Final Plan Attachment 8.5

Information Technology Investment Plan

December 2016

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Contents

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 operation and maintenance of IT systems and infrastructure, that support the delivery of gas to customers in the various jurisdictions in which AGN operates.

AGN's critical IT systems are integral to the efficient and effective management of the Victorian and Albury networks and are required to meet a range of legal and regulatory obligations, including those prescribed in the:

- the National Gas Law (NGL) and National Gas Rules (NGR);
- the Victorian Gas Distribution System Code[1];
- the Victorian *Gas Industry Act 2001*[2], and
- the Victorian Retail Market Procedures[3] (RMP).

They are also required to meet Energy Safe Victoria's (ESV's) gas and pipeline safety requirements[4].

As a prudent operator, AGN has ongoing maintenance plans for its critical IT systems, which are based on appropriate risk assessments, to ensure continued compliance with these legal, regulatory and safety obligations.

The IT program, like many other aspects of AGN's proposal for the next (2018 to 2022) Access Arrangement (AA) period[5], 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 Liquefied Natural Gas (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 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 through economies of scale. To this end, AGN has in recent years commenced a national program of work to replace state-based IT systems with their enterprise equivalents servicing all five Australian jurisdictions in which AGN operates. Considerable progress has been made towards the

1 Essential Services Commission, "*Gas Distribution System Code*", Version 11.0.
2 http://www.austlii.edu.au/au/legis/vic/consol_act/gia2001167/
3 AEMO, http://www.aemo.com.au/Gas/Policies-and-Procedures/Retail-Gas-Market-Procedures/Victoria
4 http://www.esv.vic.gov.au/About-ESV
5 The period between 1 January 2018 to 31 December 2022

nationalisation of the IT systems and infrastructure in the current (2013 to 2017) AA period[6], including the installation of the Enterprise Asset Management (EAM) system, which supports key national business processes across all jurisdictions in which AGN operates. AGN plans to complete the nationalisation program of work in the next AA period.

All the projects identified in this IT Investment Plan (the Plan) are consistent with those that have recently been approved by the Australian Energy Regulator (AER) in its Final Decision on AGN's SA AA for the 2016/17 to 2020/21 AA period[7] and have adopted the same costing methodology that was approved through in that review. In approving the SA components of the individual projects, the AER noted that it was satisfied that the "*proposed capex is conforming capex that complies with rule 79 of the NGR*"[8]; it also acknowledged that these projects formed part of a national program, with an "*appropriate division of costs*"[9] between jurisdictions.

The successful delivery of the entire nationalisation program, and the subsequent support and maintenance of the implemented systems, depends on the program being approved in all jurisdictions, because under the nationalisation approach the systems are implemented, upgraded and supported at the national level, with individual jurisdictions contributing to the costs in accordance with the number of customers served across each of the networks. Rolling out these projects across all AGN networks is a more cost effective approach compared to implementing jurisdiction specific projects, because of the economies of scale achieved through streamlined implementation and business processes, standardised data models and data migration techniques, and by utilising existing hardware platforms.

1.2. IT expenditure in the current AA period

The IT capex in the current AA period is projected to be $21.7 million[10].

In the current AA period, considerable progress has been made towards the nationalisation of AGN's IT systems and infrastructure. The major projects implemented during the current AA period have built the platforms to leverage efficiencies in business operations through data consolidation, enablement of standard national processes and task automation. The majority of these platforms will be fully delivered in the current AA period. The timeline of the IT program of work highlighting the nationalisation projects delivered in the current AA period and those planned for the next AA period is provided in Figure 1. Further detail on the outcomes of the current period and why the expenditure is consistent with rule 79 of the NGR is provided in Section 4.

6 The period between 1 January 2013 to 31 December 2017.

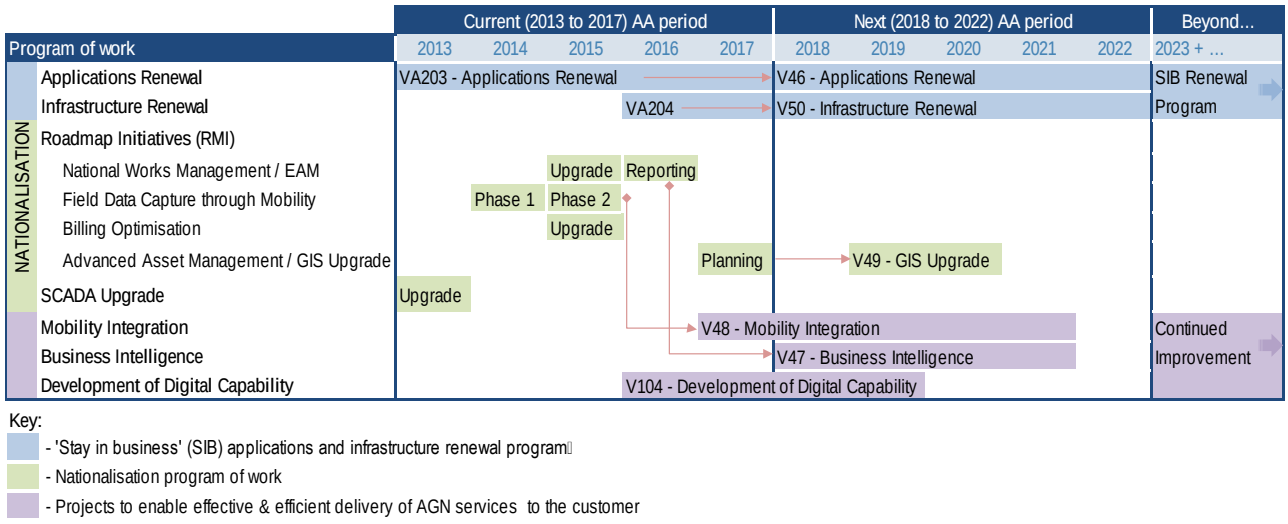
7 AER, "*Final Decision: Australian Gas Networks Access Arrangement 2016 to 2021, Attachment 6 – Capital Expenditure*", May 2016, pg. 6-33.

8 AER, *"Draft Decision: Australian Gas Networks Access Arrangement 2016 to 2021, Attachment 6 – Capital expenditure"*, November 2015, pg. 6-41, 6-42, 6-43 and AER, *"Final Decision: Australian Gas Networks Access Arrangement 2016 to 2021, Attachment 6 – Capital Expenditure"*, May 2016, pg. 6-35.

9 See, for example, GIS project assessment in AER, "*Draft Decision: Australian Gas Networks Access Arrangement 2016 to 2021, Attachment 6 – Capital expenditure"*, November 2015, pg. 6-42.

10 $2016.

Figure 1: Timeline of the IT program of work during the current and the next AA periods



1.3. IT Investment Plan for the next AA period

Over the next AA period (2018-2022) AGN proposes to spend $62.4m[11] ($2016) on a range of IT projects, with $60.3m to be spent on the Victorian network and $2.1m on the Albury network as provided in Table 1.

Table 1: Capex Breakdown Between Victoria and Albury Networks ($m real $2016)

Network-specific capex	2018	2019	2020	2021	2022	Total
Capex - Victoria	10.9	23.0	15.6	5.0	5.8	**60.3**
Capex - Albury	0.4	0.8	0.5	0.2	0.2	**2.1**
Capex - Total	**11.3**	**23.8**	**16.1**	**5.1**	**6.0**	**62.4**

Note: Totals may not exactly match the sum of individual costs due to rounding.

This expenditure is required to:

- complete the nationalisation program of work commenced in the current AA period;
- maintain the current levels of IT services and mitigate risks associated with AGN's core business systems across all Australian jurisdictions that AGN operates in; and
- enable effective and efficient delivery of AGN services to the customer and ensure regulatory compliance.

Specifically, the expenditure is required to address the following key areas:

- **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 next AA period:
  - the ongoing IT Applications Renewal and Infrastructure Renewal programs are required to maintain the security and integrity of the IT environment and to keep technology risks at an acceptable level; and

[11] Unless otherwise stated, all costs in this document are expressed in real 2016 dollars and excludes overheads and real cost escalation.

- the legacy Geospatial Information Systems (GIS) suite needs to be replaced because it is no longer supported by the vendor and is becoming increasingly unstable and more difficult and expensive to maintain.

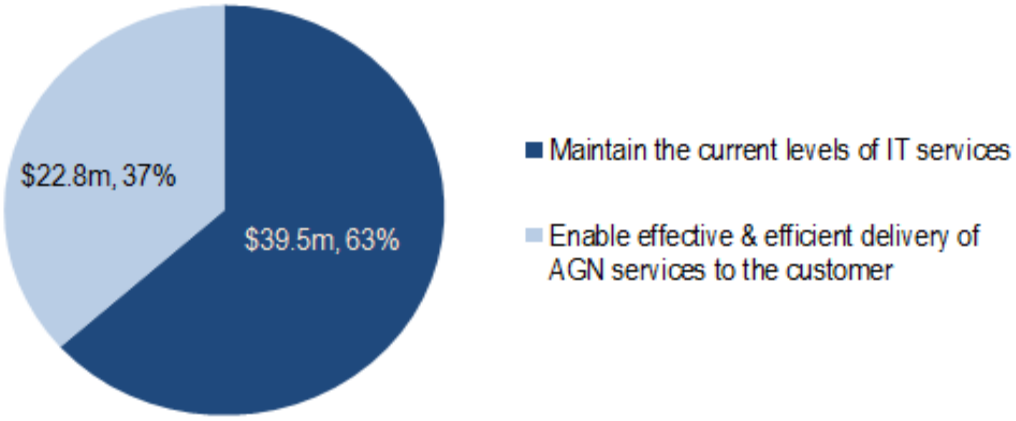
These initiatives account for approximately 63% of the total IT capex forecast for the next AA period.

- **Enable effective and efficient delivery of AGN services** to the customer and ensure compliance with regulatory obligations. The service delivery initiatives planned for the next AA period are Mobility Integration, Business Intelligence and Development of Digital Capability initiatives. These initiatives will enable AGN to drive further efficiencies, make a range of improvements to the level of customer service and the safety, security and integrity of services. Specifically:
  - Mobility Integration will deliver an enhanced mobile communications platform, which will enable field data capture into core operational systems, facilitate the integration of field data into the EAM suite of IT applications and provide the latest information to field crews;
  - Business Intelligence will deliver enhanced capability for informed decision making in relation to the network asset lifecycle processes, which are expected to result in improvements in customer service, safety and integrity of services and compliance with regulatory obligations; and
  - Development of Digital Capability will consolidate five AGN websites into one and provide an improved gas connection customer experience.

These initiatives account for approximately 37% of the total IT capex forecast for the next AA period.

The breakdown of the IT capex by the IT investment categories described above is provided in the Figure 2 below.

Figure 2: Breakdown of IT capital expenditure by investment category



The IT capex required to deliver the program of work for Victoria and Albury over the next AA period has been estimated using a cost allocation method based on Victoria and Albury's proportion of end consumers serviced by AGN across all Australian jurisdictions AGN operates in.[12]

[12] It is worth noting that in approving the SA components of the individual projects, the AER acknowledged that these projects formed part of a national program, with an "*appropriate division of costs*" between jurisdictions. See, for example, GIS project assessment in

In accordance with the nationalisation approach, the proposed projects will be implemented under strict governance and project management controls to ensure that the projects are carried out in a prudent and efficient manner.

It is worth noting in this context that the proposed expenditure in the next AA period is substantially higher than the expenditure that has been incurred in the current period. One of the main reasons for this, which KPMG identified in its IT expenditure benchmark report (please see Attachment 8.7 to our Final Plan for further information), is that AGN has consistently underinvested in IT relative to its peers in the previous and current AA periods[13]. As evident from the recent regulatory proposals[14], many of AGN's counterparts have already implemented, or are in the process of implementing, capabilities relating to GIS, Mobility and Business Intelligence described in this Plan. Therefore, the proposed investment over the next AA period, will allow AGN to catch up to the rest of the industry.

The breakdown of the planned IT capex by IT initiative over the next AA period is provided in Table 2.

Table 2: Breakdown of Proposed Capex by Initiative ($2016, million)

ID	IT initiative	2018	2019	2020	2021	2022	Total
V46	Applications Renewal	4.6	3.4	4.7	3.4	6.0	**22.0**
V50	Infrastructure Renewal	0.8	0.5	-	-	-	**1.3**
V49	GIS Upgrade	-	11.1	4.9	0.2	-	**16.2**
V48	Mobility Integration	2.6	3.2	3.2	1.4	-	**10.4**
V47	Business Intelligence	2.6	5.0	3.4	0.1	-	**11.1**
V104	Digital Capability	0.7	0.6	-	-	-	**1.4**
Total		**11.3**	**23.8**	**16.1**	**5.1**	**6.0**	**62.4**

Note: Totals may not exactly match the sum of individual costs due to rounding.

AER, "*Draft Decision: Australian Gas Networks Access Arrangement 2016 to 2021, Attachment 6 – Capital expenditure*", November 2015, pg. 6-42.

13 KPMG, *"IT Expenditure Benchmarking Australian Gas Networks Victoria & Albury"*, July 2016, pg.13.

14 See, for example:

- SAPN, *"SA Power Networks Regulatory Proposal 2015-2020, Attachment 20.40: IT Enterprise Asset Management Business Case"*, July 2015 pg.69.
- AER, "Final Decision: SAPN determination 2015-16 to 2019-20", Attachment 6, pg. 6-120.
- Jemena Electricity Networks (Vic) Ltd 2016-20 Electricity Distribution Price Review Regulatory Proposal, Attachment 7-7, IT Asset Management Plan (2016-2020), 30 April 2015.
- AER, "Draft Decision: JGN Access Arrangement 2015-20", November 2014, Attachment 6, pg. 6-42.
- AER, "Preliminary Decision: Jemena distribution determination 2016 to 2020", October 2015, Attachment 6, pg. 6-94.
- AER, "Final Decision: Ergon Energy determination 2015-16 to 2019-20", October 2015, Attachment 6, pg. 6-120.
- AER, "Final Decision: Energex determination 2015-16 to 2019-20", October 2015, Attachment 6, pg. 6-10.
- AusNet Services, *"Electricity Distribution Price Review 2011-2015 Regulatory Proposal"*, November 2009, pg. 158
- Multinet, *"Gas Access Arrangement Review January 2013-December 2017 AAI"*, 30 March 2012, pg. 85.

1.3.1. Benefits of the proposed IT investment in the next AA period

The benefits that justify the IT initiatives included in this IT Investment Plan are detailed in Section 5 of this document and in the individual business cases provided in Attachment 8.6 to our Final Plan. In summary, the key benefits from these initiatives are detailed in Table 3.

Table 3: Key Benefits of the IT Proposal

Business Case	IT initiative	Summary of key benefits
V46 & V50	Application and Infrastructure Renewals	• Maintain security and integrity of business information and mitigate the risk of failure of critical business systems
V49	GIS Upgrade	• Mitigate significant safety and financial risks associated with an unsupported GIS application • Complete the implementation of standardised national processes to simplify data management and maintain integrity of spatial and asset data • Ensure the continued delivery of reliable AGN data to the Australian Energy Market Operator (AEMO) and other stakeholders, in order to comply with regulatory obligations
V48	Mobility Integration	• Deliver tangible benefits of cost savings and avoided capital and operating expenditure • Reduce effort associated with manual data entry, validation, error handling and correction of information collected by field crews • 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 • Improve employee and contractor safety through access to improved asset data, streamlined safety tools and processes and real-time access to corporate knowledge such as the latest version of technical work instructions
V47	Business Intelligence	• Deliver tangible benefits of cost savings and avoided capital and operating expenditure • Improve data quality and decision-making capability; in particular, enhance asset management decision-making, including asset failure prediction informing targeted maintenance and asset replacement activities
V49, V48 & V47	GIS Upgrade, Mobility Integration and Business Intelligence	• Streamline technical, regulatory and legislative compliance reporting to ensure compliance obligations are met and reported on appropriately
V104	Digital Capability	• Provide a modern digital customer experience resulting in improved customer service for the gas connection process and 24/7 access to a single website for gas leak reporting and safety information

Through the prudent investment in IT systems and processes defined in this Plan, there will be the resulting benefits in AGN's Victorian and Albury network businesses, estimated at $9.8 million ($2016) over the next AA period.

1.3.2. Consistency of the proposed expenditure with the NGL and NGR

AGN operates its networks in accordance with the National Gas Law (NGL) and NGR. The overarching objective of the NGL is set out in the National Gas Objective (NGO), which states that

the objective of the NGL is to "*promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply*".

AGN's proposed investment in the next AA period 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 ongoing safety, reliability and security of supply is managed in a cost effective way, which is in the long-term interests of consumers.

The proposed expenditure also complies with the new capex criteria in rule 79 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 (rule 79(1)(a)); and
- justifiable under rule 79(2)(c) because it is required to maintain and improve the safety of services, maintain the integrity of services and comply with regulatory obligations and commitments.

The proposed expenditure on the Mobility Integration and Business Intelligence projects are also justifiable under rule 79(2)(a) because the overall economic value of the project is positive.

Further details on the consistency of the proposed IT expenditure with the NGR are provided in Section 5.4 of this document and in the respective business cases.

1.3.3. Alignment of proposed expenditure with stakeholder feedback and strategic objectives

1.3.3.1. Stakeholder Insights

We are committed to operating our networks in a manner that is consistent with the long-term interests of our customers. To facilitate this, we have implemented a stakeholder engagement program to understand and respond to the priorities of our customers and stakeholders.

A key outcome of AGN's stakeholder engagement program was drawing upon stakeholder values and insights to identify four operational themes:

- *Customer Service* - customers would like AGN to be more visible and have access to more information.
- *Reliability* - customers value AGN's high level of reliability and want AGN to maintain this service level.
- *Safety* - stakeholders want AGN to explore ways in which services can be improved, particularly as it relates to safety.
- *Efficient* - customers are concerned with rising costs in general and they want AGN to promote efficient price outcomes for consumers of natural gas.

The main focus of AGN's proposed IT investment for the next AA period is directed to the **Reliability, Safety** and **Efficient** themes, reflecting stakeholders' preference for AGN to prudently and efficiently maintain its current reliability and service levels, and improve the safety of the network.

Accordingly, this IT Investment Plan is focused primarily on maintaining the existing IT environment and services whilst reducing a range of IT related safety risks, 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 Digital Capability

will provide the foundations for future digital capabilities that AGN plans to develop to achieve the **Customer Service** theme objectives.

The mapping of the planned IT program of work to the AGN stakeholder engagement themes is provided in Table 4. Further information detailing how the IT investment planned for the next AA period is aligned to the business strategy is provided in Section 5.5 of this document.

Table 4: Mapping Between IT Investment Categories, IT Initiatives and Stakeholder Engagement Themes

IT investment categories	ID	IT initiatives	Stakeholder engagement themes			
			Customer Service	Reliability	Safety	Efficient
Maintain the current levels of IT services	V46	Application Renewal Program		✓	✓	
	V50	Infrastructure Upgrades		✓	✓	
	V49	GIS Upgrade		✓	✓	
Enable effective & efficient delivery of AGN services to the customer	V48	Mobility Integration	✓	✓	✓	✓
	V47	Business Intelligence	✓	✓	✓	✓
	V104	Digital Capability	✓			✓

Importantly, we tested our understanding and incorporation of customer insights though the issue of our Draft Plan in July 2016 and through further customer and stakeholder workshops. The Draft Plan and workshops highlighted our proposed IT investment, with the proposed expenditure consistent with that outlined in this Plan.

Stakeholders were supportive of the proposed IT capex, noting the investments already made in the current period and the AER's approval of the national IT program in South Australia. Customers agreed that we had understood their values correctly and were supportive of the incorporation of their feedback in our Plans.[15]

Further information on our Stakeholder Engagement Program is provided in Chapter 5 of the AGN Final Plan.

1.4. IT Investment Plan governance and deliverability of the plan

This IT Investment Plan has been developed using AGN's standard business investment governance framework, the key elements of which include:

- ensuring consistency of the IT investment with the NGR;
- alignment with stakeholder expectations and business needs analysis;
- business-led prioritisation process;
- a robust standardised costing methodology;

[15] As outlined in the Deloitte Stakeholder and Customer Feedback Report, December 2016. Provided at Attachment 5.10 to the Final Plan.

- business case development with clear links to business strategy and defined benefits aligned to AGN's customer expectations and priorities; and
- formal approval by an independent Governance Forum, e.g. the full AGN Board and the APA Board or the APA Group Transformation Committee, depending on the size of the project.

These elements are described in more detail in Section 3 of this document.

AGN, in partnership with APA, has demonstrated its ability to deliver annual programs of work of similar size during the current AA period. AGN has robust controls in place to ensure successful delivery of the program of work planned for the next AA period. The key controls include:

1. executive management support;
2. strict governance processes;
3. a sound project management methodology including robust risk analyses which are revisited regularly throughout the life of the project;
4. internal stakeholder involvement throughout the lifecycle of each project; and
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 AA period. 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 ensure deliverability of the Plan. Further details on deliverability of this Plan are provided in Section 6 of this document.

2. Introduction

The purpose of this document is to describe AGN's IT Investment Plan and to provide an overview of the expenditure that has been incurred in the current AA period (2013-2017) and the expenditure proposed for the next AA period (2018-2022). This plan should be read in conjunction with the following documents outlined in Table 2 below.

Table 5: Referenced Documents

Document title	Reference
Australian Gas Networks Customer Insights Report, Victorian and Albury Stakeholder Engagement Program	Attachment 5.7 to AGN's Final Plan
IT Expenditure Benchmarking Australian Gas Networks Victoria & Albury	Attachment 8.6 to AGN's Final Plan
V46 Applications Renewal	Attachment 8.6 to AGN's Final Plan
V47 Business Intelligence	Attachment 8.6 to AGN's Final Plan
V48 Mobility Integration	Attachment 8.6 to AGN's Final Plan
V49 GIS Upgrade	Attachment 8.6 to AGN's Final Plan
V50 Infrastructure Renewal	Attachment 8.6 to AGN's Final Plan
V104 Development of Digital Capability	Attachment 8.6 to AGN's Final Plan

The remainder of this document is structured as follows in Table 6.

Table 6: Structure of the IT Investment Plan

Section	Title	Description
3.	IT Investment Plan Governance	Describes the governance processes that were followed during the development of this Plan and related business cases.
4.	Expenditure in the Current Period	Outlines the program of work implemented during the current AA period and the benefits delivered to AGN and its customers.
5.	IT Plan for the Next AA Period	Describes the program of work planned for the next AA period, the expected benefits of the investment, the consistency of the investment with the NGL and NGR, stakeholder feedback and AGN's strategic objectives
6.	Deliverability of the IT Investment Plan	Explains how the IT program of work planned for the next AA period will be delivered and outlines the organisational processes and controls to enable an on-time and on-budget delivery and ensure prompt realisation of the identified benefits.

3. IT Investment Plan Governance

This IT Investment Plan has been developed using AGN's standard business investment governance framework, the key elements of which include:

1 ensuring consistency of the IT investment with the NGR;

2 strategic alignment and business needs analysis;

3 business-led prioritisation process;

4 a robust standardised costing methodology;

5 business case development with clear links to business strategy and defined benefits aligned to AGN's customer expectations and priorities; and

6 formal approval by an independent Governance Forum, e.g. the full AGN Board and the APA Board or the Group Transformation Committee, depending on the size of the project.

These elements are described in the following sections.

3.1. Ensuring consistency with NGR

To ensure that the IT Investment Plan as a whole meets the NGR requirements, all business cases must demonstrate why the proposed expenditure satisfies the tests set out in rules 79 (Capex) and 91 (Opex) of the NGR.

The details on how this IT Investment Plan is consistent with the NGR are provided in Section 5.4

3.2. Alignment to stakeholder expectations and AGN's strategic objectives

The stakeholder insights gained during the AGN's stakeholder engagement program for Victoria and Albury (summarised in Deloitte's Customer Insights Report (provided as Attachment 5.7 to AGN's Final Plan)) have been used by AGN to evaluate and inform its business plans, in conjunction with a consideration of its regulatory obligations.

AGN leverages APA's IT services to enable the achievement of its business objectives. 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.

The alignment of this IT Investment Plan to stakeholder expectations and AGN's IT Strategic Objectives is demonstrated in Section 5.5.

3.3. Business-led prioritisation process

IT projects are identified during AGN's annual strategic planning and budgeting cycle and are then submitted to the AGN Board for approval in principle as part of AGN's IT Strategic Plan.

3.4. Robust standardised costing methodology

All projects included in this IT Investment Plan are national projects. The total project costs have therefore been estimated based on the work that is needed to be carried out across all Australian jurisdictions that AGN operates in. The total project cost is then allocated to state-specific AGN

networks based on the customer numbers across each of the networks, to ensure that the cost allocations used reflect how AGN ultimately allocates costs to customers served from these networks. As at 31 December 2015, Victoria and Albury accounted for 51.35% and 1.79% of AGN's total customer numbers, respectively.

The approach that AGN has used to estimate the total project costs for all projects included in this Plan and its proposed approach to carrying out the work is outlined below:

- AGN utilises an industry standard Business and Technology (B&T) Project Methodology, which is managed through formal governance. This B&T Project Methodology divides the projects into key stages – concept, develop, plan, deliver and close. Each stage consists of key tasks and activities to ensure consistency and standardisation across projects. The project methodology is outlined in Appendix B.
- To ensure project estimates are developed in a consistent manner, an Estimation Tool is used, which is aligned with the B&T Project Methodology. This estimation tool has been used to forecast the work effort and cost estimates for all projects included in this Plan. This estimation tool utilises historic figures from the current AA period for resource work effort estimates. All historic figures are sanity checked to ensure any changes to the way historical projects were carried out are taken into account. The work effort estimates are based on a complexity matrix tool, which uses a series of questions to categorise projects into simple, medium and complex.
- The material and direct labour costs, and applicable planning, design and commissioning charges, are based on historic actual costs of similar projects and on vendor quotes that are subject to a competitive tendering process in accordance with the APA Procurement policy and guidelines[16]. Resource Unit Costs (both internal and external) are based on AGN's research, where actual placement costs have been used based on historical project resources and current resourcing rates (2016).
- The historic figures and work effort estimates are used as inputs into the final estimates, which are subject to stringent review and endorsement by members of the IT Estimates Review Committee. The work effort, cost and timing of projects are monitored throughout the project lifecycle to ensure on time and on budget delivery.
- When implementing the project, AGN will use a formalised Project Methodology and utilise a combination of internal and external resources to deliver the program of work. The Project Methodology is outlined in Appendix B and provides a consistent, standard and quality assured project implementation framework, ensuring that the work is carried out in a prudent and efficient manner.

It should be noted that the same costing methodology was used in the South Australian IT Investment Plan for the FY2016/17 to FY2020/21 AA period, which has been recently approved in its entirety by the AER in its Final Decision on the South Australian AA for the 2016 to 2021 AA period[17]. In approving the capex for each of the projects in South Australia, the AER noted that it was satisfied that the proposed expenditure was such as "*would be incurred by a prudent service provider acting efficiently*" and was justifiable under rule 79(2) of the NGR. This assessment by the AER provides further support that AGN's methodology yields cost estimates that would be incurred in an efficient manner.

[16] Available upon request.

[17] AER, "*Final Decision: Australian Gas Networks Access Arrangement 2016 to 2021",* Attachment 6 – Capital Expenditure, May 2016, pg. 6-33.

3.5. Business case development with clear links to business strategy

The IT business cases referred to throughout this Plan have been developed according to a corporate methodology to ensure the investment is prudent and the most efficient option is selected. This methodology includes:

- options analysis (including cost-benefit analysis); and
- justification of preferred option based on the NGR and the AER's expenditure assessment guidelines.

3.6. Formal approval by an independent Governance Forum

All projects in this IT Investment Plan have been approved in accordance with AGN's standard governance processes and capex evaluation procedures.

The AGN IT Investment Plan review and approval process has included:

- review of all upcoming IT projects conducted during AGN's annual strategic planning and budgeting cycle;
- submitting the projects for the next period to the AGN Board for approval in principle as part of AGN's Strategic plan;
- mandatory business case approval for all projects by the AGN Board or AGN CEO depending on the cost; and
- setting up a conventional governance structure for IT projects including a project manager and project sponsor with oversight by the AGN IT Steering Committee which is made up of senior AGN executives (including the CEO) and senior APA executives.

More information on the implementation of project governance is provided in Section 6.

As the provider of IT services to AGN, APA is also subject to a number of internal approval processes including:

- approval of all projects by the Transformation Committee, consisting of APA's executives and managing director; and
- approval of projects at APA Board level, depending on cost.

More detail on the APA IT governance structure and processes is provided in Section 6.

4. Expenditure in the Current Period

4.1. Projects approved by the AER

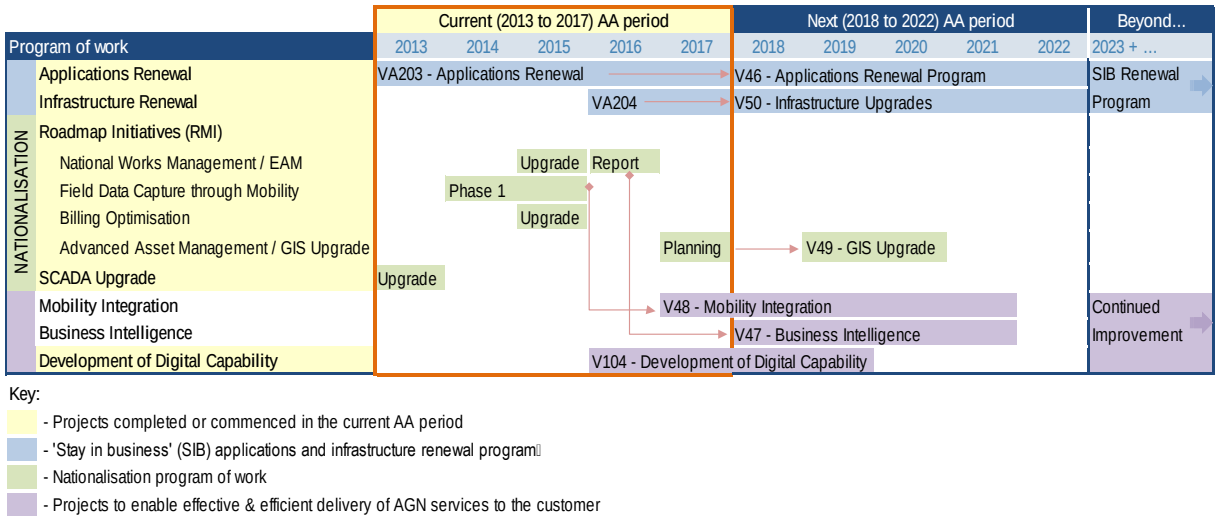
The AER approved the following projects for the current AA period:

- VA202 Roadmap Initiatives (RMI), consisting of the following four projects:
  - National Works Management (or Enterprise Asset Management (EAM));
  - Field Data Capture;
  - Billing Optimisation; and
  - Advanced Asset Management;
- VA203 Critical Business IT Applications Upgrades and Renewals; and
- VA204 IT Infrastructure Upgrades and Renewals.

4.2. Projects delivered

The timeline of the IT program of work highlighting the projects undertaken in the current AA period is provided in Figure 3 below.

Figure 3: Timeline of the AGN IT program work highlighting the current (2013 to 2017) AA period



As can be seen from the above timeline (see Figure 3), the program of work for the current AA period includes all projects approved by the AER as well as several additional projects. These additional projects were required to mitigate significant business risks and enable AGN to deliver upon its business and customer service objectives. The description of the major projects delivered or commenced in the current AA period is provided in the following sections.

4.2.1. Approved projects

In line with AGN's strategy to nationalise major IT applications, the original scope of the RMI projects was expanded to implement national applications servicing all jurisdictions and the timing of individual projects was adjusted to allow for a national roll-out of each application.

As described in Section 1, the key reason for embarking on the nationalisation program was to obtain maximum value from the economies of scale by replacing state-based IT systems with enterprise equivalents servicing all jurisdictions in which AGN operates.

The following major projects to nationalise key IT applications were implemented successfully in the current AA period as part of the RMI program:

- National Works Management through EAM; and
- Billing Optimisation – Nationalising the Metering & Billing System (MnB).

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. Together with the prudent cycle of application and infrastructure renewals, these major nationalisation projects delivered sustainable fully resilient infrastructure and application systems, aligned with business processes.

Whilst the above two projects have been completed, the remaining two projects from the RMI program, namely, Advanced Asset Management and Field Data Capture, have been deferred and are scheduled to commence in 2017. These projects were deferred to the end of the current AA period because they were dependent upon the EAM being implemented and also because completing these projects concurrently with the other large nationalisation projects was considered high risk. They have also been expanded to some extent and will therefore continue into the next AA period as follows:

- **Advanced Asset Management / GIS Upgrade:** The original scope of the Advanced Asset Management project has been expanded to include the nationalisation of GIS applications across all jurisdictions. This project is now included in the next AA period program of work as V49 – GIS Upgrade project, although the Procurement, Develop and Plan phases of this project will be conducted in the current AA period using the allowance previously approved by the AER for the Advanced Asset Management project. An overview of the GIS Upgrade project is provided in Section 5.1.3 of this document and the full detail can be found in Business case V49[18].
- **Mobility Integration (which is broader than and includes Field Data Capture):** The Field Data Capture project has been superseded by the Mobility Integration project which, in turn, forms part of the National Mobility Strategy and Roadmap. The V48 - Mobility Integration project has been included in the next AA period program of work and is scheduled to start in 2017, together with an equivalent South Australian project that has been recently approved by the AER. An overview of the Mobility Integration project is provided in Section 5.2.1 of this document and the full detail can be found in the Business case V48[19].

4.2.2. Additional projects

In addition to the projects approved by the AER for the current AA period, AGN undertook the following projects:

- **SCADA Upgrade.** The project to upgrade the Citect Supervisory Control and Data Acquisition (SCADA) software was not included in the AER allowance. This project, which cost $1.5m, was approved by the AGN Board in 2012. The Citect SCADA technology was running on an unsupported operating system, which presented a significant risk to AGN operations. Further to this, it was identified that there was no Disaster Recovery (DR) capability for Citect SCADA version deployed in Victoria. It was therefore deemed prudent to mitigate this risk by upgrading Citect SCADA to ClearSCADA in line with the AGN National SCADA roadmap and

[18] Provided in Attachment 8.6 to AGN's Victorian & Albury Final Plan.
[19] Provided in Attachment 8.6 to AGN's Victorian & Albury Final Plan.

providing DR capability. The SCADA Upgrade project commenced in the final year of the (2008 to 2012) last AA period and completed in the current AA period.

- **Development of Digital Capability.** This project is to address increased customer expectations in relation to access to digital solutions. AGN's current systems for digital communications are outdated (or in some cases, non-existent) and do not provide the means to be able to effectively communicate with the community. AGN seeks to consolidate 5+ existing legacy websites and build a new digital platform that will enable further improvements to customer interactions. The Development of Digital Capability project commenced in 2016 and will continue into the next AA period. This Business Case follows on as the Victorian capex component to that approved by the AER in the recent SA Access Arrangement. An overview of this project is provided in Section 5.2.3 of this document and the full detail can be found in the Business case V104[20].

All changes to the original program of work approved by the AER were managed via the appropriate governance process in accordance with the AGN's and APA's standard governance processes and capex evaluation procedures.

4.3. Expenditure in the current period and reconciliation to the AER approved allowance

IT capex in the current AA period is projected to be $21.6m compared with $17.3m approved by the AER in its last decision. A breakdown of the AER allowance, the actual (or forecast) cost and the variance by project is provided in Table 7 below.

Table 7: AER allowance vs actual / forecast costs in 2013-2017 AA period ($000, 2016, direct costs only)

ID	Project	AER Allowance, ($000, 2016)	Actual / Forecast, ($000, 2016)	Actual minus Allowance
Projects Approved by the AER				
VA202	**IT Roadmap Initiatives (RMI)**			
	National Works Management	2,611.4	6,379.5	3,768.1
	Field Data Capture	1,436.8	569.5	(867.3)
	Billing Optimisation	6,271.2	4,616.2	(1,655.0)
	Advanced Asset Management / GIS Upgrade	4,570.8	3,270.9	(1,299.9)
	Total IT Roadmap Initiatives	**14,890.1**	**14,836.1**	**54.0**
VA203	**Application Upgrades and Renewals**	**1,371.7**	**3,329.8**	**1,958.1**
VA204	**IT Infrastructure Upgrades and Renewals**	**848.0**	**624.4**	**(223.6)**
Projects Not Included in the AER Allowance				
N/A	SCADA Upgrade	-	823.5	823.5

[20] Provided in Attachment 8.6 to AGN's Victorian & Albury Final Plan.

V48	Mobility Integration	-	1,170.7	1,170.7
V104	Development of Digital Capability	-	811.6	811.6
Total Projects not included in the AER Allowance		**-**	**2,805.8**	**2,805.8**
	GRAND TOTAL	**17,304.7**	**21,596.1**	**4,594.3**

Note: Totals may not exactly match the sum of individual costs due to rounding.

The IT capex for the current AA period is forecast to be higher than the AER approved allowance for the following key reasons.

- The $2.0m overrun for the VA203 Application Upgrades and Renewals because of:
  - The upgrade cost for the newly implemented EAM system was significantly higher than the upgrade costs included in the original business case VA203. The cost in the original business case was based on the scope and the functionality of the original Works Management system, and this was significantly expanded as a part of the nationalisation program.
  - The upgrades for DBYD system were not included in the original VA203 program of work.
  - The renewals of legacy systems (e.g. Historian) were more complex than initially expected due to excessive customisations inherent in these systems. It should be noted that the new enterprise systems deliver 'out of the box' functionality, removing significant complexity inherent in the legacy systems which prevented regular maintenance upgrades. The new enterprise systems will be maintained through the Stay-in-Business (SIB) Application and Infrastructure Renewal program of work removing the need to implement excessive customisations in the future.
- The $2.8m spend on new projects not previously approved by the AER. This spend was required to:
  - mitigate significant business risk associated with CITECT SCADA software by upgrading to a new and vendor supported SCADA application;
  - commence the Mobility Integration project at the same time as that in South Australia. The South Australian Mobility Integration project has been approved by the AER and is scheduled to commence in 2017. It was considered prudent to commence the Victorian and Albury part of this project together with the South Australian part of the project so that the economies of scale, in particular, those related to planning, testing and roll-out of the solution, could be fully realised; and
  - commence developing Digital Capability to provide customers with methods of accessing AGN information and services that is in line with current expectations of being able to access information and transact 24/7.

Finally, it is worth noting that during the current AA period, AGN has improved its project management / implementation methodology in line with good industry practice. The new methodology (described in Section 6 of this document) has significantly improved the accuracy of project estimates and the overall success rate of project delivery on time and on budget as demonstrated through the successful delivery of the EAM and MnB projects.

4.4. Consistency of IT investment in the current AA period with the NGR

The major projects completed or commenced during the current AA period comply with the new capex criteria in rule 79 of the NGR because the expenditure 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 (rule 79(1)(a)) as highlighted by the findings of KPMG's IT expenditure benchmark study (see Box 1);[21] and
- justifiable under rule 79(2)(c) because it is required to maintain and improve the safety of services, maintain the integrity of services and comply with regulatory obligations and commitments (see Table 8).

Table 8: Outcomes of the Current Period – consistency with the NGR

NGR	NGR Criteria	Current Period Outcome
79(2)(c)	The capital expenditure is necessary:	
(i)	To maintain and improve the safety of services	VA203 Applications and V204 Infrastructure Renewal - This investment reduced the risk of failure of the critical systems as well as security breaches. VA202 Roadmap Initiatives (RMI) – This investment enabled AGN to continue to deliver reliable, accurate and timely responses to industry transactions (e.g. connections, transfers, service orders), maintain the reliability of supply to consumers and address the identified high risk of potential customer and business interruptions. V49 GIS Upgrade - This investment mitigates the risk of the legacy GIS system failing for a period of time, which has been rated as Extreme during the latest risk assessment due to significant safety implications for the business and for the public. V48 Mobility Integration – This investment decreases health and safety risk to both the workforce and to the public by providing the right information to the right people in an appropriate format and context to meet immediate specific requirements. V104 Development of Digital Capability – This investment improves public safety by providing 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	VA203 Applications and V204 Infrastructure Renewal - The integrity of the services was improved by updating the applications and infrastructure on a regular basis. VA202 Roadmap Initiatives (RMI) - This investment enabled AGN to maintain the integrity of the network assets by upgrading the core applications to new technologies that are supported by vendors. V49 GIS Upgrade - 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.

[21] KPMG, *"IT Expenditure Benchmarking Australian Gas Networks Victoria & Albury"*, July 2016.

		V48 Mobility Integration – This project will result in less operational errors from manual processing of data and allow increased amounts of accurate data to be extracted and utilised for improved decision making, which will, in turn, improve the integrity of services. V104 Development of Digital Capability – Consolidation of five 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	V203 Applications and V204 Infrastructure Renewal - the risk of breaching the Retail Market Procedures was reduced. VA202 Roadmap Initiatives (RMI) – This investment allowed AGN to address the significantly increasing risk of non-compliance with relevant regulations and legislation due to the constraints of securing and maintaining applications that are over 10 years old in today's technological environment. V49 GIS Upgrade - Regulatory obligations may be breached if the GIS is not available. V48 Mobility Integration – This investment will streamline data capture and reporting required to meet AGN's regulatory obligations.

4.5. KPMG's IT Expenditure Benchmarking

AGN's recent and proposed IT expenditure has been independently assessed by KPMG by comparing our historic and forecast IT capex and opex against that of other Australian gas and electricity distributors. This report has been provided as Attachment 8.7 to AGN's Final Plan.

KPMG's study indicates that AGN's historic IT expenditure "*has been low when compared to the industry*"[22]. In particular, the IT investment in the previous AA period has been "*amongst the lowest in the industry*" [23] and this "*under-investment in IT in the previous [AA period] has led AGN Vic/Alb to be out of step with the industry on its technology capabilities*"[24].

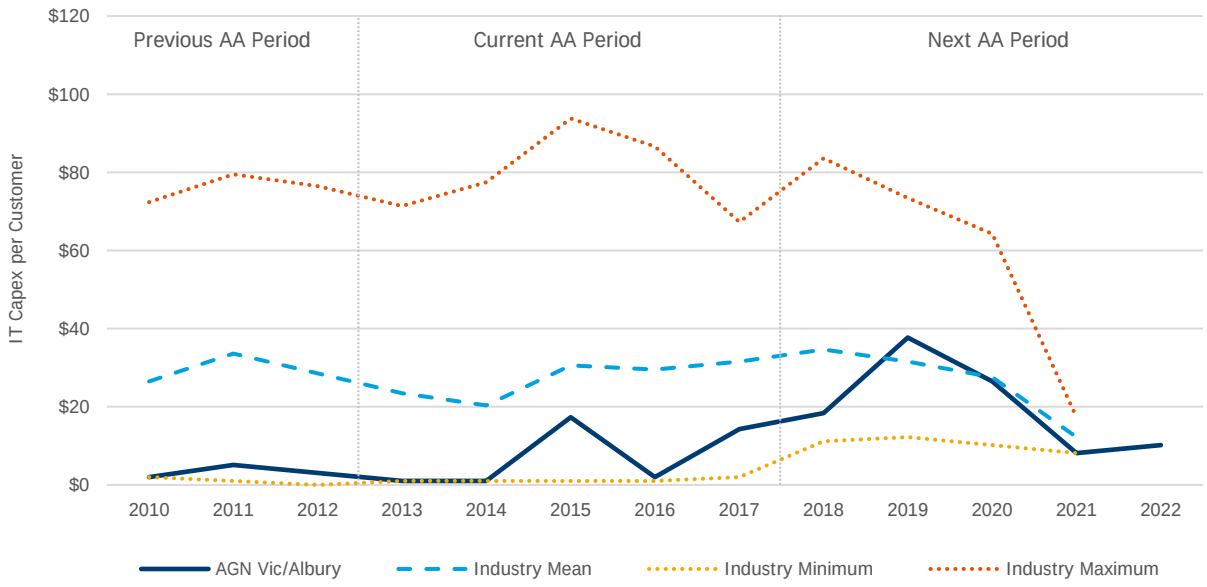
KPMG also noted that in the current AA period, AGN has commenced *"the process of bringing its IT capabilities back in line with the industry*" [25]. Based on the comparative analysis of the proposed IT expenditure, the study concludes that "*forecast increases in the IT capex for the next [AA period] will bring it closer to, but remaining below, the industry mean*"[26].

The analysis of specific benchmarks indicates that AGN's Victorian and Albury IT capex per customer is (as detailed in Figure 5 below):

> *"…consistently below or in line with the industry benchmark mean. This suggests that its IT expenditure is comparatively efficient against the Australian utilities industry for both actual and planned IT expenditure*" [27].

[22] KPMG, "*IT Expenditure Benchmarking Australian Gas Networks Victoria & Albury*", July 2016, pg.7.
[23] Ibid.
[24] Ibid., pg. 9.
[25] Ibid.
[26] Ibid., pg. 7.
[27] Ibid., pg. 7.

Figure 5: AGN IT Capex per Customer[28]



Further, KPMG describes our performance on this metric as follows:

> *"AGN [Victoria and Albury] has had the lowest level of IT capex per customer in the past two periods. Even with the planned uplift in het next [AA period] to bring its capability in line with the industry, AGN [Victoria and Albury] is expected to remain close to the industry mean for this benchmark."*[29]

KPMG also comment that the forecast increase in the IT capex is in line with:

> "*a consistent trend within the industry for increasing use of IT in meeting customer requirements and managing distribution services*" [30]

KPMG's findings are consistent with the AER's recent decision on SA Access Arrangement in which the AER accepted the SA components of all projects included in this IT Investment Plan and noted that it was satisfied that the proposed expenditure was such as "*would be incurred by a prudent service provider acting efficiently*"[31].

[28] Ibid.
[29] Ibid, page 15.
[30] Ibid.
[31] AER, "*Final Decision: Australian Gas Networks Access Arrangement 2016 to 2021, Attachment 6 – Capital Expenditure*", May 2016, pg. 6-33 to pg. 6-35.

5. IT Plan for the Next AA Period

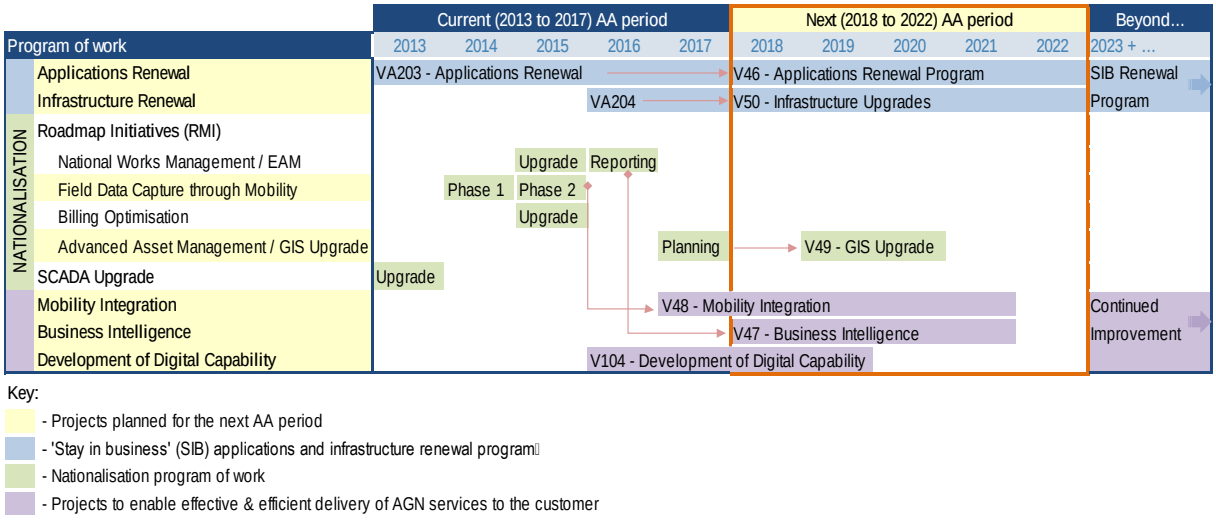
The overarching objectives of the program of work planned for the next AA period are to:

1 maintain the current levels of IT services; and

2 enable efficient and effective delivery of AGN's services to its customers.

The timeline of the national program of work highlighting the projects planned in the next AA period is provided in Figure 6 below.

Figure 6: The timeline of the IT program work planned for the next AA period



The initiatives to deliver on each of these objectives are described below. Business cases for each of the following projects are provided in Attachment 8.6 of the Final Plan.

5.1. 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 GIS suite is required during the next AA period, due to the existing legacy system becoming obsolete to an extent it is no longer supported.

Following the major upgrade projects, the ongoing support and maintenance of the enterprise systems is managed within the SIB Renewal Program. The program ensures systems are kept up-to date enabling AGN to maintain reliable, compliant and efficient business processes and systems, preserving the ongoing integrity of services.

5.1.1. V46 – Applications Renewal

The Applications Renewal Plan is based on the SIB 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' in Table 9 below.

Table 9: Applications Renewal Plan

Renewal Projects	2018	2019	2020	2021	2022
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	
Middleware – BizTalk		X		X	
Field Data / Mobility	X	X	X	X	X

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

It should be noted that the timing of the upgrades in the Applications Renewal Plan depicted above corresponds to the timing of the upgrades in the SA Applications Renewal business case[32] recently approved by the AER in its Final Decision on AGN's SA AA[33]. The only notable difference between the two plans is GIS renewal, which is delayed in Victoria and Albury due to the implementation of the major GIS Upgrade project (V49).

The successful delivery of the Applications Renewal project depends on this project being approved in all jurisdictions, because under our nationalisation approach the systems are upgraded and supported at the national level, with individual jurisdictions contributing to the costs in accordance with the number of customers served across each of the networks.

This group of projects enables the periodic upgrade of AGN's critical IT applications over the period 1 January 2018 to 31 December 2022. This will ensure that AGN continues to maintain reliable, compliant and efficient business processes and systems and preserves the ongoing integrity of the services.

The proposed expenditure on the Applications Renewal project in the next AA period is set out in the tables below.

[32] AGN, *"Access Arrangement 2016-21 proposal"*, Attachment 7.1_Business Cases.pdf, "*Business case SA57 - South Australian Applications Renewal project for the FY2016/17 to FY2020/21 AA period"*, July 2015.

[33] AER, *"Final Decision: Australian Gas Networks Access Arrangement 2016 to 2021, Attachment 6 – Capital Expenditure*", May 2016, pg. 6-33.

Table 10: Applications renewal - Capex/Opex Split ($000, 2016)

Expenditure category	2018	2019	2020	2021	2022	Total
CAPEX	4,637.1	3,366.6	4,655.7	3,388.0	5,993.7	**22,041.1**
OPEX	-	-	-	-	-	**-**
Total	**4,637.1**	**3,366.6**	**4,655.7**	**3,388.0**	**5,993.7**	**22,041.1**

Note: Totals may not exactly match the sum of individual costs due to rounding.

Table 11: Applications renewal - Capex Split Between Victoria And Albury ($000, 2016)

Expenditure category	2018	2019	2020	2021	2022	Total
Capex - Victoria	4,480.9	3,253.2	4,498.9	3,273.9	5,791.8	**21,298.6**
Capex - Albury	156.2	113.4	156.8	114.1	201.9	**742.4**
Total	**4,637.1**	**3,366.6**	**4,655.7**	**3,388.0**	**5,993.7**	**22,041.1**

Note: Totals may not exactly match the sum of individual costs due to rounding.

5.1.2. V50 – Infrastructure Renewal

The infrastructure renewal project proposes to upgrade two key pieces of AGN infrastructure - Desktop and Telephony. The desktop operating platform is seven years old. These are typically refreshed on a 3-7 year cycle. The telephony infrastructure is over five 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 January 2018 to 31 December 2022. 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.

The proposed expenditure on the Infrastructure Renewal project for the next AA period is set out in the tables below.

Table 12: Infrastructure renewal - Capex/Opex Split ($000, 2016)

Expenditure category	2018	2019	2020	2021	2022	Total
CAPEX	839.6	482.3	-	-	-	**1,321.8**
OPEX non-base year cost	-	-	-	-	-	**-**
Total	**839.6**	**482.3**	**-**	**-**	**-**	**1,321.8**

Note: Totals may not exactly match the sum of individual costs due to rounding.

Table 13: Infrastructure renewal - Capex Split Between Victoria and Albury ($000, 2016)

	2018	2019	2020	2021	2022	Total
Capex - Victoria	811.3	466.0	-	-	-	**1,277.3**
Capex - Albury	28.3	16.2	-	-	-	**44.5**
Total	**839.6**	**482.3**	**-**	**-**	**-**	**1,321.8**

Note: Totals may not exactly match the sum of individual costs due to rounding.

5.1.3. V49 - GIS Upgrade

This project will upgrade the SmallWorld GIS application that currently manages data associated with AGN's 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 EAM suite of IT applications.

The proposed expenditure on the GIS Upgrade project for the next AA period is set out in the tables below.

Table 14: GIS Upgrade - Capex/Opex Split ($000, 2016)

Expenditure category	2018	2019	2020	2021	2022	Total
CAPEX	-	11,069.7	4,899.0	205.0	-	**16,173.7**
OPEX non-base year cost	-	-	-	-	-	**-**
Total	**-**	**11,069.7**	**4,899.0**	**205.0**	**-**	**16,173.7**

Note: Totals may not exactly match the sum of individual costs due to rounding.

Table 15: GIS Upgrade - Capex Split Between Victoria And Albury ($000, 2016)

	2018	2019	2020	2021	2022	Total
Capex - Victoria	-	10,696.8	4,734.0	198.1	-	**15,628.9**
Capex - Albury	-	372.9	165.0	6.9	-	**544.8**
Total	**-**	**11,069.7**	**4,899.0**	**205.0**	**-**	**16,173.7**

Note: Totals may not exactly match the sum of individual costs due to rounding.

5.2. Enable effective and efficient delivery of AGN services to the customer

The service delivery IT initiatives planned for the next AA period are:

- *V48 Mobility Integration* – This project will deliver an enhanced mobile communications platform to enable field data capture into core operational systems and integration with the EAM suite of IT applications.
- *V47 Business Intelligence* – This project will deliver enhanced capability for informed decision making in relation to the network asset lifecycle processes, which are expected to result in improvements in customer service, safety and integrity of services and compliance with regulatory obligations.
- *V104 Development of Digital Capability* - This project will consolidate five AGN websites into one and provide an improved gas connection customer experience.

5.2.1. V48 – Mobility Integration

The Mobility Integration 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 our workforce.
- Integrate enhanced mobile communications into the EAM System (Maximo) and GIS.
- Implement prudent and efficient end to end business processes that automate EAM 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. This will, in turn, enable AGN to implement more efficient work management practices and processes in the field and support more informed decision making.

Implementing this project will yield a number of tangible and intangible benefits, with the tangible benefits including avoided costs and cost savings while the intangible benefits include safety, customer service and decision making benefits. The value of the tangible benefits is set out in Section 5.3. In short, the tangible benefits exceed the cost of implementing this project. Implementing this project will therefore yield a positive net economic value, the beneficiaries of which will be customers in these networks.

In addition, compliance with AGN's regulatory obligations and retail market requirements will be improved by providing the necessary tools and resources required to respond to changing regulation and compliance requirements.

The proposed expenditure on the Mobility Integration project for the next AA period is set out in the tables below. As noted in Section 4, AGN expects to spend $1.2 million on this project in 2017. The amounts set out in the tables below do not therefore represent the full cost of implementing this project.

Table 1: Mobility Integration - Capex/Opex Split ($000, 2016)

Expenditure category	2018	2019	2020	2021	2022	Total
CAPEX	2,564.6	3,167.5	3,229.4	1,419.4	-	**10,380.9**
OPEX non-base year cost	-	-	-	-	-	**-**
Total	**2,564.6**	**3,167.5**	**3,229.4**	**1,419.4**	**-**	**10,380.9**

Note: Totals may not exactly match the sum of individual costs due to rounding.

Table 17: Mobility Integration - Capex Split Between Victoria And Albury ($000, 2016)

	2018	2019	2020	2021	2022	Total
Capex - Victoria	2,478.3	3,060.8	3,120.6	1,371.6	-	**10,031.3**
Capex - Albury	86.4	106.7	108.8	47.8	-	**349.7**
Total	**2,564.6**	**3,167.5**	**3,229.4**	**1,419.4**	**-**	**10,380.9**

Note: Totals may not exactly match the sum of individual costs due to rounding.

5.2.2. V47 - Business Intelligence

The existing AGN's reporting, information management and decision making systems are disparate, difficult to access, costly to operate, inefficient and are limiting AGN's ability to make informed and efficient decisions, drive further efficiencies, comply with regulatory obligations and make a range of other improvements to the safety and integrity of its services and customer service.

The Business Intelligence project involves the implementation of a Business Intelligence Toolset that will be integrated into AGN's other enterprise business applications.

The overarching objectives of the Business Intelligence project are to:

- enable consolidated views of data from multiple IT systems for improved data analysis, reporting and decision-making;
- improve data quality and integrity;
- streamline reporting; and
- allow for greater access to information to enable more informed and efficient decisions to be made throughout the business.

The Business Intelligence project is also expected to result in the implementation of more efficient end-to-end business processes and improvements in customer service, safety and integrity of services and compliance with regulatory obligations. It will provide the necessary tools and resources required to respond to changing regulation and compliance requirements, through the implementation of the Business Intelligence initiative, which will deliver:

- improved compliance with the risk based approach to managing and operating assets expected by the ESV[34];

[34] Energy Safe Victoria, *"GPI Safety Management Report 2014/15 – Executive Briefing"*, 17 July 2015.

- improved ability to predict asset failures due to enhanced capability for informed decision making in relation to the network asset lifecycle processes, resulting in safer gas pipeline network;
- reduced risk of non-compliance with regulatory reporting requirements because of improved data quality and integrity; and
- decreased time and effort required to meet regulatory reporting periods.

Like the Mobility Integration project, implementing the Business Intelligence project will yield a number of tangible and intangible benefits, with the tangible benefits including avoided costs and cost savings while the intangible benefits including safety, customer service, information management, data quality and integrity benefits. The value of the tangible benefits is set out in Section 5.3. In short, the tangible benefits exceed the cost of implementing this project. Implementing this project will therefore yield a positive net economic value, the beneficiaries of which will be customers in these networks.

The proposed expenditure on the Business Intelligence project for the next AA period is set out in the tables below.

Table 18: Business Intelligence - Capex/Opex Split ($000, 2016)

Expenditure category	2018	2019	2020	2021	2022	Total
CAPEX	2,555.8	5,039.1	3,359.4	123.9	-	**11,078.2**
OPEX non-base year cost	-	-	-	-	-	**-**
Total	**2,555.8**	**5,229.1**	**3,549.4**	**313.9**	**190.0**	**11,838.2**

Note: Totals may not exactly match the sum of individual costs due to rounding.

Table 19: Business Intelligence - Capex Split Between Victoria And Albury ($000, 2016)

	2018	2019	2020	2021	2022	Total
Capex - Victoria	2,469.8	4,869.3	3,246.2	119.7	-	**10,705.0**
Capex - Albury	86.1	169.7	113.2	4.2	-	**373.2**
Total	**2,555.8**	**5,039.1**	**3,359.4**	**123.9**	**-**	**11,078.2**

Note: Totals may not exactly match the sum of individual costs due to rounding.

5.2.3. V104 Development of Digital Capability

The Digital Capability project intends to establish a digital platform for 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.

The proposed expenditure on the Digital Capability project for the next AA period is provided in the tables below. As noted in Section 4, AGN expects to spend $0.8 million on this project in 2016-2017. The amounts set out in the tables below do not therefore represent the full cost of implementing this project.

Table 20: Development of Digital Capability - Capex/Opex Split ($000, 2016)

Expenditure category	2018	2019	2020	2021	2022	Total
CAPEX	733.3	637.7	-	-	-	**1,371.0**
OPEX non-base year cost	-	-	-	-	-	**-**
Total	**733.3**	**637.7**	**-**	**-**	**-**	**1,371.0**

Note: Totals may not exactly match the sum of individual costs due to rounding.

Table 21: Development of Digital Capability - Capex Split Between Victoria And Albury ($000, 2016)

	2018	2019	2020	2021	2022	Total
Capex - Victoria	708.6	616.2	-	-	-	**1,324.8**
Capex - Albury	24.7	21.5	-	-	-	**46.2**
Total	**733.3**	**637.7**	**-**	**-**	**-**	**1,371.0**

Note: Totals may not exactly match the sum of individual costs due to rounding.

5.3. Benefits from the proposed IT investment

The table below provides a summary of the key benefits associated with the proposed IT investment.

Table 22: Key benefits from the IT investment

ID	IT initiative	Key benefits
V46	Application renewal	• substantially reduces the level of risk of system(s) failing or the integration between systems not operating as intended; • ensures upgraded applications continue to provide required integrated functionality to support business processes; • manages alignment with other co-existing applications; • maintains systems security, protecting information assets from confidentiality, integrity and availability risks • ensures validity of support requirements with technology vendors; • introduces appropriate new functionality; • improves software performance and efficiency and stability of IT systems over time;

		• provides for the continuation of IT vendor support (this requires movement to a recent version of the software); • improves the security and integrity of business information as vendors place greater emphasis on these solutions; and • provides for compliance of the latest IT systems with market requirements.
V50	Infrastructure Renewal	• reduces AGN's exposure to system and security related vulnerabilities and unplanned outages from the failure of critical infrastructure; • reduces the risk of non-compliance with Retail Market Procedures and other legal and regulatory obligations; • improves the stability of the IT systems; • provides for core infrastructure to be supported by IT vendors; • integrates and enhances communications channels; • enables compliance of the IT systems and infrastructure with market requirements; • enables new capabilities to be realised and a greater degree of collaboration to occur through application and services offerings; and • minimises financial risks.
V49	GIS Upgrade	• reduces the level of risk associated with the current GIS from 'Extreme'[35] to 'Moderate'; • provides for lower ongoing opex because the significant opex increase that would be required for the current unsupported version of SmallWorld is avoided; • the costs of future upgrades are contained; • implements standardised national processes to simplify work practices and maintain integrity of data; • leverages benefits from integrating with other key enterprise systems, including optimised asset decision-making through the use of mobility, EAM and business intelligence applications; and • facilitates compliance with regulatory obligations and ESV requirements.
V48	Mobility Integration	• yields a positive economic value over a 10 year period because it provides for significant cost savings and cost avoidance benefits; • enables 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; • leverages the collaboration and access to the mobile reference library; • enables the automation of manual processes; • improves security, safety and service levels through best practice application of integrated enterprise asset systems and location based services; and • reduces the risks associated with the current paper-based manual processes.
V47	Business Intelligence	• yields a positive economic value over a 10 year period because it provides for significant cost savings and cost avoidance benefits; • improved compliance with the risk based approach to managing and operating assets expected by ESV; • improved ability to predict asset failures due to enhanced capability for informed decision making in relation to the network asset lifecycle processes; • reduced risk of non-compliance with regulatory reporting requirements because of improved data quality and integrity;

[35] The overall untreated risk associated with the current GIS has been assessed as 'Extreme' due to the potential for death from striking AGN gas assets.

		• decreased time and effort required to meet regulatory reporting periods; • improves data quality; • streamlines reporting and enables more informed decision making to occur; • takes advantage of the increasing volumes of data being captured in disparate systems as well as deliver constantly changing reporting requirements to key stakeholders; and • will help to maintain and improve the safety of services because it will provide more extensive access to accurate information about assets and the ability to predict failures will result in a safer network.
V104	Digital Capability	• Provides 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; • Enables customers to find and receive information that will be up to date and consistent, Provides a better customer experience through a simplified customer journey which will reduce confusion about AGN as all information will be on one website branded as Australian Gas Networks; • Enables subject matter experts within each area to update the content of the website as required delivering up to date and accurate information to the customer

A summary of the tangible benefits associated with the Mobility and Business Intelligence projects is provided below. In addition to these benefits there are a number of intangible benefits (e.g. safety, customer service, information management, data quality and integrity benefits) that cannot be quantified. The estimates set out below therefore understate the benefits associated with these projects.

5.3.1. Cost savings

Table 23: Cost savings expected from implementing the IT program of work ($000, 2016)

ID	IT initiative		2018	2019	2020	2021	2022	Total
V48	Mobility Integration	Opex	320.0	521.0	618.4	938.4	1,045.6	**3,443.5**
		Capex	320.0	371.0	408.4	728.4	835.6	**2,663.5**
V47	Business Intelligence	Opex	-	595.0	595.0	595.0	595.0	**2,380.0**
		Capex	-	215.0	215.0	215.0	215.0	**860.0**
	Total		**640.0**	**1,702.0**	**1,836.9**	**2,476.9**	**2,691.2**	**9,347.0**

Note: Totals may not exactly match the sum of individual costs due to rounding.

5.3.2. Cost avoidance

Table 24: Cost Avoidance Benefits expected from implementing the IT program of work ($000, 2016)

ID	IT initiative	2018	2019	2020	2021	2022	Total
V48	Mobility Integration	-	22.3	45.2	128.1	186.3	**381.9**
V47	Business Intelligence	-	201.9	403.9	605.8	807.7	**2,019.3**
	Total	**-**	**224.2**	**449.1**	**733.9**	**994.0**	**2,401.2**

Note: Totals may not exactly match the sum of individual costs due to rounding.

Further detail on these benefits is contained in the individual business cases.

5.4. Consistency of proposed IT investment with the NGR

AGN operates its networks in accordance with the NGL and NGR. The overarching objective of the NGL is set out in the NGO, which states that the objective of the NGL 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 AA period 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, which is in the long-term interests of consumers.

The proposed expenditure also complies with the new capex criteria in rule 79 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, consistent with rule 79(1)(a). Further support for this view can be found in the individual business cases and the findings from KPMG's IT expenditure benchmarking study (see Box 1).
- Justifiable under rule 79(1)(b), because:
  - all of the proposed projects are necessary to maintain and improve the safety of services, maintain the integrity of services and comply with a regulatory obligation or requirement (rule 79(2)(c)(i)-(iii)) as highlighted in the table below; and
  - the Business Intelligence and Mobility Integration projects are also justifiable under rule 79(2)(a) because they yield a positive economic value.

Table 25: Consistency of the proposed IT program with rule 79(2)(c) 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	V46 Applications and V50 Infrastructure Renewal - Making this investment reduces the risk of failure of the critical systems as well as security breaches. Any failure will have impacts on the safety of services. V49 GIS Upgrade - The vendor support for the current software release level of the Geospatial Information System (GIS) is no longer provided and therefore the system has a higher risk of failing for a period of time. If the system is not available there

		will be safety implications for the business and for the public, particularly due to the unavailability of Dial Before You Dig (DBYD) information for the public and asset locations information for staff and contractors. V48 - Mobility Integration offers a number of opportunities to decrease health and safety risks to both the workforce and to the public by providing the right information to the right people in an appropriate format and context to meet immediate specific requirements. This may include operating procedures, work location information, inventory, health and safety instructions. V47 – Business Intelligence - More extensive access to accurate information about assets and the ability to predict failures will result in a safer gas pipeline network. V104 – Development of Digital Capability – Capability to enable 24/7 gas leak reporting in one place, and up to date safety and emergency information will improve the safety of services.
(ii)	to maintain the integrity of services	V46 Applications and V50 Infrastructure Renewal - The integrity of the services will be impacted if the applications, desktop and telephony infrastructure are not updated on a regular basis. V49 GIS Upgrade - 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 optimization. V48 Mobility Integration – This project will result in less operational errors from manual processing of data, which will, in turn, improve the integrity of services. This project will also allow increased amounts of accurate data to be extracted and utilised for improved decision making, which will also improve the integrity of services. V47 Business Intelligence - The integrity of services will be preserved and improved through rapid and accurate access to asset and financial information. V104 Development of Digital Capability – Consolidation of five 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	V46 Applications and V50 Infrastructure Renewal - The Retail Market Procedures and other regulatory and legislative obligations would be breached if the systems were not available. V49 GIS Upgrade - Regulatory obligations may be breached if the GIS is not available. V48 Mobility Integration - Manual process can result in delays in service provision and meeting regulatory obligations. They will also impede AGN's ability to implement more of a risk-based approach to asset management underpinned by effective analysis as the ESV is now requiring of Victorian gas distributors. V47 Business Intelligence - Access to more extensive and accurate asset information will decrease the cycle time required to meet regulatory reporting periods. Implementation of risk-based asset condition analysis tools will improve compliance with the ESV requirements.

5.5. Alignment with stakeholder feedback and strategic objectives

In addition to being consistent with the NGR, the proposed expenditure is also consistent with stakeholder expectations and AGN's strategic objectives.

5.5.1. Stakeholder expectations

In the first half of 2016, AGN embarked on a stakeholder engagement program in order to gain insights into the needs, priorities and concerns of its current and potential gas customers and AGN stakeholders, and the key issues that they are facing. The stakeholder insights gained during the program[36] were used by AGN to evaluate and inform its business plans, in conjunction with a consideration of its regulatory obligations.

A key outcome of AGN's stakeholder engagement program was drawing upon stakeholder values and insights to identify four operational themes:

1 *Customer service* – customers would like AGN to be more visible and have access to more information. This will help them to make better decisions and negotiations.

2 *Reliability* - customers value AGN's high reliability and want us to keep providing the same service.

3 *Safety* - stakeholders want AGN to explore ways that services can be improved, particularly as it relates to safety.

4 *Efficient* price and operational outcomes - customers 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 next AA period that is currently being validated through stakeholder feedback. The proposed AGN business investment is mainly directed towards the **Reliability, Safety** and **Efficient** themes, reflecting the stakeholders' preference for AGN to prudently and efficiently maintain its current service levels whilst maintaining reliability and improving the safety of the network. Accordingly, the IT investment proposed in this document is primarily focused on maintaining the existing IT environment and services whilst reducing a range of IT related safety risks, 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 Digital Capability will provide the foundations for future digital capabilities that AGN plans to develop to achieve the objectives of the **Customer service** theme, aimed at involving and including stakeholders by increasing the transparency of AGN's operations. Finally, the Mobility Integration and Business Intelligence initiatives will drive further efficiencies, which are expected to result in significant tangible benefits of cost savings and avoided capital and operating costs.

The manner in which the IT Investment Plan aligns with the stakeholder expectations is summarized in the table below.

Table 26: Mapping between IT investment categories, initiatives and stakeholder engagement themes

ID	IT Initiatives	Stakeholder Engagement Themes

[36] Summarised in: Deloitte, *"Australian Gas Networks Customer Insights Report, Victorian and Albury Stakeholder Engagement Program"*, May 2016.

IT Investment Categories			Customer Service	Reliability	Safety	Efficient
Maintain the current levels of IT services	V46	Application Renewal Program		✓	✓	
	V50	Infrastructure Upgrades		✓	✓	
	V49	GIS Upgrade		✓	✓	
Enable effective & efficient delivery of AGN services to the customer	V48	Mobility Integration	✓	✓	✓	✓
	V47	Business Intelligence	✓	✓	✓	✓
	V104	Digital Capability	✓			✓

5.5.2. AGN's IT Strategic Objectives

AGN leverages APA's IT services to enable the achievement of its business objectives. The AGN IT Strategic objectives are to ensure that 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. The below table demonstrates how the proposed program of work is aligned with the APA IT strategic objectives.

Table 27: 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	V46 Applications Renewal, V50 Infrastructure Renewal, V49 GIS Upgrade: Continued nationalisation of the IT systems in order to leverage economies of scale
IT2	Automation of process and information flows and a single source so information is available anywhere it's needed in our systems without manual intervention and it is created once and maintained in one location	V48 Mobility Integration: Providing access out in the field to business information and automate the gathering of data from the field V47 Business Intelligence: Provide the single platform for data and make the information available without manual intervention V104 Development of Digital Capability: Consolidate five AGN websites into one 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 draw on the insights provided by the significant amount of information captured about assets, customers and people	V49 GIS Upgrade: Replace legacy GIS with modern system that provides functionality to utilise and analyse asset information V47 Business Intelligence:

		Enable 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	V46 Applications Renewal, V50 Infrastructure Renewal: Currency of the IT environment is maintained so that it can be regularly upgraded and patched, minimising exposure to security risks
IT5	Scalable and flexible solutions designed to accommodate growth and a changing environment	V50 Infrastructure Renewal: 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 are built and provides 24 x 7 operations where required	V46 Applications Renewal, V50 Infrastructure Renewal: 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	V48 Mobility Integration: Enhancing sharing of information on work practices and drive efficiency in data gathering out in the field V47 Business Intelligence: 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 V104 Development of Digital Capability: 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 V50 Infrastructure Renewal: Up to date communication and collaboration platforms

6. Deliverability of the IT Investment Plan

AGN and APA have a successful track record of delivering annual programs of work of similar size during the current AA period, as demonstrated through the successful delivery of the EAM and MnB projects. APA has robust controls and vendor arrangements in place to ensure successful delivery of the planned program of work, including:

- 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 Equivalents (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 AGN's prudent and efficient use of IT resources to meet stakeholder expectations, AGN's strategic objectives and comply with the NGR.

6.1. 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 AGN and APA Board or 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.

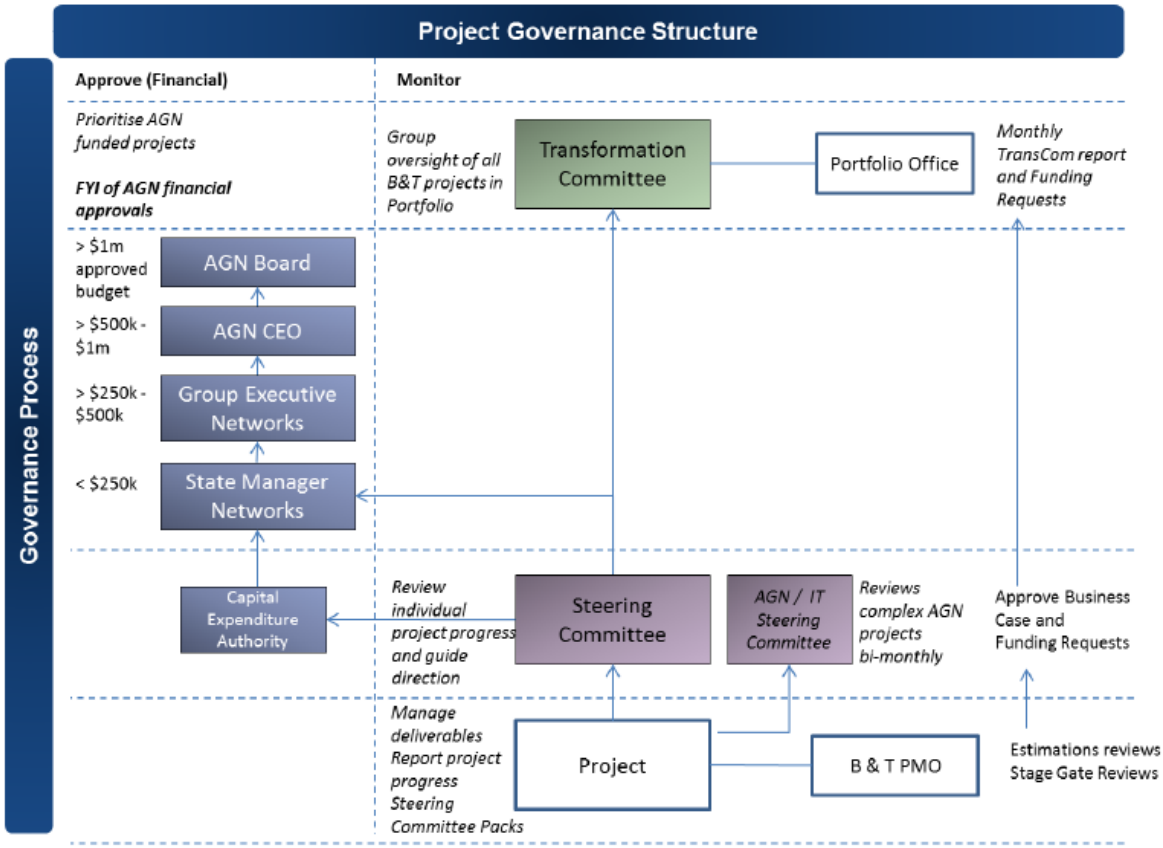
9 Closure Reports.

6.1.1. B&T Project Governance Structure

The B&T project governance structure ensures the projects undertaken are the most appropriate, support the 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.

Figure 7: Project Governance Structure



6.1.2. 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.

6.2. Board

Any projects that have an expected end-to-end budget of over a policy-agreed amount must be approved at AGN Board level.

6.3. Transformation Committee

The Transformation Committee consists of the executives and the chief executive officer. 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; and
- has authority to start and stop projects/initiatives.

6.4. AGN / IT Steering Committee

The AGN / IT Steering Committee acts as the progress review committee for B&T projects approved to be delivered in the current budget period and are responsible for.

- endorsing all new projects;
- endorsing all requests to Transformation Committee;
- ensuring project alignment with strategic objectives;
- the governance of all projects & initiatives; monitoring overall spend/savings, benefits, project health and dependencies;
- monitoring overall risks;
- starting and stopping projects/initiatives; and
- identifying productivity and business improvement opportunities, including the leverage of initiatives across the business, and drives out best practice initiatives

6.5. Steering Committee

The Steering Committee comprises relevant senior stakeholders from AGN and APA 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 project/program manager 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); and
- ensures project objectives and critical success criteria are met.

6.6. 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 three core 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.

6.6.1. 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.

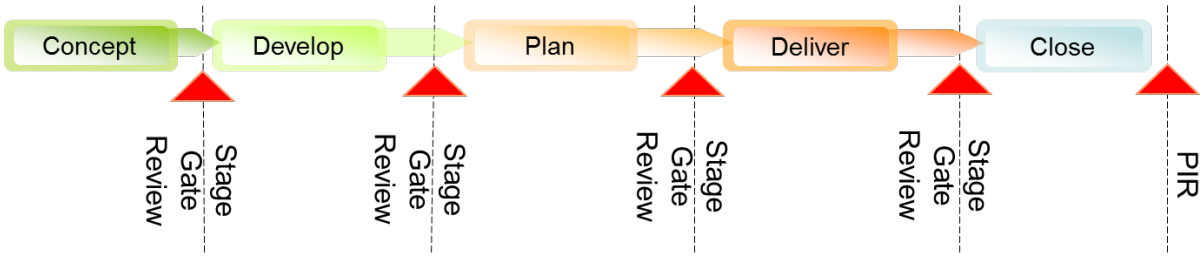
6.6.2. Change Management Framework (CMF)

The CMF is a structured approach to transitioning individuals, teams and the organisation from the 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:

6.6.3. 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 and External Audits
- Post Implementation Reviews.

6.7. 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 current AA period . The resource allocation for AGN project delivery has been ramped up over the current AA period, 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.

The resources required for delivering the IT program of work over the next AA period have been gradually ramping up over the current AA period. For example, in the current AA period APA has successfully implemented the Enterprise systems for AGN (e.g. Oracle Financials, Metering & Billing, EAM, DBYD and a Data Centre) and a number of other significant IT projects for other areas of its business (e.g. SCADA Upgrades, GIS Implementations and Transmission Market grid services). APA's ability to implement all of these projects on time and within budget reflects its prudent, efficient and structured approach to implementing significant IT projects. It also clearly demonstrates APA's capability to implement the program of work planned for the next AA period in accordance with the proposed timing and to deliver the expected benefits of the program.

Glossary

Term	Definition
AA	Access Arrangement
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AGN	Australian Gas Networks Limited
APA	APA Group
BI	Business Intelligence
B&T	Business and Technology
Capex	Capital expenditure
CMF	Change Management Framework
DBYD	Dial Before You Dig
DR	Disaster Recovery
EAM	Enterprise Asset Management
ESV	Energy Safe Victoria
FTE	Full Time Equivalent
GIS	Geospatial Information System
IT	Information Technology
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
MnB	Metering and Billing
NECF	National Energy Customer Framework
NGO	National Gas Objective
NGR	National Gas Rules
Opex	Operating expenditure
PAF	Project Assurance Framework
PCF	Project Competency Framework
PMF	Project Management Framework
SA	South Australia
SCADA	Supervisory Control and Data Acquisition

SIB	Stay-in-Business

Appendix A - AGN IT environment

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

Systems and functions

The integrated nature of these systems is demonstrated by the IT architecture diagram shown in Figure A.1 below:

Figure A.1: AGN IT Architecture

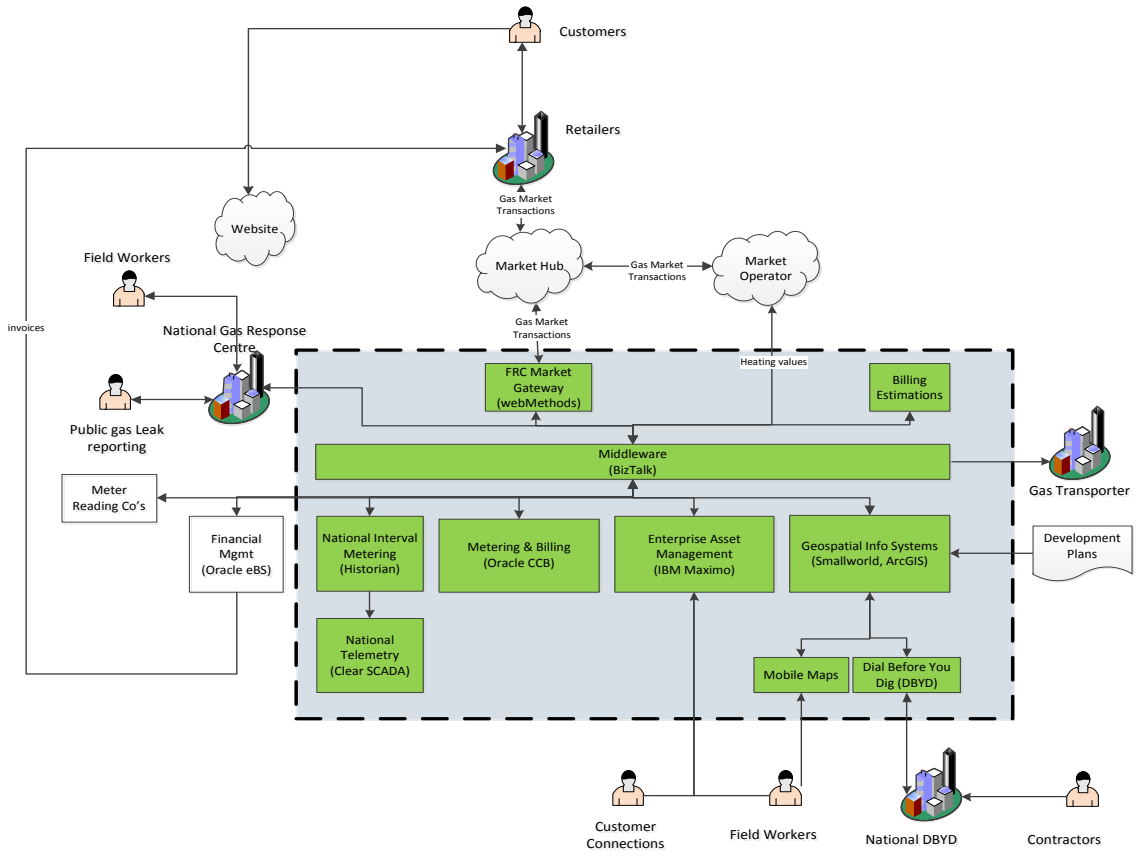


Table A.1 lists the core IT applications supporting the Victorian and Albury AGN businesses, their functions and the planned projects for the 2018 to 2022 AA period impacting each application.

Table A.1: Core AGN applications supported by APA, their functions and the planned projects for the 2018 to 2022 AA period impacting each application.

Application	Functions	Proposed projects in 2018 to 2022 AA period
FRC Market Gateway - Web Methods	Send & Receive Service Order Requests Send & Receive Meter Fix Send & Receive Customer Transfer requests	V46 – upgrade & maintain
Meter Reading & Billing System – ORACLE CC&B	Transaction Workflow Meter Reading Delivery Point Billing	V46 – upgrade & maintain
Enterprise Asset System – IBM Maximo	Planning Dispatching Work Job Completion Details Delivery Point Status Management Preventative Maintenance Contractor Payment Meter Management	V46 – 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	V49 – GIS Upgrade
Mobile Maps – LatLonGO	Asset Location – Emergency Response Asset Location – Customer Connection	V48 – Mobility Integration
Network Modelling System – Synergee	Capacity Strategic Planning Customer Connection Assessment Emergency Response	N/A[37]
Dial Before You Dig - Mipela	Management of National Dial Before You Dig Enquiries Asset Location Notification	V46 – upgrade & maintain
Networks Interval Metering Data System – Historian OsiPi	Storage of SCADA data Billing information	V46 – upgrade & maintain
Billing Estimation Module – custom built	Delivery Point Forward Estimate Interval Consumer Management	V46 – upgrade & maintain

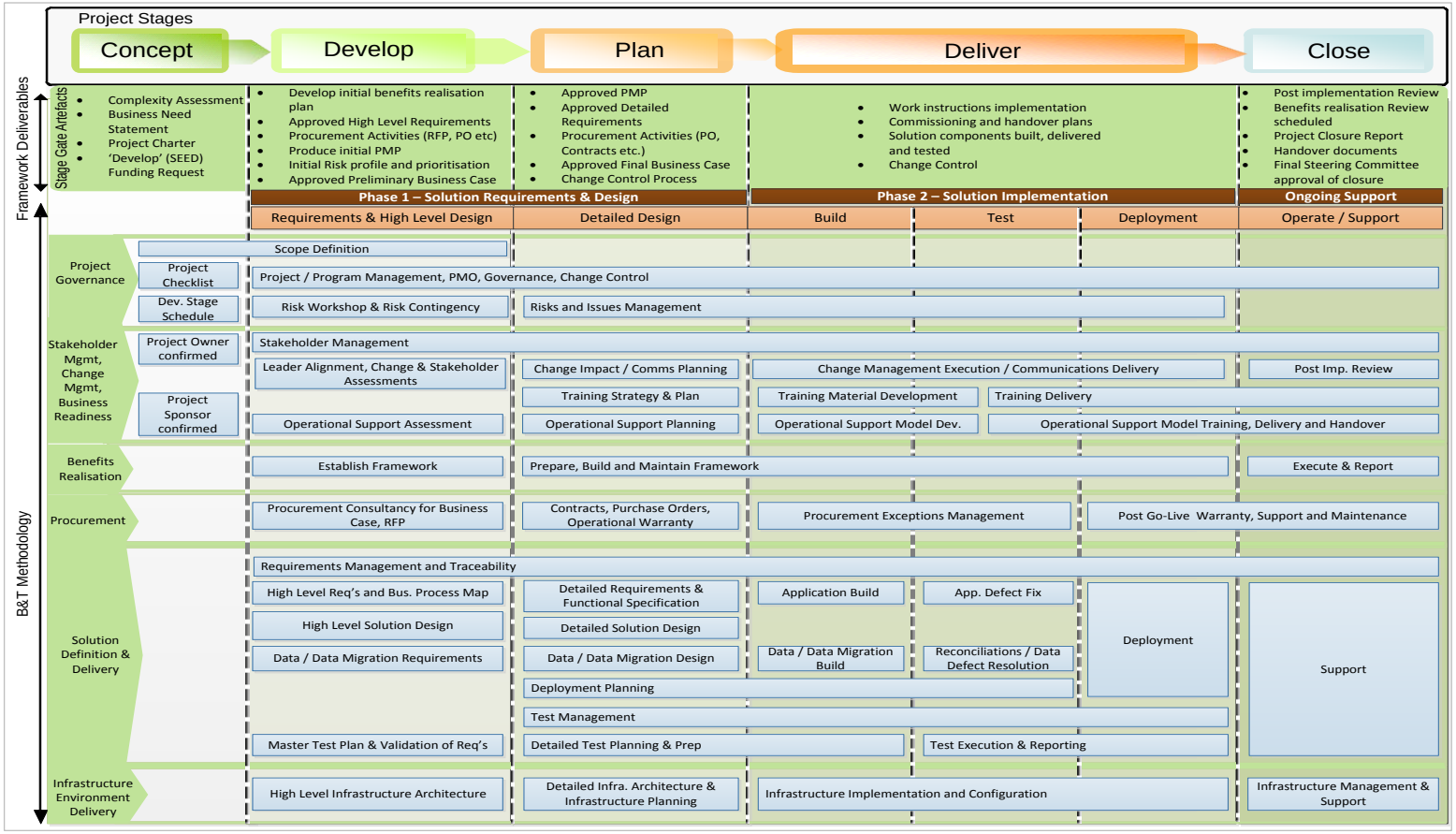
[37] This is a commercial off-the-shelf software package that is managed by the business areas and is not included in the Applications Renewal program of work.

Base Load & TSF Calculation

Appendix B - Methodologies

AGN Project Methodology

To manage all its IT projects, AGN utilises an industry standard Business and Technology (B&T) Project Methodology, which is managed through formal governance. The key aspects of this methodology are outlined in the diagram below.



AGN Application Lifecycle Management

AGN utilises an industry-standard application lifecycle management methodology and a practical framework to determine upgrade timelines and priorities. The diagram below outlines the key aspects of this framework.