

**APA Group**

**Business Case IT AM02**

**Application Renewal Program**

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| PROJECT APPROVAL |
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TABLE OF CONTENTS

[1 ISSUE/OPPORTUNITY DESCRIPTION 4](#_Toc426025043)

[2 Project objectives and OUTCOMES 5](#_Toc426025044)

[3 Benefits 7](#_Toc426025045)

[4 dELIVERY CONCEPT 8](#_Toc426025046)

[5 ESTIMATE AND TIMEFRAME 9](#_Toc426025047)

[6 Risk assessment 11](#_Toc426025048)

[7 Options considered and recommendation 12](#_Toc426025049)

[8 Justification 13](#_Toc426025050)

[8.1 National Gas Rules Criteria 13](#_Toc426025051)

# ISSUE/OPPORTUNITY DESCRIPTION

In order to ensure that business processes and IT application systems are efficient and effective, APA has undertaken a significant investment in a number of Business & Technology (B&T) projects over the past few years.

During the last Access Arrangement Period (pre FY17) a number of major projects to nationalise and upgrade key application systems were implemented. These projects provided improved scalability, flexibility and reliability.

The B&T projects delivered over the current Access Arrangement period include:

* National Works Management - Enterprise Asset Management (Maximo);
* Telemetry System – Nationalising the Telemetry System (Clear SCADA);
* Historian Reporting – Nationalising the Historian Reporting System (OSi/Pi);
* Hydrocarbon accounting, billing, BtoB integration – (Energy Components -EC).

These projects delivered sustainable application systems and aligned business processes to ensure that APA’s systems continue to meet current and future needs. APA proposes to continue its prudent investment in B&T projects in order to maintain its integrity of services and to mitigate avoidable risks.

# Project objectives and OUTCOMES

An application upgrade roadmap, based on a stay in business program of work, has been developed to ensure that these application systems are kept up-to-date.

This upgrade program will:

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

Generally an application upgrade will involve not only the application upgrade itself, but also upgrades to the underlying associated technology platform components, assessment, design and implementation of any changes to configuration, customisations and integrations associated with the upgrades and complete testing of all impacted end to end processes.

This project is required to perform upgrades on existing IT assets and does not involve their replacement.

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

In order to ensure that the IT application systems are kept stable and at optimum performance, APA utilises an application lifecycle management methodology to determine upgrade timelines and priorities. An application upgrade plan is in place which is based on a stay in business program of work and ensures compliance with an underlying principle of staying at a minimum of (N-1) for application upgrades. This enables appropriate levels of operation and inter-operability between vendors.

\* Note: Mobility technology upgrades have been identified as an exception to the applied 2 year cycle of application upgrades. The rapid change in technology cycle and the ongoing speed of mobility based change indicates that a yearly upgrade cycle for Mobility is a prudent approach in this area.

This application roadmap is used to identify and prioritise upgrades, and has been used as the basis for this proposal.

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

* Hydrocarbon accounting and billing – Tieto, Energy Components
* Historian System – Osisoft PI System
* Telemetry System - ClearSCADA
* Middleware – Microsoft BizTalk
* Dial Before You Dig – Mipela
* Field Data / Mobility Systems
* Geospatial Information System (GIS) – GE SmallWorld / ESRI
* Enterprise Asset Management – IBM, Maximo

# Benefits

The major benefits from the upgrade of the key systems are the reduced level of risk of system(s) failing or the integration between systems not operating as intended. Key points to note on this suite of systems are:

* Critical IT applications are linked together and are reliant on each other to allow high volumes of transactions to flow from one to the other;
* It is necessary to ensure the full functionality of these linked critical IT application systems to satisfy retail market rules and APA’s business requirements;
* Significant IT investment has been made in recent years to ensure that APA’s application systems meet their obligations as set out in the retail market rules. APA needs to ensure this investment is managed and maintained and this requires an upgrade strategy.
* Failure of the critical systems will have impacts across the business as the true state of the network will not be reliably known creating safety and operational risks.
* Alongside the reduced risks of failures from the critical systems there are also a number of benefits of moving to the latest versions. This includes:
* Continuation of IT vendor support, which will require movement to a recent version of the software;
* Security and integrity of business information which will improve with upgrades with the continued emphasise that vendors place on these solutions.
* Improved stability of IT systems over time;
* Compliance of the latest IT systems with market requirements.

# dELIVERY CONCEPT

The applications upgrade plan is based on a stay in business program of work to ensure that the application systems are kept up-to-date.

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Upgrade Projects | FY17 | FY18 | FY19 | FY20 | FY21 |
| Energy Components | X |  | X |  | X |
| Historian |  | X |  | X |  |
| SCADA |  | X |  | X |  |
| Biztalk |  | X |  | X |  |
| DBYD |  | X |  | X |  |
| Field Data / Mobility | X | X | X | X | X |
| GIS |  | X |  | X |  |
| Maximo | X |  | X |  | X |

# ESTIMATE AND TIMEFRAME

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

* APA utilises an industry standard B&T Project Methodology which is managed through formal governance
* This B&T Methodology divides the projects into key stages – concept, develop, plan, deliver and close. Each stage comprises of key tasks and activities to ensure the consistency and standardisation across projects
* The methodology includes an Estimation Tool, to ensure project estimates are standard and consistent
* This estimation tool has been used to forecast the work and cost estimates for the application upgrade program of work. This estimation tool utilises historical figures for resource cost estimates
* The work estimates are based on a complexity matrix tool, which uses a series of questions to categorise projects into simple, medium and complex
* The resource rates are based on actual resource costs, utilising a combination of internal and external (through vendors and trusted recruitment agencies) to ensure that services are carried out in a prudent and efficient manner

In addition to upgrades to the existing suite of applications, costings have also been forecast for software licence growth.

* It is estimated that the works will commence in FY2016 and continue on a rolling basis until the works are complete.
* Estimates (see appendix A) are for individual application renewal projects and will be run on a two year upgrade cycle as per the table below:

The proposed expenditure for the 2017 – 2021 is provided below ($000 real 2014/15, before escalation)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Upgrade Projects | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | Total |
| Energy Components | 0 | 206 | 0 | 206 | 0 | 413 |
| Historian | 52 | 0 | 52 | 0 | 52 | 155 |
| SCADA | 110 | 0 | 110 | 0 | 110 | 331 |
| Biztalk | 57 | 0 | 57 | 0 | 57 | 172 |
| DBYD | 62 | 0 | 62 | 0 | 62 | 185 |
| Field Data / Mobility | 37 | 37 | 37 | 37 | 37 | 184 |
| GIS | 287 | 0 | 287 | 0 | 287 | 860 |
| Maximo – Enterprise Asset Management | 0 | 339 | 0 | 339 | 0 | 667 |
| Total | 605 | 582 | 605 | 582 | 605 | 2,978 |

# Risk assessment

A risk assessment has been undertaken by identifying existing and potential network operational risks (and residual risks) in terms of the consequences and the likelihood of the risk. This is carried out using APA’s established evaluation criteria to produce an estimated level of risk and to rank and prioritise the risk based on APA’s established risk management and control criteria.

Risk analysis has been carried out (see below) that shows there is a high risk to operational activities if the Upgrade Program is not undertaken.

* IT systems may be unable to support business strategic objectives – particularly with national alignment and the delivery of initiatives to improve cost effectiveness;
* APA may be unable to address strategic imperatives and architectural weaknesses identified in the IT Strategic Plan;
* Targets for effective IT development and minimisation of support costs may not be achieved;
* An increased rate of failure in older applications may occur, resulting in unplanned production outages;
* Technology upgrades for core software will be required. Not continuing with the planned upgrades will mean the opportunity for ‘change out’ of inefficient technologies will be missed; and
* As software licence renewals are becoming due, staying with existing systems will lock APA into old technology and another licence cycle.
* On this basis the Application Upgrade Program is considered essential in order to mitigate the existing risks.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |   | **Health & Safety** | **Environment** | **Operational** | **Customers** | **Reputation** | **Compliance** | **Financial** | **Total Score of Risk Levels** |
| **Risk Untreated** | **Likelihood** | *Possible* | *Unlikely* | *Possible* | *Possible* | *Possible* | *Possible* | *Unlikely* | *Priority 2* |
| **Consequence** | *Medium* | *Insignificant* | *Significant* | *Medium* | *Medium* | *Minor* | *Significant* |
| **Risk Level** | *Moderate* | *Negligible*  | *High* | *Moderate* | *Moderate* | *Low* | *Moderate* | ***87*** |
|  *14* | *02* | *20*  | *14*  | *14*  |  *08* | *15*  |
|  | **Likelihood** | *Unlikely* | *Unlikely* | *Unlikely* | *Unlikely* | *Unlikely* | *Unlikely* | *Unlikely* | *Priority 3* |
| **Risk****Treated** | **Consequence** | *Medium* | *Insignificant* | *Significant* | *Medium* | *Medium* | *Minor* | *Significant* |
|  | **Risk Level** | *Moderate* | *Negligible* | *Moderate* | *Moderate* | *Moderate* | *Low* | *Moderate* | ***73*** |
|   | *12* | *02* | *15* | *12* | *12* | *05* | *15* |  |
|  | **Cumulative Risk Reduction for option 1** | ***14*** |

# Options considered and recommendation

Two Options were considered:

1. Upgrade critical IT applications on a regular basis, every two years, as per good industry practice:

This is the only option to address the risks associated with the failure to upgrade critical business IT applications.

Reduced scope:

1. This option involves reducing the scope of the upgrades to the critical business IT applications identified in option 1 by delaying the upgrade of some applications and / or not upgrading some applications at all.

However, due to the interdependency between the applications, this is not considered to be a prudent solution as it may expose APA to:

* A reduction in availability of services;
* A reduction in integrity of services; and
* An inability to comply with regulatory obligations or requirements.

**Recommendation**

The recommendation is to go with option 1: Upgrade critical IT applications on a regular basis, every two years, as per good industry practice. This is the only option to address the risks associated with the failure to upgrade critical business IT applications.

# Justification

Consistent with the requirements of rules 79(1)(a) and 91 of the National Gas Rules, APA considers that the capital expenditure to implement the applications renewals is:

* *Prudent* – the expenditure is necessary in order to maintain the integrity of services and comply with regulatory obligations and requirements. If the critical business IT application upgrades are not implemented there is a risk of:
	+ core applications no longer supported by IT vendors;
	+ critical business IT applications becoming increasingly unstable;
	+ being unable to address strategic imperatives and architectural weaknesses; and
	+ an increased rate of failure in older critical business IT applications, resulting in unplanned production outages.
* *Efficient* – The project will allow APA to maintain its cost effectiveness and operational efficiency and address the high risks of non-compliance with relevant regulations and legislation, potential customer and business interruptions and corresponding adverse financial and reputation impacts.

The material and direct labour costs, and applicable planning, design and commissioning charges, are based on historic actual costs of similar projects. Resource Unit Costs (both internal and external) are based on APA’s Project Management Office research, where actual placement costs have been used based on historical project resources and current resourcing rates (FY15).

APA confirms that it will use a formalised Project Methodology, utilising a combination of internal and external resources to deliver the program of work. The Project Methodology is outlined in Attachment B and provides a consistent, standard and quality assured project implementation framework. The Project Management Office (PMO) will provide guidance and governance to the project, ensuring that the work is carried out in a professional manner.

* *Consistent with accepted and good industry practice* – It is good practice to have all critical systems up to date and supported by vendors. This upgrade will ensure that APA remains in line with good industry practice.
* *Necessary to achieve the lowest sustainable cost of delivering pipeline services* – the Upgrade Project is necessary to mitigate the risks associate with operating on older versions of the software with the resultant performance and cost implications should these systems fail.

## National Gas Rules Criteria

In response to rule 79(1)(b) of the National Gas Rules, APA considers that the capital expenditure is justifiable under rules 79(2)(c)(i), (ii) and (iii) of the National Gas Rules. This is demonstrated in the table below.

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