work complies with the NGR criteria in the following ways:

1. *It is Prudent*
   - The expenditure is necessary in order to maintain the integrity of services and comply with regulatory obligations and requirements. The alignment with industry practice of N-1 ensures ongoing vendor support and mitigates the risk of system outages and potential regulatory breaches
   - The application of version upgrades to critical business systems every 2 years is good industry practice as vendors typically provide at least one major and several minor upgrades or patches over that period
   - The interoperability of disparate applications must be constantly monitored in order to have visibility of potential incompatibilities. The application of version upgrades through a quality based testing regime mitigates any risks associated with this issue
   - The APA Group on behalf of AGNL have a long and sustained track record in the successful delivery and management of IT systems. They have put forward a prudent approach to functional improvement of the systems and ensured that they are aligned with their strategic themes of stakeholder inclusion, maintain reliability, improve the network and efficient outcomes.

2. *It is Efficient*
   - AGNL is using an application lifecycle management methodology which results in efficiencies from a quality based approach (reduces errors and rework)
   - AGNL views the FRC systems holistically, which requires efficient interoperability between applications
   - AGNL uses a project estimation and management methodology which applies ongoing historical data and learnings from previous projects, resulting in better resource management and cost estimation (this would be considered good practice in the software development life cycle and industry maturity models)
   - The justification for the business cases align with the strategic themes, and position AGNL to take advantage of new technologies such as field crew mobility, business intelligence and

remote meter reads to continuously improve the level and standard of service to customers and the ongoing safety of the network.

It is DGA Consulting's opinion that the AGNL IT Investment plan for the 2017 – 2021 period represents a prudent and efficient approach to the investment in and delivery of the portfolio of work articulated in the document.

Regards

Director