

Attachment 8.6A

Addendum to IT Investment Plan – South Australia

SA revised Final Plan July 2021 – June 2026
January 2021

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Executive summary

As a gas network service provider, we must understand and meet rapidly changing customer needs. This means building a flexible and responsive business that seeks to improve productivity and enhance the way we manage the vital community assets we own. To do this, we must invest in information technology (IT) that allows us manage and monitor our assets, as well as providing consistent and responsive customer service.

This addendum to our IT Investment Plan provides an update to our current period IT spend reconciled with that reported in our Regulatory Information Notices (RINs), outlines the carryover of some costs from projects underway in the current period to the early years of the next period, along with some additional expenditure to meet recently introduced rule changes from the Australian Energy Market Operator (AEMO). While there are some changes to timing of spend for projects underway, we still expect each of these projects to be delivered within the original amounts approved by the AER for the current AA period.

Our key IT investments proposed for the next access arrangement (AA) period (July 2021 to June 2026) have not changed from our Final Plan, and therefore are consistent with what the AER has accepted as conforming capex in its Draft Decision.

By the end of the current AA period, we will have invested \$30¹ million in capital expenditure on our IT systems, including:

- the national consolidation and updates to nine of our critical applications under a more efficient, extended upgrade cadence in line with accepted industry practice and manufacturer requirements;
- major upgrades to our SCADA and metering and billing systems;
- substantial roll-out of major upgrades to our geographical information systems, field mobility integration project and a core business intelligence platform;
- website enhancements and development of a web portal to support the customer connections process; and
- cyber security improvements and a new enterprise reporting system for AGN.

This is a reduction of \$11 million in the current AA period compared to our Final Plan and is offset by an increase of \$13 million in the next AA period compared to our Final Plan i.e. the delay in the delivery of some projects has resulted in costs shift from the current AA period to the next AA period

In the next AA period, we propose to invest \$45 million in our IT systems. Around 44% of this (\$19 million) is recurrent investment on maintaining our current levels of service by ensuring our suite of critical applications remain current and fit-for-purpose. Around 56% (\$25 million) is non-recurrent investment, including \$7 million to complete non-recurrent investment in our mobility integration and business intelligence projects already underway, and \$19 million investment in new IT systems that will:

- systemise our investment planning and optimisation processes;
- continue rationalising our systems and infrastructure across AGIG; and
- deliver more digital customer services. Table 0.1 shows the split of recurrent and non-recurrent IT investment forecast for the next AA period, compared with the total investment expected to be undertaken by the end of the current AA period (July 2016 to June 2021).

¹ Unless otherwise stated, all costs in this document are expressed in real 2019 dollars and excludes overheads and real cost escalation.

Table 0.1: Proposed IT investment \$'000 2019/20

IT program of work	2021/22	2022/23	2023/24	2024/25	2025/26	Total next AA period	Total current AA period
Maintain current levels of IT services (recurrent)	4,643.8	2,787.1	2,864.2	5,946.9	3,249.3	19,491.3	18,901.7
Efficient and effective service delivery (non-recurrent)	6,117.6	4,328.3	7,012.5	5,796.4	1,993.2	25,248.0	11,282.1
Total	10,761.4	7,115.4	9,876.7	11,743.3	5,242.5	4,739.3	30,183.8

Tables may not sum due to rounding

The \$11 million reduction in the current AA period is driven by delays in spending for the GIS Upgrade, Business Intelligence and Mobility projects already underway. These delays see the carryover of some costs from these projects into the early years of the next AA period, which has contributed to \$11 million of the increased investment in the next AA period. The further \$2 million increase in the next AA period is driven by:

- a small increase in the GIS Upgrade costs related to additional data cleansing requirements and market rates following outcomes of recent negotiations (\$1.1 million); and
- confirmation of two further rule changes (in addition to life support) that require us to make system changes to meet these new AEMO obligations (\$0.6 million).

This Addendum to our IT Investment Plan sets out our Final Plan (Section 1), the AER's Draft Decision (Section 2) and our response in our revised Final Plan (Section 3). It should be read in conjunction with our initial IT Investment Plan submitted as Attachment 8.6 to our Final Plan in July 2020.

Consistent with the IT Investment Plan submitted in July 2020, all costs presented in this plan are direct unescalated dollars of December 2019 (i.e. excluding overheads and escalation) unless otherwise labelled.

1. Our Final Plan

In our Final Plan submitted in July 2020 we proposed IT investment in the current AA period totalling \$41 million and in the next AA period totalling \$32 million.

Figure 3.1 shows the timeline of the full program of work in our Final Plan, showing the projects being completed in the current period, as well as those planned for the next AA period.

Figure 1.1: Timeline of the IT program work planned for the next 5 year period

Current (2016/17 to 2020/21) AA period					Next (2021/22 to 2025/26) AA period				
2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Maintain current levels of IT services (recurrent)									
	SA57: Applications Renewal Program				SA117: Applications Renewal Program				
	SA62: SCADA Upgrade								
	SA58: GIS Upgrade								
	SA82: Infrastructure Renewal				SA139: Infrastructure Renewal				
Efficient and effective service delivery (non-recurrent)									
	SA59: Mobility Integration								
	SA60: Business Intelligence								
			SA138: AGIG Strategy & Roadmap						
						SA121: AIPM			
	SA84: Develop Digital Capability				SA137: New Customer Digital Services				
				Life support data solution					

Table 1.1 shows the split of recurrent and non-recurrent IT investment forecast for the next AA period, and a comparison of the total investment expected to be undertaken by the end of the current AA period (July 2016 to June 2021).

Table 1.1: Final Plan proposed IT investment \$'000 2019/20

IT program of work	2021/22	2022/23	2023/24	2024/25	2025/26	Total next AA period	Total current AA period
Maintain current levels of IT services (recurrent)	1,002.8	2,786.7	2,864.2	4,068.9	3,249.3	13,971.9	23,742.0
Efficient and effective service delivery (non-recurrent)	1,094.4	2,128.3	7,012.8	5,796.4	1,993.2	18,025.1	17,033.4
Total	2,097.2	4,915.0	9,877.0	9,865.3	5,242.5	31,997.0	40,775.4

Tables may not sum due to rounding

1.1. Updates in response to formal information requests

In September we responded to a formal information request, IR008, from the AER on our IT capex. In this response, we provided an update on the status of some of the projects underway in

the current AA period. This update showed some changes to the delivery timeline of these projects following more detailed project planning and vendor negotiation undertaken since we submitted our Final Plan in July 2020. It also corrected for the timing of the next major update required to our consolidated GIS system.

The result of these changes was a deferral of \$11 million of IT capex across 2019/20 and 2020/21 into the next AA period. More information on these changes can be found at sections 3.1 and 3.2 below.

2. AER's Draft Decision

The AER has accepted our forecast IT capex for the next AA period in its Draft Decision.² For each of the projects in the next AA period, the AER has stated the scope of proposed work, and the approach to determine cost, is considered to be a reasonable approach, and it supports the project in full.³

For current period IT capex, the AER has approved conforming capex for 2016/17 to 2018/19 in line with our RIN submitted 30 June. The AER notes it will assess 2019-20 actual IT capex as part of the final decision, and 2020-21 as part of the subsequent (2026/27 to 2030/31) AA period.⁴

The AER noted the following in its Draft Decision:

- its top down review of excluded Corporate Systems and GIS due to significant programs in these areas over the current AA period;
- it has not been able to reconcile data provided in our RIN to the IT Investment Plan submitted as Attachment 8.6 to our Final Plan; and
- we provided an updated forecast of our IT capex as at September 2020, in which we expected to only complete about \$30.4 million in current period (50.4% of allowance for period). \$10.4 million of the reduction was largely driven by Mobility Integration \$5.6 million and GIS \$4.4 million, which occur across 2019/20 and 2020/21 years.⁵

² AER, Draft Decision – Australian Gas Networks (SA) Access Arrangement 2021-26, Attachment 5: Capital expenditure, p. 28.

³ AER, Draft Decision, Attachment 5, pp 31-34.

⁴ AER Draft Decision for AGN SA, Attachment 5 – Capital Expenditure, p 31.

⁵ AER Draft Decision for AGN SA, Attachment 5 – Capital Expenditure, p 31.

3. Our Response

3.1. Overview

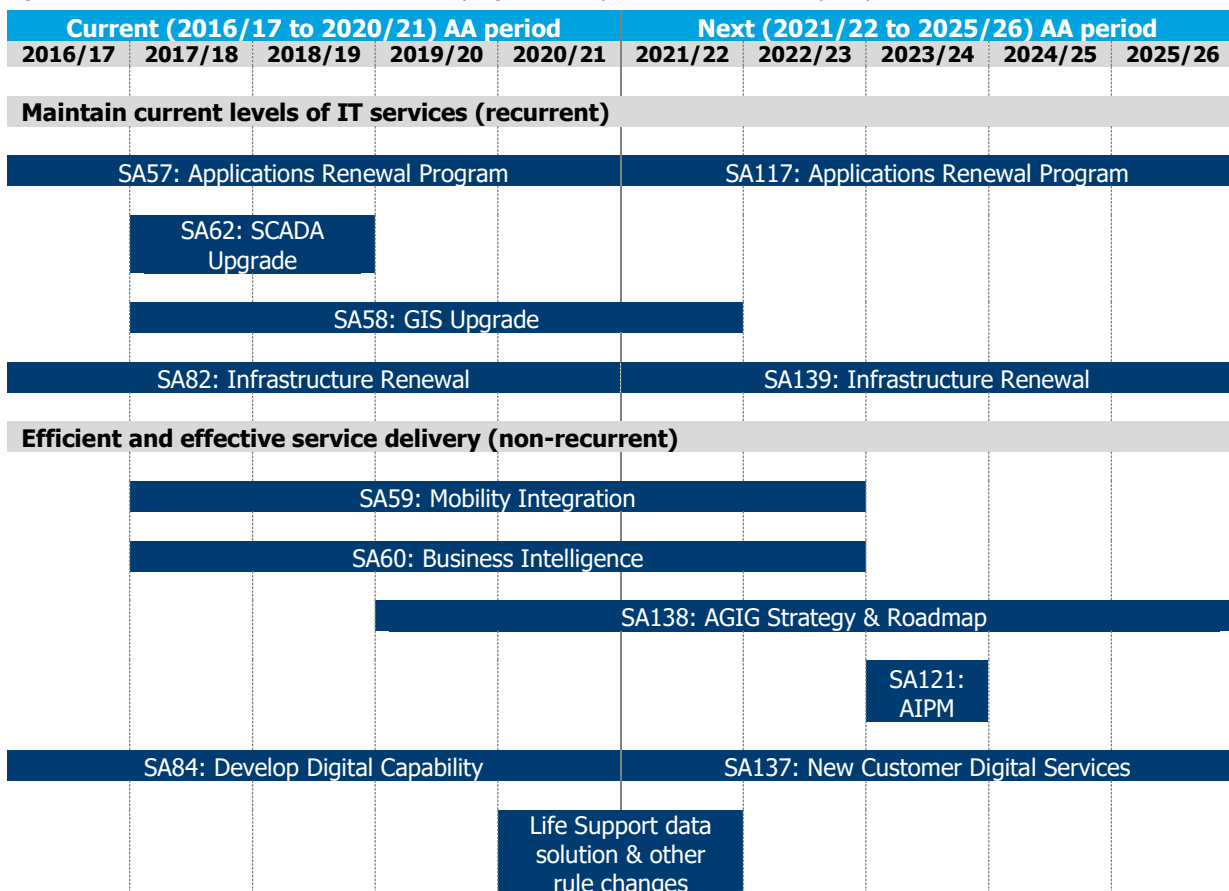
In line with our update in September, our revised Final Plan proposes IT investment in the current AA period totalling \$30 million and in the next AA period totalling \$45 million. This is a reduction of \$11 million in the current AA period compared to our Final Plan and an increase of \$13 million in the next AA period compared to our Final Plan.

The \$11 million reduction in the current AA period is driven by delays in spending for the GIS Upgrade, Business Intelligence and Mobility projects already underway. These delays see the carryover of some costs from these projects into the early years of the next AA period, which has contributed to \$11 million of the increased investment in the next AA period. The further \$2 million increase in the next AA period is driven by:

- a small increase in the GIS Upgrade costs related to additional data cleansing requirements and recently negotiated costs (\$1.1 million); and
- confirmation of two further rule changes (in addition to life support) that require us to make system changes to meet (\$0.6 million).

Figure 3.1 shows the updated timeline of the full program of work, showing the projects being completed in the current AA period, as well as those planned for the next AA period.

Figure 3.1: Revised Final Plan timeline of the IT program work planned for the next 5 year period



IT capex in the next AA period is projected to be \$45 million. This is \$15 million more than the \$30 million forecast for the current AA period. This is due to a significant amount of work underway on a large transformation program in the current AA period including our GIS Upgrade, Mobility

Integration and Business Intelligence projects, that will flow through to the early years of the next AA period, partially offset by a lower level of recurrent investment.

Table 3.1 shows the split of recurrent and non-recurrent IT investment forecast for the next AA period, and a comparison of the total investment expected to be undertaken by the end of the current AA period (July 2016 to June 2021).

Table 3.1: Proposed IT investment \$'000 2019/20

IT program of work	2021/22	2022/23	2023/24	2024/25	2025/26	Total next AA period	Total current AA period
Maintain current levels of IT services (recurrent)	4,643.8	2,787.1	2,864.2	5,946.9	3,249.3	19,491.3	18,901.7
Efficient and effective service delivery (non-recurrent)	6,117.6	4,328.3	7,012.5	5,796.4	1,993.2	25,248.0	11,282.1
Total	10,761.4	7,115.4	9,876.7	11,743.3	5,242.5	44,739.3	30,183.8

Tables may not sum due to rounding

Table 3.2 below provides updated actuals and forecast for IT Capex expenditure in 2019/20 and 2020/21.

Table 3.2: Updates to 2019/20 actual and 2020/21 forecast IT capex

IT Investment Summary	Submitted Forecast		Forecast as at Dec 20		Variance	Notes
	2019/20	2020/21	2019/20 (A)	2020/21 (F)		
Geospatial Information System *	3,955.2	6,400.0	1,840.9	5,619.0	(2,895)	Project in-flight with SA Go Live scheduled for September 2021. Conflation now due by June 2022. See additional details provided at 3.2.1.2 below.
Mobility Integration	907.1	8,971.4	206.5	4,067.0	(5,605)	Integrated Mobile Work Management updated schedule for June 2021 Go Live and completion in 2022. Also includes Additional integrated Mobile Applications up to 2023. See additional details provided at 3.3.1.1 below.

IT Investment Summary	Submitted Forecast		Forecast as at Dec 20		Variance	Notes
	2019/20	2020/21	2019/20 (A)	2020/21 (F)		
Business Intelligence	196.9	2,329.0	208.5	1,298.0	(1,019)	Business Intelligence Strategic Networks Platform due June 2021 and ongoing data integration into 2023. See additional details provided at 3.3.1.2 below.
Apps Renewal - Metering & Billing	2,531.8	0.0	1,936.1	205.1	(391)	Project complete August 2020. Reduced cost compared to forecast due to efficiency savings in delivery.
Apps Renewal - Enterprise Asset Management	320.1	268.5	29.8	589.0	30	Project planning to commence Q4 CY20. Go Live on track by April 2020 to avoid support issues.
Apps Renewal - FRC Market Gateway	188.0	188.0	0.0	376.0	-	Project planning to commence Q4 CY20. Project Start Date scheduled for January 2021.
Apps Renewal - Middleware (Biztalk)	0.0	161.1	0.0	161.0	(0)	Project planning to commence Q4 CY20. Project Start Date scheduled for January 2021.
Apps Renewal - Licence Growth	107.4	107.4	0.0	107.0	(108)	Ongoing licence cost payments
Infrastructure Renewal	38.4	104.9	121.6	104.9	83	19/20 Actuals updated. Planned lifecycle refresh of devices completed. Increase due to onboarding/expansion of Customer and Marketing team.
Develop Digital Capability	281.6	51.4	260.0	51.7	(21)	19/20 Actuals updated.

IT Investment Summary	Submitted Forecast		Forecast as at Dec 20		Variance	Notes
	2019/20	2020/21	2019/20 (A)	2020/21 (F)		
AGIG Strategy & Roadmap	278.3	2,098.9	436.3	2,832.5	892	19/20 Actuals updated. 20/21 Forecast updated with market costs from ERP RFP, undertaken in 2020.
Life Support data solution	0.0	423.0	0.0	424.0	1	Project planning to commence Q1 CY21 - solution partially delivered by June 2021 (regulatory requirement to implement full solution including additional scope by December 2021). See additional details provided at 3.3.1.3 below.
Total	8,805.0	21,104.0	5,039.7	15,835.3	(9,033)	

* Note: GIS forecast reduced by \$1,878k incorrectly allocated to the in-flight GIS Project rather than Major Upgrade due in 2024/25

Overall, we are forecasting to deliver the same outcomes over the 10-year period as initially forecast for the current AA period, at a lower total cost. The delay in spend reflects an unknown and significant change in business structure after the AER Final Decision for the current AA period, being the merger between AGN, MGN and DBP to form AGIG. The focus for IT shifted from delivering key large projects for AGN to firstly separate the MGN IT systems from United Energy, which was a significant focus for IT that was not foreseen at the time the AGN plan was set.

Following the successful separation of MGN, the focus shifted to developing an IT Roadmap and Strategy for all three businesses. This is key given the change in business structure and the need to ensure a common IT solution/architecture suitable for all three businesses over the medium term. The Roadmap and Strategy was completed in 2019 and we are shifting into delivery.

Following this, we have and are completing detailed project planning to deliver the AGN IT projects consistent with the initiatives allowed for in the current AA period. The completion of the planning stage over the last few months has resulted in a few changes in timing of delivery, but not scope.

The following sections provide some more information on the movements and changes in expenditure for the next AA period related to some delays in projects already underway. For all other projects included in our Final Plan, the forecast spend for the next AA period is unchanged from our initial Final Plan and that approved by the AER in its Draft Decision.

3.2. Maintaining current levels of service

3.2.1. Forecast recurrent IT capex overview

Over the next AA period we propose to invest \$19 million on recurrent initiatives. This is in line with the \$19 million we expect to invest in the current AA period, and accounts for 44% of the total IT capex forecast. This reflects an increase of \$6 million in the next AA period compared to our original Final Plan submission in July 2020.

Table 3.3 profiles the forecast recurrent IT investment over the next AA period and includes a comparison with the total recurrent IT investment we expect to make by the end of the current AA period.

Table 3.3: Proposed recurrent IT investment \$'000 2019/20

Recurrent expenditure	2021/22	2022/23	2023/24	2024/25	2025/26	Total next AA period	Total current AA period
Applications renewal	978.7	2,775.9	2,829.6	5,922.8	3,195.6	15,702.6	6,597.5
GIS Upgrade	3,641.0	-	-	-	-	3,641.0	9,028.7
SCADA	-	-	-	-	-	-	2,920.4
Infrastructure renewal	24.1	11.2	34.7	24.1	53.6	147.7	355.0
Total	4,643.8	2,787.1	2,864.2	5,946.9	3,249.3	19,491.3	18,901.6

The following section provides an overview of the updates to the applications and infrastructure renewal programs in our revised Final Plan.

3.2.1.1. Applications renewal (SA117)

The applications renewal program for the next AA period has been updated to reflect the corrected timing of the next major update required to our consolidated GIS system in 2024/25. The \$2 million of forecast costs of this upgrade were included in the GIS Upgrade project costs for 2020/21 in our original Final Plan.

All other aspects of our applications renewal program for the next AA period are consistent with the program included in our original Final Plan and approved by the AER in its Draft Decision. The current period actuals and forecast have also been updated to reflect the corrected timing of the GIS upgrade as well as the actual project values for each financial year reported in the RINs.

Table 3.4 shows the updated expenditure profile by application.

Table 3.4: Proposed applications renewal program investment \$'000 2019/20

Applications renewal	2021/22	2022/23	2023/24	2024/25	2025/26	Total
Metering & billing system (Oracle)	-	678.8	-	2,801.9	-	3,480.7
Works management system (Maximo)	-	-	1,880.9	-	705.0	2,585.9
GIS (Smallworld)	-	378.0	-	2,255.6	-	2,633.6

Applications renewal	2021/22	2022/23	2023/24	2024/25	2025/26	Total
Dial Before you Dig	216.3	-	-	216.3	-	432.7
Historian system	143.5	-	788.6	-	-	932.0
FRC market gateway (WebMethods)	476.6	-	-	476.6	-	953.3
Middleware (Biztalk)	-	397.1	-	-	1,134.7	1,531.8
Mobility/planning & scheduling applications	-	1,171.8	-	-	1,171.8	2,343.6
Licences	142.3	150.2	160.1	172.3	184.1	809.0
Total	978.7	2,775.9	2,829.6	5,922.8	3,195.6	15,702.6

Totals may not sum due to rounding

3.2.1.2. GIS Upgrade

The GIS Upgrade Project (SA58 – also known as ‘GIS Consolidation’) is a significant project delivering the consolidation of five state-based, outdated GIS platforms into a single Enterprise GIS platform. This project is effectively a full re-implementation of the GIS, delivering a single Enterprise GIS instance, alignment of five different data models, migration and cleansing of data, alignment of state-based business processes plus training and upskilling of existing GIS personnel. South Australia is currently scheduled to Go Live in the upgraded Enterprise GIS in September 2021, with post Go Live effort required to conflate asset data with the upgraded GIS Cadastre (‘Conflation’).

As at September 2020, the GIS Upgrade Project had completed the Concept, Develop and Plan Stages of the project, while also concurrently completing a number of core deliverables from the Deliver Stage.

Figure 3.2 below details the project delivery plan roadmap for the GIS Project.

Figure 3.2: GIS project plan



Project work completed to date includes the following:

Concept Stage

- Project Initiation
- Scope Development
- Project Kick-Off

Develop & Plan Stages

- Procurement process, including solution implementation partner and software procurement strategy and delivery
- Product Selection, including software vendor presentations, software assessments, reference site visits and product demonstrations supporting the product selection outcome
- Detailed requirements definition
- Business process definition, including aligning and standardising five state-based business processes into single Enterprise business processes
- Application design based on an 'Out of the Box' design utilising the Gas Distribution Office ('GDO') tool kit
- Data design, including consolidating five disparate GIS data models into a single standardised, 'Out of the Box' data model
- Delivery of testing and change management plans

Deliver Stage

- SA data migration scripts, required to migrate SA source system data into the target Enterprise GIS
- SA data cleansing scripts, required to cleanse the migrated data in the target Enterprise GIS
- Application Builds 1 and 2 which consist of the first two of five 'building blocks' for the full Enterprise GIS

Project work to be delivered prior to the September 2021 Go Live consists of the following:

- Application Builds 3 – 5 which consist of the remaining three of five 'building blocks' for the full Enterprise GIS
- Application Test Case development, required to ensure the application is implemented according to the required design
- Data migration and cleansing, utilising the scripts developed to date
- Application Testing which will provide the acceptance criteria for the Go Live in September 2021

The Go Live is also supported by appropriate training and change management (including Enterprise business process implementation) up to and including Go Live.

In recent months as the Plan Stage has been finalised and the Deliver Stage schedule developed, it was identified that Conflation is not required until post Go Live and in order to de-risk the project Go Live, this work has been re-scheduled to be completed by June 2022. Subsequent resource requirement clarification and finalisation of vendor pricing has identified an additional \$1.1m required by June 2022 to deliver the data cleansing scope of the project.

Based on the work completed to date and applied updates to the schedule as determined from the Plan stage, the following table provides the updated cost profile for the GIS Upgrade Project, including spend required for Conflation and additional data cleansing in 2021/22.

Table 3.5: Summary of GIS Project costs for AGN SA

Expenditure Profile	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	Total project cost	Total approved
GIS Upgrade project	170.9	559.3	838.6	1,840.9	5,619.0	3,641.0	12,669.7	17,394.8

3.3. Enabling effective and efficient delivery of services to customers

3.3.1. Forecast non-recurrent IT capex overview

Over the next AA period we proposed to spend \$25 million on non-recurrent initiatives. This reflects a change of \$7 million compared to our original Final Plan submission in July 2020 and is the result in carryover of spend, plus a small uplift, from non-recurrent IT projects underway in the current period. There has been no change to the three new IT initiatives planned for the next AA period and accepted by the AER as conforming capex in its Draft Decision.

Table 3.6 profiles the updated forecast non-recurrent IT investment over the next AA period and includes a comparison with the total non-recurrent IT investment we expect to make by the end of the current AA period.

Table 3.6: Proposed non-recurrent IT investment \$'000 2019/20

Non-recurrent expenditure	2021/22	2022/23	2023/24	2024/25	2025/26	Total next AA period	Total current AA period
Mobility Integration	3,761.0	1,800.0	-	-	-	5,561.0	5,048.9
Business Intelligence	685.6	400.0	-	-	-	1,085.6	1,946.5
Life support and other rule changes	576.6	-	-	-	-	576.6	424.0
AIPM	-	-	2,361.3	-	-	2,361.3	n/a*
New Customer Digital Services	364.1	1,151.0	347.4	294.3	-	2,156.8	
AGIG IT Strategy & Roadmap	730.3	977.3	4,304.1	5,502.1	1,993.2	13,507.0	3,268.9
Total	6,117.6	4,328.3	7,012.5	5,796.4	1,993.2	25,248.0	11,282.1

* Note these non-recurrent initiatives are new for the next AA period, therefore a line-by-line comparison of projects between periods is not applicable.

Totals may not sum due to rounding

The following sections provide additional details for the updates in our revised Final Plan related to non-recurrent projects that are now forecast to extend into the following period, namely Mobility Integration (SA59), Business Intelligence (SA60) and the life support and other rule changes that were not forecast at the start of the current AA period. With each of these projects underway, and key planning phases reaching completion, there have been recent updates to the delivery time frames of these projects since our Final Plan submission.

As we outline below, substantial work has already been completed on these projects and is planned for the remainder of 2020/21, with extension into the following period necessary to ensure effective delivery of these complex projects.

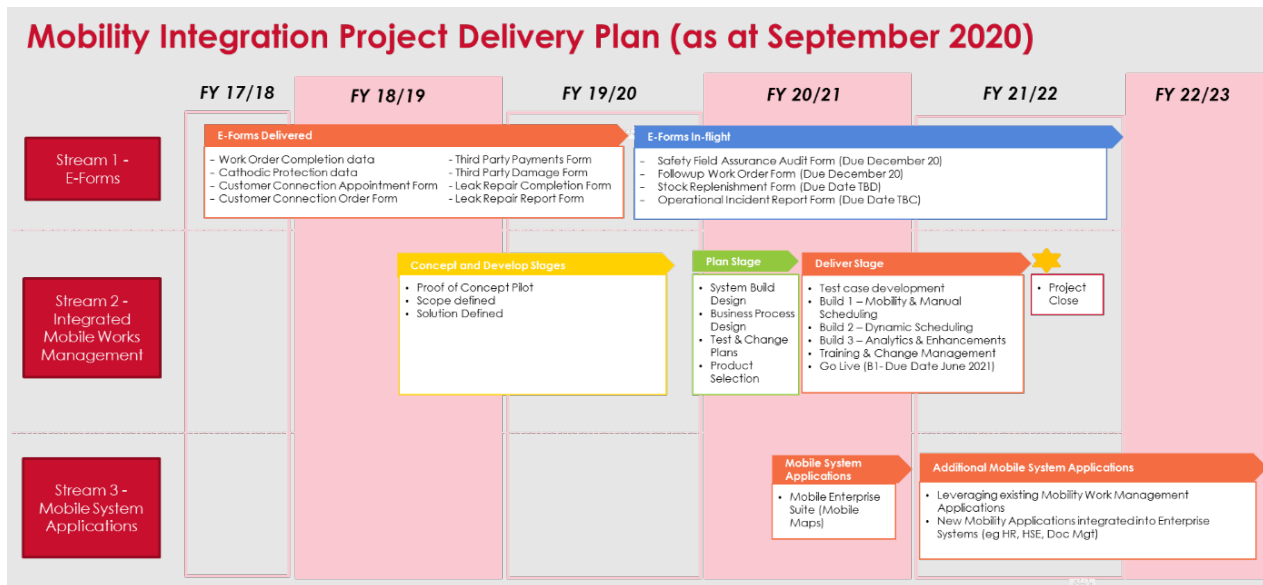
3.3.1.1. Mobility Integration

The Mobility Integration Project has been delivered as a Program through three streams as referred to in the Mobility Integration Project business case (SA59), consisting of:

- Stream 1 – E-forms
- Stream 2 – Mobile Work Management Systems
- Stream 3 – Additional Mobile Applications

The profile for the delivery of those streams is provided in the Mobility Integration project roadmap in Figure 3.3 below.

Figure 3.3: Mobility project plan



Project work completed to date is as follows:

Stream 1 – e-Forms

As identified in the Mobility Integration business case, e-Forms have been developed to 'replace key paper forms with electronic forms that will display on a variety of mobile devices'. These forms include 'work orders as e-Forms that are electronically sent to the worker, completed in the field and sent back when complete'. Given the tactical, non-integrated nature of these e-Forms, the development has also been coupled with either automated data uploads or robotic data entry into Enterprise Asset Management (EAM). These e-Forms are developed via an Agile delivery approach through a combination of in-house resources coupled with external expertise where required. The work program for the development of these e-Forms commenced in 2017/18 and with further identified use cases, is forecast to progress into the next AA period up to 2021/22.

The following e-Forms have been delivered through the Mobility e-Form stream:

- Work Order Completion Data Form – utilised to capture work completion data for circa 200,000 work orders per year in the field, including robotic process automation to load the data into Maximo
- Cathodic Protection Data Form – utilised to capture Cathodic Protection data values in the field, including loading the data values into Maximo
- Customer Connection Appointment Form – utilised by multiple contractors to update customer appointment data into Maximo
- Large Customer Connection Order Form – utilised by builders and Retailers to provide details for large, complex customer connections
- Third Party Payments Form – utilised to standardise invoice data received from Third Parties
- Third Party Damage Form – utilised to capture additional data in the field in the event of a Third Party Damage event and load it into Maximo
- Leak Repair Completion Form – utilised to update leak repair details in the field and load the data into Maximo (EAM) in a timely fashion to ensure leak response and repair timeframe compliance
- Leak Repair Report Form – utilised to raise follow up leak repair work orders when leaks are identified in the field through Leak Surveys

The following e-Forms are either in development or proposed for development:

- Safety Field Assurance Audit Form – utilised for technical field safety audits, including data loading into Maximo
- Follow up Work Order Form – utilised to create follow up work orders for additional work identified when completing other field work
- Stock Replenishment Form – utilised by contractors to forward requested stock items to the stores for picking and packing prior to attending the store
- Operational Incident Report Form – utilised to raise operational incidents directly in the field, including data loading into Maximo

Additional e-Forms use cases are identified as in-flight e-Forms are rolled out within the business.

Stream 2 – Integrated Mobile Works Management Project

As identified in the Mobility Integration business case, the Integrated Mobile Works Management (IMWM) Stream will 'drive consistent, optimised work processes through mobile integration with the Enterprise Asset Management (Maximo) System'. Since early 2019, significant effort has been spent ensuring the scope of the IMWM Project is appropriate given the wide variety of mobility application and technology platform options. To June 2020, the following activity had been conducted in the **Concept and Develop Stages** to appropriately define the scope and technology of the IMWM Project:

- Conducted a Proof of Concept pilot, including trialling mobility technology ('Datasplice') in the field and testing business processes in a mobility environment
- Identifying the technology required to deliver our mobility solution, including capability for receiving and completing work orders, updating asset information and completing financial information. Through this activity, it was identified the preferred technology is a Tier 1 consolidated Field Service Management toolset, such as Click Software.
- Subsequently, the scope and the technology solution were ratified to progress to the Plan stage, which commenced in July 2020.

The **Plan Stage** of the project will deliver the following:

- Product selection
- System Build Design
- Business Process Design
- Test & Change Plans

Given the adoption of Tier 1 Field Service Management toolset and work completed to date through the Proof of Concept pilot, it was initially assumed the IMWM Project delivery (including Plan Stage) would consist of a twelve month rollout of known technology. As at September 2020, the initial stages of the Plan Stage have identified an incremental, Agile project delivery approach to ensure the technology is implemented correctly and minimise delivery risk. Based on the current schedule, it is considered a June 2021 Build 1 (Mobility toolset plus Manual Scheduling) is the likely initial Go Live in SA, with Build 2 (Dynamic Scheduling) and Build 3 (Analytics and Enhancements) likely by December 2021.

As such, the following will be delivered in the **Deliver Stage**:

- Test Case Development
- Build 1 (Mobility toolset plus Manual Scheduling)
- Build 2 (Dynamic Scheduling)
- Build 3 (Analytics and Enhancements)

The Go Live will also be supported by appropriate training and change management (including Enterprise business process implementation) up to and including Go Live.

Project Close is currently assumed to be December 2021.

Stream 3 – Enterprise System Mobility Applications

As identified in the Mobility Integration business case, there are additional Enterprise Applications that are planned to integrate with Mobility Applications, including GIS, HR, Payroll, HSE and Document Management. The GIS will be the first Enterprise System to be enabled with a Mobility Application, with the Smallworld Mobile Enterprise Suite ('MES') to be rolled out by June 2021 in parallel with delivery of the GIS Upgrade Project described above.

It is also planned to roll out additional mobile system applications following the IMWM Project and the MES rollout from July 2021, with the identified mobile applications due to be rolled out by June 2022.

Based on the work completed to date and updated information applied to the Mobility Integration Program schedule, the following table provides the updated cost profile for the Mobility Integration Program, including the updated profile of the Integrated Mobile Work Management Project extending into 2022 and the ongoing Mobile Application development out to 2023.

Table 3.7: Summary of Mobility Integration project costs for AGN SA

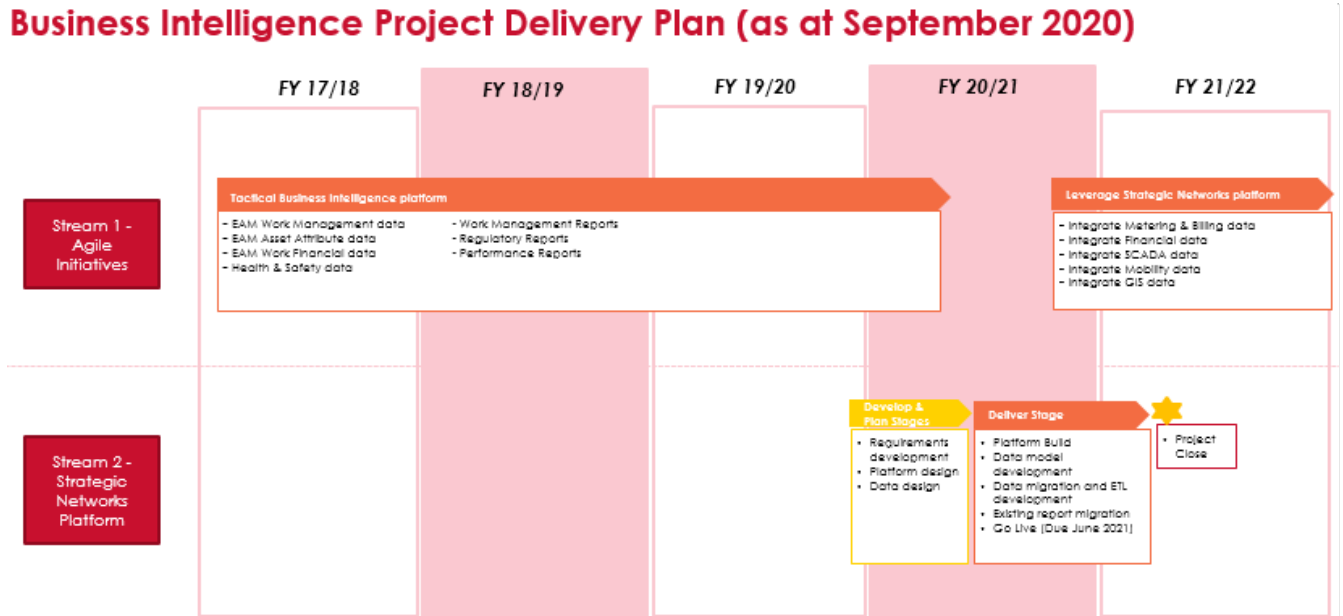
Expenditure Profile	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Total project cost	Total approved
Mobility Integration	144.4	465.0	247.7	4,067.0	3,761.0	1,800.0	10,445.1	9,752.9

3.3.1.2. Business Intelligence

The Business Intelligence Project has been progressed through the delivery of a tactical BI platform utilising the existing Microsoft stack.

Figure 3.4 below details the project delivery plan roadmap.

Figure 3.4: BI project plan



Project work completed to date is as follows:

Tactical Business Intelligence platform

In 2017, we implemented a tactical Business Intelligence platform, based on the existing Microsoft stack. This technology includes the extract, transform and load capability from various systems of record to a holding data lake. The data lake is explored to determine specific data representations that can be isolated to represent specific business focus areas. These business focus areas are available for interrogation using modern graphical use interface tools such as Power BI. Up until early 2020, AGN has leveraged this platform to develop the following at a low cost:

- Maximo (EAM) Works Management data – work order data extraction, transformation and visualisation enabling management reporting and analytics to ensure performance and compliance outcomes.
- Maximo (EAM) Asset data – asset data extraction, transformation and visualisation enabling management and regulatory reporting and analytics of asset information.
- Maximo (EAM) Work Financial data – work order financial data extraction, transformation and visualisation enabling financial management reporting and analytics to report and analyse financial performance.
- Health & Safety Data – health and safety incidents, hazards, management observations and field audit data extraction, transformation and visualisation enabling insights into H&S performance and improvement opportunities.
- Work Management Reports – development of visual dashboards and data extracts enabling management decision-making to ensure performance targets and compliance obligations are met

- Regulatory Reports – development of visual dashboards and data extracts enabling consistent regulatory reporting data for various regulatory jurisdictions against performance and statistical measures
- Performance Reports - development of visual dashboards and data extracts enabling timely understanding of 'in jeopardy' work performance and insights into performance correction requirements.

Through leveraging the platform, over 150 dashboards and reports, utilising 100 Maximo data tables with hundreds of millions of data items are currently accessed by over 300 users within the AGN business. This enabled us to better understand our requirements for an effective BI platform and to confirm the best approach to develop a more dynamic platform that can continue to meet our needs moving forward.

Strategic Networks Platform

Utilising the tactical platform has enabled AGN to understand the key business requirements for an effective BI platform. To facilitate this, a Networks Strategic Business Intelligence Platform project has commenced to create a more dynamic BI platform that will allow us to integrate a much larger volume of data for analysis and reporting.

The project has commenced planning and is due to Go Live in June 2021. The work required in the Deliver stage of this project is as follows:

- Platform Build
- Data Model development
- Data Migration and ETL development
- Existing report migration

Leverage Strategic Networks Platform

As noted above, the Strategic Networks platform allows the business to integrate a much larger volume of data for analysis and reporting. The Enterprise Applications planned to integrate into the Strategic Platform include:

- Metering & Billing Data
- Financial (Oracle) Data
- SCADA Data
- Mobility Data (following full SA Mobility Integration Go Live in December 2021)
- GIS Data (following Conflation in June 2022)

Based on the work completed to date and updated schedule based on the Plan Stage outcomes currently being finalised, the following table provides the updated cost profile for the Business Intelligence Program, including overlap into the next AA period.

Table 3.8: Summary of Business Intelligence project costs for AGN SA

Cost Profile	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Total project cost	Total approved
Business Intelligence	215.8	222.7	238.1	1,297.8	685.6	400.0	3,032.1	9,324.0

3.3.1.3. Life support and other rule changes

Life Support

In 2019 Life Support obligations were implemented in National Energy Customer Framework (NECF) jurisdictions. At the time, industry participants elected to use a manual email-based process instead of B2B aseXML transactions for the exchange of gas life support information.

In December 2019, the Victorian Essential Services Commission (ESCV) published a final decision adopting similar Life Support obligations in Victoria with an effective date of 1 July 2020.

Based on these widely introduced industry Life Support obligations, a formal GRCF industry consultation in 2020 found that a national Gas Retail Market B2B solution was justified and viable. AEMO introduced rule changes in June 2020 requiring industry use of a Life Support B2B solution, effective from November 2021.

Customer Data

The National Energy Retail Rules (NERR) regulatory obligations for managing customer data and life support registrations require that all participants must have effective, efficient and auditable systems and procedures.

These increased regulatory obligations have introduced a requirement to strengthen the technical design of the customer data transactions with industry and will be included in the scope of the Life Support Data Update Project.

This technical improvement is also expected to provide additional customer service benefits, such as improved customer communication capability and additional customer notifications regarding work status.

New Job Enquiry Codes

New Job Enquiry Codes (JEC) used within Service Order Requests are required to be introduced to improve customer requested activity along with meeting regulatory reporting requirements and improve management of vulnerable customers.

Project Scope

The project scope is to deliver three Industry agreed initiatives including an industry aseXML Schema uplift. The three initiatives are:

- Life Support (IN003-20);
- Customer Details (IN011-20) and
- New Job Enquiry Codes (IN026-15)

Each of these initiatives are mandatory regulatory requirements for distributors. The initiatives require amendments to AEMO Gas Retail Market Procedures and Gas Interface Protocols which are being made as part of these initiatives and each industry participant must make changes to their systems in order to meet regulatory compliance.

The work required to deliver this project is as follows:

- Detailed Requirements Specifications
- Solution Architecture
- Business Process Re-engineering
- Web Methods, CC&B and Maximo application and Biztalk interface Detailed Design
- Web Methods, CC&B and Maximo application and Biztalk interface configuration and customer database changes to store and manage Life Support and Customer Information.

- Upgrade aseXML Schema
- Industry Testing (Recertification)
- Bilateral Testing (APA/Retailers)
- Change Management
- Training

These industry changes are required to be implemented by November 2021, resulting in a portion of those project costs overflowing into the next Access Arrangement period.

3.4. Summary of the current AA period

Our updated forecast for IT investment in the current AA period is \$30 million. This is \$30 million (50%) below our approved allowance of \$60 million. As discussed in our IT Investment Plan and the sections above, this lower-than-forecast expenditure is due to a combination of efficiency improvements and prudent deferral of projects while we focused on more customer-critical systems.

Though delivery of some projects is delayed, by the end of the current period we will have:

- completed major upgrades to our SCADA and metering and billing systems; and minor updates to several other critical applications;
- undertaken substantial roll-out of major upgrades to our geographical information system and a field mobility integration project to enhance the mobile communications within our field workforce. This includes integrating enhanced mobile communications into the EAM System (Maximo) and GIS; and implementing prudent and efficient end to end business processes that automate EAM and GIS functionality through mobility;
- undertaken substantial roll-out of a core business intelligence platform to provide core functionality on which future capabilities can be developed and benefits realised;
- developed digital capabilities by improving our website and providing a web portal system to support the customer connections process; and
- enhanced cyber security and developed a new enterprise reporting system for AGN.

Our IT investment in the current AA period, by project, is summarised in Table 3.9.

Table 3.9: Summary of IT investment in the current AA period, \$'000 2019/20

Project	BC #	Approved	Actual 2016/17	Actual 2017/18	Actual 2018/19	Actual 2019/20	Forecast 2020/21	Total
Geospatial Information System	SA58	16,288.6	170.9	559.3	838.6	1,840.9	5,619.0	9,028.7
Applications Renewal	SA57	19,220.6	242.3	1,486.9	1,632.0	1,965.9	1,438.1	6,597.6
SCADA & Historian systems upgrade	SA62	3,641.8	-	954.5	1,965.9	-	-	2,920.4
Infrastructure Renewal	SA82	1,112.7	32.9	64.9	30.7	121.6	104.9	355.0

Project	BC #	Approved	Actual 2016/17	Actual 2017/18	Actual 2018/19	Actual 2019/20	Forecast 2020/21	Total
Business Intelligence	SA60	9,324.0	-	217.3	222.8	208.5	1,298.0	1,946.5
Mobility Integration	SA59	9,752.9	-	145.4	465.2	206.5	4,067.0	4,884.1
Develop Digital Capability	SA84	940.7	362.7	84.2	-	260.0	51.7	758.7
Life Support data solution	-	-	-	-	-	-	424.0	424.0
AGIG Strategy & Roadmap	-	-	-	-	-	436.3	2,832.5	3,268.9
Total		60,281.4	808.9	3,512.5	5,155.2	5,039.7	15,835.3	30,183.8

The above actual expenditure between 2016/17 and 2019/20 has been reported in our RIN as follows (noting smaller projects are grouped).

Table 3.10: Summary of actual IT investment in the current AA period to date, as per RINs, \$ nominal

Project name	2016/17	2017/18	2018/19	2019/20
3198 MAJOR PROJECTS - GIS CONSOLIDATION	162,331	539,240	823,880	1,840,944
3209 MAJOR PROJECTS - SA SCADA NIMDS UPGRADE	-	920,231	1,931,394	-
3210 MAJOR PROJECTS - EAM UPGRADE	-	591,287	-	-
3229 MAJOR PROJECTS - APPLICATIONS RENEWAL - CC&B UPGRADE	-	34,250	1,198,186	1,936,092
3007 MAJOR PROJECTS - BILLING OPTIMISATION	(38,793)	-	-	-
3199 MAJOR PROJECTS - MAXIMO LICENSES	-	465,465	-	-
3202 MAJOR PROJECTS - MOBILITY INTEGRATION	-	140,185	457,087	206,458
Business Intelligence	-	-	-	208,452
AGIG Strategy & Roadmap	-	-	-	436,320
Aggregate of other projects with total expenditure of less than \$500,000	644,914	695,654	654,288	411,475
Total (\$ nominal)	768,452	3,386,312	5,064,835	5,039,741
Total (\$ 2019/20)	808,860	3,512,529	5,155,198	5,039,741