Appendix 1.23: ICT capex investment briefs

Regulatory proposal for the ACT electricity distribution network 2024–29

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1. IT – Recurrent Investment Brief

1.1. Executive Summary

Project overview

This investment brief is for Evoenergy's ICT – Recurrent capital expenditure for the EN24 period. This covers investments across the ICT portfolio that are primarily focussed on maintaining existing ICT services, functionalities, capability and/or market benefits that repeat at least once every five years.

The investments in this investment brief include ongoing hardware refreshes, software system upgrade costs, and other ICT expenditure that is incurred periodically on a five year or less basis. These investments have similarities to operating expenditure due to their repetitive nature and are assessed separately to non-Recurrent capital expenditure by the AER.

The recommend Capex investment in EN24 is $19.3M ($2023/24).[1]

Key recommendations

It is recommended to proceed with the forecast ICT - Recurrent capital expenditure as it is aimed at minimising the cost of keeping Evoenergy's ICT systems functioning and to maintain the security and efficacy of the Evoenergy ICT environment.

The recurrent capital expenditure included in this forecast is not sufficient for some ICT systems to maintain the current base level of functionality as some of the major updates and upgrades do not meet the definition of recurrent expenditure. These investments are separate projects with dedicated business cases within the category of Non-Recurrent ICT capital expenditure. If those non-recurrent investments that relate directly to the maintenance of ICT systems are deferred, additional recurrent expenditure may be required as a stop-gap measure and the forecast contained in this investment brief will need to be revised.

The recommend Capex investment in EN24 is $19.3M.

1.2. Overview

Objective

The objective of this investment brief is to provide justification for Evoenergy's forecast of recurrent ICT capital expenditure for the EN24 period. The capital expenditure included in this category aims at ensuring Evoenergy's ICT infrastructure supports the wider ICT environment.

ICT systems degrade over time due to a range of factors, including rising security threats and risks, the need to address bugs and flaws in software, age of and usage-based degradation of physical devices, increasing complexity from tactical workarounds and customisations and changes in requirements due to updates, upgrades, or replacements of related and interconnected systems.

Evoenergy is not proposing a step change as it is forecasting a decrease of $194,876 (in real terms) between EN19 actuals and projections and the EN24 bottom-up project forecast.

All the proposed investments in this category are aimed at maintaining current ICT productivity and performance and only provide for minor improvements. Improvements take the form of quality-of-life

[1] Note, all $ amounts in this appendix refer to $2023/24 unless otherwise stated.

benefits for users and improvements in the performance of software and hardware provided by version upgrades supplied by vendors. Maintaining systems on the latest vendor supported versions supports cybersecurity efficacy and aligns with frameworks/initiatives/guidance provided by Essential Eight, ITIL, NIST, AESCDF and other Australian Signals Directorate initiatives.

Background

Evoenergy operates a suite of ICT Platforms, systems, and devices that perform key business functions such asset management, network management and resource management that enables the ICT function to meet its current performance levels and outputs whilst maintaining a steady level of operational cost. As with most ICT systems these programmes enhance productivity and efficiency and if not properly maintained, upgraded, or replaced in a timely manner can reduce the benefit they are designed to bring. These platforms, systems, and devices have been added to Evoenergy's technology infrastructure in previous regulatory periods, improving efficiency and productivity through various means. Keeping up with technology that is present in the general and specialist marketplace is not just key practice of the electricity industry but of all industries as many (if not all) business functions are reliant on these ICT systems and platforms.

Through the EN19 period, including projections for FY23 and FY24, Evoenergy recorded $19,510,946 of recurrent ICT capital expenditure.

Table 1 Recurrent ICT Investment (FY2020 - 24)

	FY20	FY21	FY22	FY23	FY24
Recurrent ICT Investment	$3,491,997	$3,615,936	$3,647,195	$5,147,896	$3,044,991
Total	**$3,491,997**	**$3,615,936**	**$3,647,195**	**$5,147,896**	**$3,044,991**

Failure to maintain ICT platforms and processes affects Evoenergy's key business drivers therefore Evoenergy's investment in ICT reflects the goals of:

1. Compliance.
2. Compatibility.
3. Customer excellence.
4. Industry best practice.
5. Simplicity.
6. Security.

Customer Importance

Evoenergy's approach to ICT – Recurrent investments aims to provide the delivery of secure, safe, reliable, and affordable services to Evoenergy customers. Up-to-date ICT platforms, systems and devices enables Evoenergy to provide a high-quality service that is expected by electricity customers. These investments impact all facets of Evoenergy's business and are therefore critical to the supply of electricity distribution services to customers.

To maintain current service levels, Evoenergy requires its ICT suite to be updated or upgraded as best practice to ensure access to and use of information is accurate, timely, and secure.

Strategic Alignment

Evoenergy's strategic approach to managing ICT - Recurrent systems is to reduce complexity through consolidation of platforms, systems, and devices at the lowest capital cost possible whilst maintaining current levels of operational efficiency with the potential for minor increases.

This approach is focused on maintaining the ICT – Recurrent investments by continuing successful management practices in place during the current period. This will ensure that capabilities are maintained such that Evoenergy will retain existing productivity savings derived from them.

The continued widespread use of the ICT platforms, systems and hardware is necessary for Evoenergy to meet the productivity targets and service levels contained in the submission for the next regulatory period. This includes maintained capital and operational expenditure during the next regulatory period and sustaining service levels.

1.3. Recurrent ICT Capex Forecast

Current Period (EN19)

Evoenergy has categorised expenditure at an individual project level as either recurrent or non-recurrent using the descriptions of each individual project. The recurrent projects are those that are aimed at maintaining operational and service levels with that of the previous regulatory period and where repeat costs have been observed.

Recurrent projects tend to be small (only one project over $0.5m) and short-lived with most being complete within a single year.

Evoenergy's approach is to categorise all small projects (~$100k and small) as recurrent irrespective of whether they add new capabilities or features to Evoenergy's ICT systems. This is because these projects are, in aggregate, repetitive in nature and form a constant baseline of small modifications to ICT systems that are necessary to deliver appropriate services to customers. For forecasting purposes applying a base-step-trend approach where forecasts are based on historic costs to these expenditures is reasonable. Inclusion within the recurrent category is appropriate.

Larger projects were assessed on a case-by-case basis to determine the underlying drivers of the investment (maintaining systems vs adding capabilities and the frequency of recurrence) and categorised accordingly.

The EN19 period Recurrent ICT expenditure for Evoenergy is on track to result in a spend of $19,510,946, which is made up of actual expenditure for FY20, FY21, and FY22 combined with projections for FY23 and FY24.

Forecast Period (EN24)

Evoenergy has taken a bottom-up approach to forecasting ICT capital expenditure requirements during the EN24 period. Each project in the forecast has been allocated to either recurrent or non-recurrent using the same criteria used for categorising EN19 projects.

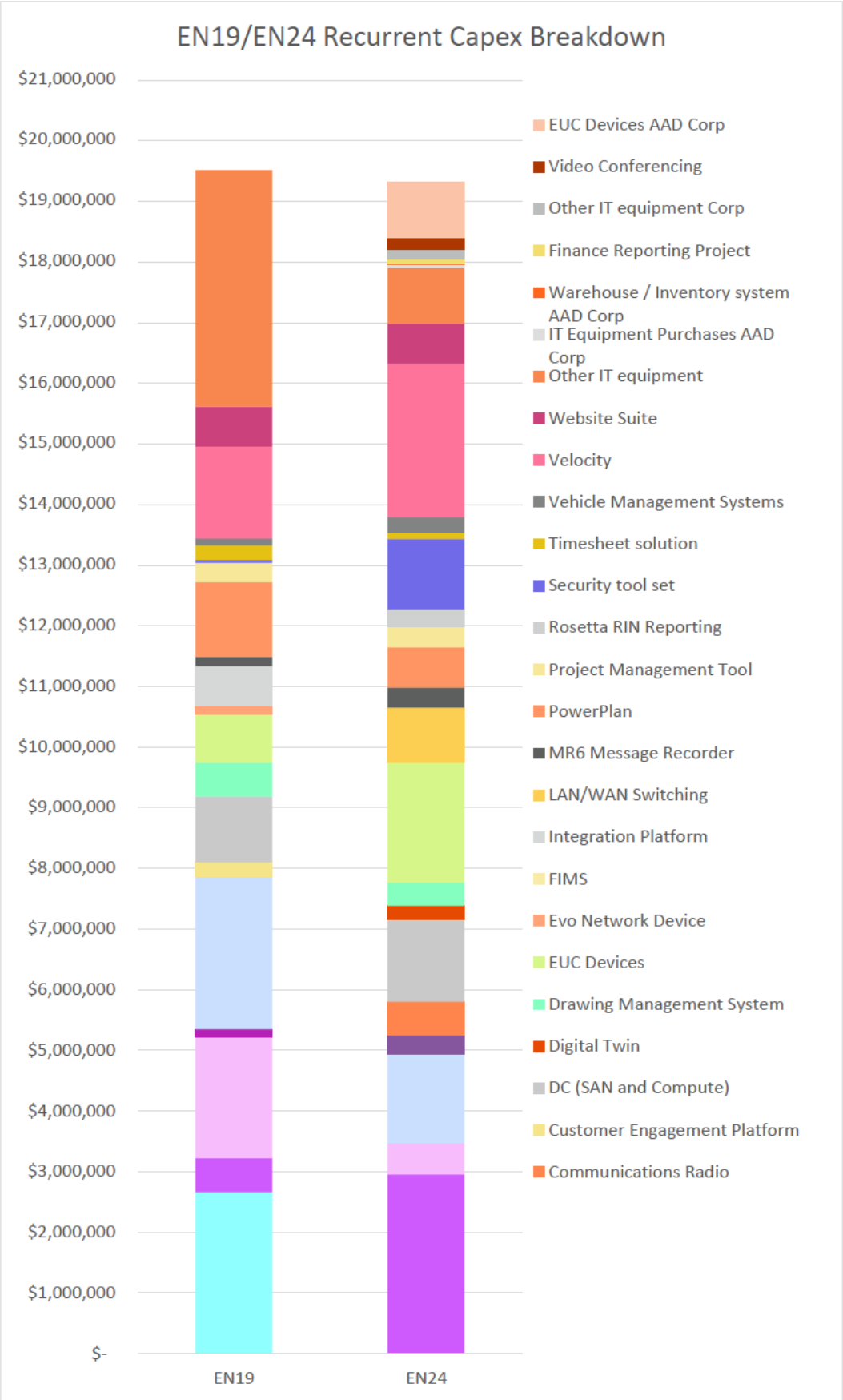
As a bottom-up approach has been used, the forecast is affected by major non-recurrent projects, which in most cases cause more regular lifecycle maintenance of ICT systems to be deferred or integrated into non-recurrent projects. Evoenergy does not split individual project costs across recurrent and non-recurrent.

Because of this effect, the forecast for EN24 is based on the preferred option being approved and progressed for each of the non-recurrent capital expenditure investment briefs. This similarly applied during EN19 where major non-recurrent projects reduced recurrent expenditure on ICT systems.

In arriving at the forecast for the EN24 Recurrent ICT expenditure, Evoenergy has identified areas that will incur new or increased recurrent capital expenditure, compared to the EN19 period, through

its bottom-up forecasting process. These increases are offset by reductions in other areas and result in a forecast Recurrent ICT expenditure of $19,316,070.

Figure 1: EN19/EN24 recurrent capex breakdown



1.4. Benefits

In maintaining system support and capability, Evoenergy's proposed recurrent investment program will deliver the following benefits:

- Maintain interoperability between platforms
- Maintain Asset Management Capability
- Follow industry best practise as outlined by the Australian Cyber Security Centre and within the AESCSF (Security Profile 3)
- Maintain ability to effectively forecast and manage assets keeping customer cost down

1.5. Assumptions, dependencies and risks

Assumptions

Table 2 IT Assumptions

Assumption description	Impact if assumption proven invalid	How will the assumption be assessed?
Vendor product roadmaps continue to provide solution on existing licencing and hosting model rather than forcing a change to a Software as a Service version.	Capex investment profile will be shifted to an Opex profile which has not been allowed for in the EN24 investment proposal.	Continued engagement with product vendors

Dependencies

Table 3 IT Dependencies

Dependency description	Dependent upon	Why is ICT a dependency?	Required date
Geospatial platform project	Preferred option is progressed	Alternate options will require additional recurrent expenditure	FY25 – FY29
Works planning and management platform project	Preferred option is progressed	Alternate options will require additional recurrent expenditure	FY25 – FY29
Billing and Markets platform	Preferred option is progressed	Alternate options will require additional recurrent expenditure	FY25 – FY29

Non-Recurrent (Other) projects	Preferred option is progressed	Alternate options will require additional recurrent expenditure	FY25 – FY29

Risks and controls

Table 4 IT Risks and controls

Risk description	Causes	Consequences	Preventative, Detective & Responsive Controls
Compromise of Platform	Lack of system hardening – Cybersecurity Vendor support Lack of compatibility	Loss of service Loss of information Loss of efficiency	Following vendor roadmap for upgrades and updates. Vendor support for recovery of platform Cybersecurity team remediation/recover of platform
Degradation of Platform	Lack of system hardening – Cybersecurity Vendor support Lack of compatibility	Loss of efficiency	Vendor support for recovery of platform Cybersecurity team remediation/recover of platform
Failure of Platform	Cybersecurity Vendor support Lack of compatibility	Loss of efficiency	Vendor support for recovery of platform Cybersecurity team remediation/recover of platform
Failure of Compliance	Vendor support Lack of compatibility	Financial/Loss of license	Vendor support for recovery of platform to meet licence requirements (Asset Management)

Recurrent investment overview

The table below provides a detailed breakdown of the estimated recurrent expenditure by system and financial year.

Table 5 IT Recurrent investment overview

Planned Recurrent Minor Upgrades	Cost				
	FY25	FY26	FY27	FY28	FY29
ADMS		$89,104	$89,827	$947,445	$1,818,393
ArcGIS			$518,753		
Aurion		$542,029			
Cityworks	$477,200			$488,340	$492,057
Communications (incl. phone)		$159,963			$163,200
Communications Radio		$202,555			$352,157
Corp Services IT Hardware/Software	$7,054				
DC (SAN and Compute)					$1,355,819
Digital Twin			$111,161		$112,513
Drawing Management System	$92,748		$94,487	$94,914	$95,636
EUC Devices AAD Corp	$180,259	$182,160	$183,640	$184,468	$185,872
EUC Devices	$396,137	$396,682	$397,103	$397,328	$397,714
Finance Reporting			$35,932	$36,094	
IT Equipment Purchases AAD Corp		$10,693	$17,966	$10,828	$10,911

LAN/WAN Switching					$904,241
MR6 Message Recorder		$164,957		$167,048	
Net Zero Model		$110,266			$112,513
Other IT Equipment Corp	$80,522		$82,032		
Other IT Equipment	$80,522		$82,032		
PowerPlan	$163,303	$165,076		$167,191	$168,460
Project Management Tool		$82,538	$83,224	$83,596	$84,230
Rosetta RIN Reporting	$92,748		$94,487		$95,636
Security Toolset	$59,360	$422,503	$60,473	$270,271	$358,376
Timesheet solution			$94,487		
Vehicle Management Systems	$61,239		$133,514		$63,173
Velocity	$835,099	$843,900	$850,755		
Video Conferencing		$10,693	$168,269	$10,828	
Warehouse/ Inventory System				$14,438	
Website Suite	$163,237		$166,298	$167,048	$168,320
Total	**$2,689,430**	**$3,383,118**	**$3,264,442**	**$3,039,838**	**$6,939,242**

2. Geospatial Information Systems Platform – ArcFM GIS Investment Brief

2.1. Executive Summary

Project overview

This investment brief is for Evoenergy's Geospatial Information Systems Platform for the EN24 period.

The Geospatial Information Systems Platform, ArcFM GIS, provides Evoenergy with the capability to store geospatial data and geographically map and model its assets. This platform integrates with the other key systems providing Evoenergy with the ability to accurately perform critical functions such as visualising, dispatching, troubleshooting, engineering, planning, and reporting on assets. The ArcFM GIS is critical to the Asset Planning System (PowerPlan), Billing and Market Systems Platform (Velocity), Works Management (Cityworks) and the Advanced Distribution Management System (ADMS).

Evoenergy currently uses version [redacted] of the Esri supplied ArcGIS combined with version [redacted] of the Schneider Electric supplied ArcFM to provide the full ArcFM GIS suite of services.

Both vendors recommend an upgrade pathway that involves migration to the latest technology version of ArcFM GIS services available in the Utility Network Model version [redacted] of their respective solutions.

Operating with an outdated ArcFM GIS increases risk of failure of the system and its associated functionality, as an absence or downgraded level of vendor support impacts the efficiency of process and network monitoring, database and application operation and functional design. It also increases cybersecurity vulnerability by not having access to the latest up-to-date patches, fixes, and security-oriented capability. It further introduces a potential risk to interoperability with other systems that would limit Evoenergy's ability to meet its licence requirements. This is particularly vital to Evoenergy in respect of maintaining alignment with requirements within asset management and network operation standards.

The recommend Capex investment in EN24 is $10.2M.

Key recommendations

The preferred solution for Evoenergy is to enable continued operation of the ArcFM GIS platform as it has to date albeit with improvements in efficacy and performance. It is therefore recommended to proceed with Option 3: Full Upgrade.

Option 3: Full Upgrade will allow Evoenergy to upgrade the ArcFM GIS platform to the most current vendor supplied version, which amongst other things will ensure continued inter-operability and compatibility with core Evoenergy platforms such as Cityworks and PowerPlan. It will also maintain consistency and currency with electricity distribution network and ICT industry best practice solutions for infrastructure, integration, architecture, and underlying core technical service provision. Furthermore, it will provide access to the latest architecture and design model for geospatial capabilities, positioning Evoenergy to make most effective and secure use of the full range of geospatial technologies in supporting successful business operations.

2.2. Overview

Objective

The objective of this project is to ensure Evoenergy has a fit for purpose ArcFM GIS platform to continue to support and maintain the efficiency of network asset management, maintenance, augmentation, visualisation, and replacement.

This investment brief covers non-recurrent capital investments for Evoenergy's ArcFM GIS platform and changes in recurrent capital expenditure where relevant to an option.

Evoenergy has identified a need for the ArcFM GIS to have a maintenance upgrade and a platform upgrade during the 2024-29 regulatory period. Both upgrades are categorised as non-recurrent as their cycles are longer than the 5-year regulatory cycle and no comparable recurrent investments were made during the EN29 period. The upgrades are further defined as Non-Recurrent – Maintain, as the objective of each investment is primarily to maintain Evoenergy's capabilities with improvements in efficiency or customer outcomes providing additional benefits that are not the core driver of the investment case.

Background

In conjunction with Esri's ArcGIS system, Evoenergy operates Schneider Electric's ArcFM system, which is a utility specific application built on top of the ArcGIS software. The original iteration of the ArcFM GIS platform was implemented in 2014 and has since had multiple maintenance and platform upgrades to keep it current. Evoenergy's most recent upgrade to ArcFM GIS occurred in 2020, which took the platform to version [redacted] for ArcFM and for ArcGIS.

The upgrade pathways for all systems that operate within Evoenergy's asset management eco-system are closely interlinked and each system needs to be kept on comparable versions to ensure that integrations and interactions between the systems remain functional. Within the ecosystem, ArcFM GIS integrates with Cityworks (Works Management), PowerPlan (Asset Planning) and the ADMS (Advanced Distribution Management System) to enhance Evoenergy's ability to effectively manage the full lifecycle of network assets, plan and execute asset-oriented activity and to model and forecast network and asset growth.

Not maintaining currency of the ArcFM GIS in its vendor defined product lifecycle and in close alignment with the other core network systems can, in specific cases, prevent or inhibit the capability and support status of the other systems. This in turn can have secondary and tertiary impacts on other Evoenergy systems that do not directly communicate with the ArcFM GIS but do communicate (and need to be on compatible versions) with other core components of the broader technology ecosystem, for example the Billing and Market System, Velocity.

The absence of a fit for purpose ArcFM GIS Platform would render Evoenergy unable to effectively manage and track assets, model asset and network growth or operate other critical ICT systems. Outdated maintenance and lifecycle versions can cause compatibility issues and increase the likelihood and consequences of software failure. It can also impact Evoenergy's ability to maintain its compliance with industry standards-based asset management practice as required by licence conditions and limit its ability to maintain industry best practice in managing network asset lifecycles.

Furthermore, maintaining currency with supported vendor product lifecycles mitigates cybersecurity risk by ensuring access to systems that are maintained to best industry practice and follow the Essential Eight principles and recommendations made by the Australian Signals Directorate.

In short, the benefits of investment in the ArcFM GIS Asset Management platform include:

1. Regulatory Compliance for Asset Management.
2. Industry best practice alignment.
3. Reduced operational and strategic complexity.
4. Secure operating and data management practices and processes.

In addition to the major non-recurrent maintenance and platform upgrades, the ArcFM GIS platform receives frequent lifecycle updates. Lifecycle updates provide incremental benefits to the platform but are primally for the provision of bug fixes and security issue resolutions. These minor updates are categorised as recurrent capital expenditure and are not included in the scope of this investment brief.

Evoenergy's IT forecast for EN24 currently includes the following recurrent investments in the ArcFM GIS:

Table 6 GIS planned recurrent minor upgrades

Planned Recurrent Minor Upgrades	Cost
ArcFM GIS Lifecycle update FY27	$518,753

Recurrent investments included in the EN24 forecast are based on the recommended option in this investment brief being progressed. The recommended option requires the minor updates to be deferred or integrated into major upgrades in years when non-recurrent investments are being undertaken. If an alternate option is progressed additional recurrent investments may be required (see Options 1 and 2).

Customer Importance

The ArcFM GIS and related systems play a critical role in enabling delivery of secure, safe, reliable, and affordable geospatial asset management services such that Evoenergy staff, suppliers, partners, and customers can experience high-quality electricity distribution network services.

To sustain current service levels and continue to meet stakeholder expectations, the ArcFM GIS that stores, analyses, visualises and reports on Evoenergy's asset and geospatial information must be maintained such that it operates with an elevated level of reliability and provides stakeholders with confidence in network asset management practice across Evoenergy.

An appropriately configured, supported, and operated ArcFM GIS contributes to faster network service restoration times following unplanned outages, allows Evoenergy to more efficiently respond to customer, regulator, supplier, and partner queries and requests that relate to network assets. It also supports more efficient planned outages that reduce outage times for customers.

Strategic Alignment

Evoenergy's strategic approach to operating Asset Management and Geospatial systems is to continue to simplify and consolidate network asset-related systems and functionality to minimise whole-of-life capital and operating costs.

Evoenergy's approach to maintaining the ArcFM GIS platform is based on continuing the successful management practices as they operate in the current period, thereby ensuring current capabilities are maintained so that Evoenergy will retain productivity savings already derived from the use, maintenance, and operation of the ArcFM GIS.

The continued organisation wide use of the ArcFM GIS is necessary for Evoenergy to meet productivity targets and service levels contained in the submission for the EN24 period. This includes maintaining current levels of capital and operational expenditure, whilst sustaining service levels and meeting annual operational expenditure productivity improvements.

Investment in the ArcFM GIS is further required to ensure it aligns with and is compatible with changes to other systems, services, processes, and network assets.

2.3. Options analysis

Options overview

Evoenergy has assessed three options for maintaining the GIS platform.

1. Current state / defer upgrade
2. Maintenance upgrade
3. Full upgrade

Option 3, the preferred option, is the only option that maintains efficiency at the same time as building the potential for uplift.

Option 1 minimises capital expenditure by keeping the system as it currently exists with minor lifecycle updates and upgrades, which would see the efficiency of the system decrease over time, leading to undesirable cost growth to maintain current performance.

Option 2 considers maintenance upgrades only, so would allow the platform to fall behind the most recent vendor releases, which may have productivity, security, integration, and efficiency implications.

Option 1 – Current state / defer upgrade

Option 1 is to maintain the basic level of operation for the ArcFM GIS platform by only implementing annual lifecycle updates. Lifecycle updates involve patches and fixes recommended by the vendor, which provide small improvements in performance and functionality, as well as small security vulnerability fixes.

Option 1 would require Evoenergy to make minor modifications, customisations, and workarounds to address emerging business requirements, such as adding new fields to ArcFM GIS asset data and adding new asset types to the database.

Option 1 relies on the recurrent expenditure component to keep the platform alive and functional, however foregoes major maintenance and platform upgrades. Option 1 would incur recurrent cost in FY25, 26, 28 and 29, which would otherwise be deferred or integrated into the maintenance and platform upgrades when compared to the budgeted IT recurrent capital expenditure forecast.

This current state option would render the ArcFM GIS platform unsupported by Esri and Schneider in January 2024, which brings into play a range of negative implications for the platform and its use across Evoenergy, such as the potential appearance of security weaknesses or software failures.

Major upgrades of important systems such as the ArcFM GIS also tend to add built in capabilities that replace workarounds and customisations that are often developed by system users, allowing the system to become less complicated and easier to upgrade in future.

Operating the ArcFM GIS as an outdated platform would require Evoenergy to make custom modifications and could over-complicate the platform management and support model to meet

emerging business requirements. This in turn would make the platform more difficult and expensive to maintain, operate, manage, and integrate with the broader Evoenergy technology ecosystem.

Pursuing option 1 would also impose limitations on Evoenergy's ability to update or upgrade related technology systems such as Cityworks or ADMS as the current version of ArcFM GIS may have integration or architectural issues with future updated versions of the full technology ecosystem. Whilst it is highly likely that such issues would be overcome, it would come at increased cost and complexity in managing the ArcFM GIS and the upgrades or updates to other systems.

Major updates to the platform will be deferred until the EN29 period Under Option 1. It is assumed that the cost of these upgrades will be at least the same and potentially more if undertaken then rather than undertaken during EN24 as planned in Option 3. The potential for increased cost would come because of the technical debt accrued for the ArcFM GIS and associated services in the EN24 period along with any customisations and workarounds that may have to be enacted to maintain required levels of interaction with the broader technology ecosystem.

Costs

Option 1 requires recurrent capital expenditure of $2,593,767 during the EN24 period. This includes $2,075,013 of recurrent capital expenditure not included within Evoenergy's current forecast.

The additional ArcGIS Lifecycle update costs in FY25, FY26, FY28 and FY29 are estimated at the same level of the planned FY27 annual update cost.

Table 7 GIS Cost Option 1

Project Title	FY25	FY26	FY27	FY28	FY29
ArcGIS Lifecycle updates	$518,753	$518,753	$518,753 *	$518,753	$518,753
Total	**$518,753**	**$518,753**	**$518,753***	**$518,753**	**$518,753**

**Amount is included in Evoenergy's proposed Recurrent IT capex forecast.*

The cost of a deferred, combined maintenance and platform upgrade at the start of EN29 has been included in the financial assessment of this option. The cost is equal to the cost of these upgrades in Option 3. No allowance has been made for the increase in upgrade complexity caused by allowing the system to become more out of date.

Risks

Table 8 GIS Risks Option 1

Risk	Description
Vendor support	Outdated platforms falling behind the most recent releases of major version upgrades could fall out of vendor support and/or may have slower response times form the vendor if unknown issues or vulnerabilities are identified.

Vulnerability	Increased cybersecurity vulnerability due to not being on newer and more supported versions.
Failure/Degradation	Increased risk of running in a degraded state or failing, recovery of this would be costly as the vendor or third-party service providers could charge additional fees for supporting out of date versions
Integration	As the platform becomes more dated, it will be out of alignment with related systems that are upgraded to modern equivalents. Annual minor upgrades will become more difficult as the gap between versions with other Evoenergy applications increases.

Evoenergy has estimated a 5% increase in the cost of planned upgrades of related systems to account for the additional complexities caused by not updating the GIS to a newer version. This has been included in the financial assessment of this option.

Benefits

Table 9 GIS Benefits Option 1

Benefit	Description
Performance	Small performance increases due to optimisation during patching
Support	This option is expected to maintain support from the vendor to ensure a response if systems fail or have issues.
System Hardening	System hardening through security vulnerabilities being patched.

No quantified benefits have been included in the financial assessment of this option.

Option 2 – Maintenance Upgrade

Option 2 is to implement a Maintenance Upgrade of the ArcFM GIS platform during the EN24 period and defer a major platform upgrade until the EN29 period. This would allow Evoenergy to upgrade the platform to the latest minor version, [redacted], within the current product architecture model and to make simplifications and maintain the system at this level for the remainder of the EN24 period. This option would partially mitigate the risk relating to security and software failure whilst maintaining vendor support at a more preferred level than under Option 1. Vendor support for the [redacted] version of the ArcFM GIS platform ends in March 2026 however moving to version [redacted] brings benefits related to positioning the data(base), operating practice and system use in preparation for the major platform upgrade to the Utility Network Model of ArcFM GIS version [redacted].

At present Evoenergy implements maintenance upgrades of the ArcFM GIS in 4-yearly cycles, with the last major update to version [redacted] occurring in 2020 in a program, which also updated the underlying technology platform to a cloud-based infrastructure. This came at a total cost in the range of $1m - $2m. Since the last update, only minor security patches have been applied.

The Maintenance Upgrade will stabilise the ArcFM GIS on the [redacted] version of the software and include work to update to known levels the integrations and interaction processes with other related systems. Given the major platforms that ArcFM GIS interacts with (PowerPlan, ADMS and Cityworks) are all scheduled for major upgrades between FY23 and FY27, the integration incompatibility risk towards the end of the EN24 period remains high and may have implications for major upgrades of those platforms.

Costs

Option 2 requires non-recurrent capital expenditure of $2,487,154 during EN24. It also requires $1,556,260 of recurrent capital expenditure for annual updates after the maintenance upgrade is complete. Of this amount, $1,037,507 is not included within Evoenergy's current budget for recurrent IT capex.

Additional ArcGIS Lifecycle update costs are estimated at the same level of the planned FY27 annual update cost.

The ArcGIS Maintenance Upgrade cost is estimated based on the cost of the upgrade to version [redacted] in 2018.

Table 10 GIS Costs Option 2

Project Title	FY25	FY26	FY27	FY28	FY29
ArcGIS Lifecycle update	-	-	$518,753 *	$518,753	$518,753
ArcGIS Maintenance Upgrade	$1,237,059	$1,250,095			
Total	**$1,237,059**	**$1,250,095**	**$518,753***	**$518,753**	**$518,753**

**Amount is included in Evoenergy's proposed Recurrent IT capex forecast.*

Risks

Table 11 GIS Risks Option 2

Risk	Description
Vendor support	Outdated platforms missing significant upgrades could contribute to reduction of vendor support effectiveness. This option will keep Evoenergy on ArcGIS version [redacted] and defer upgrade to version [redacted] or an alternate system until EN29. At this point Evoenergy will have been on [redacted].
Vulnerability	Increased cybersecurity vulnerability due to the lack of patches, fixes, and upgrades

Failure/Degradation	Increased risk of running in a degraded state or failing, recovery of this would be costly as the vendor could charge additional fees for supporting out of date versions
Integration	As the platform becomes more dated, it will be out of alignment with related systems that are upgraded to modern equivalents. Annual minor upgrades will become more difficult as the gap between versions with other Evoenergy applications increases.

Benefits

Table 12 GIS Benefits Option 2

Benefit	Description
Performance	Small performance increases due to optimisations during patching and quality of life improvements contained in the latest version.
Support	Maintains full support from vendor if systems fail or have issues.
System Hardening	System hardening through security vulnerabilities being patched.

Option 3 - Full Upgrade (preferred option)

Option 3 is to undertake a Full Upgrade of the ArcFM GIS platform which involves a Maintenance Upgrade (discussed in Option 2) at the start of the EN24 period followed by a Platform Upgrade at the end of EN24. These upgrades will uplift Evoenergy's ArcFM GIS platform bringing it in line with the latest Esri and Schneider architecture, database and system models and settle on their most up-to-date supported product versions.

The Maintenance Upgrade is a large update of the ArcFM GIS software scheduled for the FY25/26 period, which aims to apply maintenance in accordance with the vendor roadmap. This is to ensure vendor support is maintained for patches and fixes, and that compatibility is maintained for ArcFM GIS integrations and interactions with the broader technology ecosystem including Asset Planning, Works Management and ADMS platforms.

The Maintenance Upgrade will apply the latest available minor version of the [redacted] major version and will include simplifying the system where possible by removing customisations and workarounds.

In addition to the continued vendor support aspects of the Maintenance Upgrade, the [redacted] version positions the ArcFM GIS data(base), operating practice and system use ahead of the major architectural and system design changes that come with the Platform Upgrade to the Utility Network version [redacted] of the Esri and Schneider solutions.

The Platform Upgrade is a large upgrade scheduled in the last two years of the EN24 period. Vendors, Esri and Schneider, have recommended this upgrade as they are moving to a new utility-based framework for storing geospatial data. The new data structure, described as the Utility Network Model, is optimised for utility networks providing enhanced ability to use data across all business processes.

The Platform Upgrade will occur after approximately 8 years of operation of the currently installed [redacted] version of ArcFM GIS. At this point, the [redacted] and their features and capability will be inferior to other more modern geospatial systems and solutions available on the market.

The Platform Upgrade is also expected to improve compatibility with Asset Planning, Works Management and ADMS platforms, whilst increasing the value of outputs of the Digital Twin project. The Digital Twin project will produce geospatial asset data from Evoenergy's library of LiDAR data, which at present is expected to be stored in an alternative purpose-built off-the-shelf solution for this data, but could, depending on new capabilities added by Esri and Schneider, be integrated in the core ArcFM GIS.

As the Platform Upgrade will have occurred after such an [redacted] versions, Evoenergy considers this portion of the investment to still meet the requirements to be categorised as Non-Recurrent – Maintain although it is noted that there are aspects of new or expanded capabilities and functions unlocked by the investment.

Option 3 is recommended as it reduces risk in all identified areas and allows Evoenergy to reduce complexity through moving to the new Utility Model platform designed and supported by Esri. It will also mitigate cyber risk by being on a version and platform that has long term support from the vendor.

Costs

Option 3 has a total non-recurrent capital expenditure of $9,701,444 during the EN24 period. This option incurs no additional recurrent capital expenditure as the required expenditure for one annual lifecycle update in FY27, costing $518,713, is included in Evoenergy's current budget forecast.

The ArcGIS Maintenance Upgrade cost is estimated based on the cost of the upgrade to [redacted]

The ArcGIS Platform Upgrade cost was estimated by Evoenergy SMEs based on the cost of comparable major IT system upgrade projects.

Table 13 GIS Costs Option 3

Project Title	Project ID	FY25	FY26	FY27	FY28	FY29
ArcGIS Lifecycle update	-	-	-	$518,753 *	-	-
ArcGIS Maintenance Upgrade	-	$1,237,059	$1,250,095	-	-	-
ArcGIS Platform Upgrade	-	-	-	-	$3,593,469	$3,620,821
Total	**-**	**$1,237,059**	**$1,250,095**	**$518,753 ***	**$3,593,469**	**$3,620,821**

**Amount is included in Evoenergy's proposed Recurrent IT capex forecast.*

Risks

Table 14 GIS Risks Option 3

Risk	Description
Platform upgrade delays and overruns	This option includes a complex platform upgrade that may suffer from delays and cost overruns if not correctly managed.

This risk is not quantified in the financial analysis for this option as capital cost contingencies are expected to net out across the wider IT and network capex programmes.

Benefits

Table 15 GIS Benefits Option 3

Benefit	Description
Performance	Performance increases due to optimisations using the utility framework
Asset management productivity	The platform upgrade will provide additional functionality and simplify the updating of the geospatial database due to the more electricity utility focused data model. This is expected to enable Evoenergy to continue to manage its growing asset base without increasing headcount after the upgrade is complete (after FY29).
Support	Full support from the vendor.
System Hardening	System hardening through security vulnerabilities being patched.

A productivity benefit has been forecast to begin in FY30 to reflect the incremental benefits from the new data model and other capabilities introduced by the upgrade GIS system. The benefit is in the form of avoided cost growth as the upgrade is expected to help Evoenergy to continue to manage and operate its network without increasing GIS related headcount

Summary

Evoenergy proposes to proceed with Option 3 – Full Upgrade.

This option will maintain the GIS ensuring it is on a long-term supported platform and remains fit-for-purpose.

Options financial summary

The options considered were focused on maintaining existing capability rather than introducing new capability. As such, the financial assessment was based on forecast investment against each option, the risks associated with each option, and the qualitative benefits associated with the option.

While not quantified, the risk profile associated with Options 1 and 2 are anticipated to have an increasing Opex profile to enable continued secure support across the ArcFM GIS platform.

Table 16 GIS Options Expenditure

Option	EN24 Capital Expenditure $millions
Option 1 – Defer upgrade	[2.59]
Option 2 – Minimal upgrade	[4.04]
Option 3 – Full upgrade	[10.22]

2.4. Benefits

In maintaining system support and capability for the ArcFM GIS platform, Evoenergy's proposed investment will deliver the following benefits:

- Maintain interoperability between platforms
- Maintain Asset Management Capability
- Follow industry best practise as outlined by the Australian Cyber Security Centre and within the AESCSF (Security Profile 3)
- Maintain ability to effectively forecast and manage assets keeping customer cost down

2.5. Assumptions, dependencies and risks

Assumptions

Table 17 GIS assumptions

Assumption description	Impact if assumption proven invalid	How will the assumption be assessed?
Vendor roadmaps across the ArcFM GIS platform do not change significantly for the Evoenergy suite of products early in the EN24 period	Proposed investment profile may not align with the required timing or approach to ensure system interoperability and a secure, stable, platform.	Continued engagement with product vendors and industry partners

Dependencies

Table 18 GIS dependencies

Dependency description	Dependent upon
System upgrades across the ArcFM GIS platform can be sequenced with the proposed investment in related systems to support the Network Utility Model	Evoenergy architecture and integration providing sufficient guidance on the use and implementation of the network utility model within the Evoenergy IT environment.

Risks and controls

Table 19 GIS risks and controls

Risk description	Causes	Consequences	Preventative, Detective & Responsive Controls
Compromise of Platform	Cybersecurity Vendor Support Interoperability	Loss of service Loss of information Loss of efficiency	Following vendor roadmap for upgrades and updates.
Degradation of Platform	Cybersecurity Vendor Support Interoperability	Loss of efficiency	Vendor support for recovery of platform
Failure of Platform	Cybersecurity Vendor Support Interoperability	Loss of efficiency	Vendor support for recovery of platform
Compliance	Vendor Support Interoperability	Financial / Loss of license	Vendor support for recovery of platform

3. Works Management Platform – Cityworks Investment Brief

3.1. Executive Summary

Project overview

This investment brief is for Evoenergy's Works Management system for the EN24 period.

Cityworks is the Works Management system used by Evoenergy to manage and plan works and to support the effective and efficient operation of assets on and related to the electricity network.

Cityworks provides Evoenergy with a comprehensive range of capabilities including task management, asset management, risk assessment, scheduling, short-term works planning and elements of project and program management. Cityworks additionally provides the capability for Evoenergy to manage Emergency Response works and to support the effective and efficient operation of network assets.

Evoenergy currently uses the [redacted] of Cityworks, which is supplied by vendor Azteca (part of the Trimble group of companies). The vendor has not provided an end date for product support of this version, but currently offers a [redacted]. Evoenergy expects newer versions to be released before the start of the EN24 period.

The vendor supports the practice of maintaining currency with the latest available product versions as a fundamental means to ensure the security, efficiency, and efficacy of the platform and to secure access to the architectural and functional development pathway of the platform.

Operating an outdated Works Management system increases risk of system failure as an absence or downgraded level of vendor support impacts the efficiency of process and network monitoring, database and application operation, and business practice and function design. It also increases cybersecurity vulnerability by not having up to date patches and fixes and it introduces a potential risk to interoperability with other systems that would limit Evoenergy's ability to meet its licence requirements. This is particularly vital to Evoenergy in respect of maintaining alignment and compliance with safety, asset management and electrical distribution network standards.

The recommend Capex investment in EN24 is $6.5M.

Key recommendations

It is recommended to proceed with Option 2: Full Upgrade. This option will allow Evoenergy to upgrade the Cityworks platform to its most current version, which will ensure continued inter-operability and compatibility with other core Evoenergy platforms such as the ArcFM GIS and PowerPlan. It will also maintain consistency and currency with electricity network and ICT industry best practice solutions for infrastructure, integration, architecture and underlying core technical solution and service provision.

3.2. Overview

Objective

The objective of this project is to ensure Evoenergy has a fit for purpose Works Management system, enabling effective distribution of resources to efficiently complete network asset maintenance, augmentation, and replacement planning.

This investment brief covers non-recurrent capital investment projects for the Works Management system and changes to budgeted recurrent capital expenditure where relevant to the options assessed. The platform upgrade is categorised as *Non-Recurrent – Maintain* as it covers ITC system upgrades with a cycle that is longer than the 5-year recurrent regulatory cycle and the upgrade is intended to maintain Evoenergy's capabilities with only minor improvements in efficiency outcomes.

Background

Evoenergy operates Cityworks as its Works Management system with the current version, Cityworks 15.5.3 being implemented in 2021. In addition to Works Management, Cityworks plays a key role in Asset Management and Planning through its integrations with the ArcFM GIS and PowerPlan systems.

Evoenergy's Cityworks system has been heavily customised and is currently used for purposes beyond its intended capabilities. The customisations limit Evoenergy from easily upgrading the system and constrain Evoenergy's operations due to inflexibilities that have grown into the current implementation.

An end-to-end system health check undertaken with the vendor and their recommended consultancy partners is planned to assess the current deployment state and thereafter to develop a change plan and solution roadmap that will seek to reduce deployment complexity and rigidity, focus the product use on its core capabilities, and support a simplified best practice implementation of the Cityworks system.

The outcome of this program combined with pursuing the recommended upgrade option is to deliver an efficient and effective Works Management system, without which Evoenergy would be unable to appropriately plan, and conduct works on its network and would incur additional Opex costs to maintain service standards to current and desired levels.

Evoenergy's ITC forecast for EN24 currently includes the following recurrent investments in the Works Management system:

Table 20 Cityworks planned recurrent minor updates

Planned Recurrent Minor Updates	Cost
Cityworks Lifecycle & Regulatory Update FY25	$477,200
Cityworks Lifecycle & Regulatory Update FY28	$488,340
Cityworks Lifecycle & Regulatory Update FY29	$492,057

The recurrent investments included in the EN24 forecast are based on the recommended option in this investment brief being progressed. The recommended option requires minor updates to be deferred or integrated into major upgrade projects in years when non-recurrent investments are being undertaken. If an alternate option is progressed additional recurrent investments may be required (see Options 1 and 2).

Customer Importance

Cityworks and related systems across the Evoenergy technology ecosystem operate together to enable and support delivery of secure, safe, reliable, and affordable electricity network services to Evoenergy customers.

Cityworks provides Evoenergy a comprehensive suite of Works Management capabilities and operates in an integrated network with Evoenergy's Asset Planning and Asset Management systems in playing a crucial role in the supply of the desired electricity distribution network services to customers.

An up-to-date full function Works Management capability such as available through the Cityworks platform allows Evoenergy provide the high-quality electricity distribution service expected by customers It readily supports the provision of elevated levels of capability, reliability, security, simplicity, and efficacy. It also supports rapid response services to address customer emergency requests, management of work crews to respond to unplanned outages and capabilities that help to efficiently plan network maintenance activities that reduce the duration and frequency of planned outages.

The alternative to employing and maintaining an efficient Works Management system such as Cityworks at the same time as maintaining current service levels would be a need to significantly increase the number of Evoenergy staff, which would result in increased costs to customers.

Strategic Alignment

Evoenergy's strategic approach to Works Management systems is to continue to simplify and consolidate network asset related management services to minimise whole-of-life capital and operating costs.

Evoenergy's approach to maintaining Cityworks as the Works Management system is based on continuing the successful management practices that operate in the current period. This will ensure that current capabilities are maintained so that Evoenergy will retain productivity benefits already derived from the Works Management platform.

The continued widespread use of the Cityworks is also fundamental for Evoenergy to meet the productivity targets and service levels contained in the submission for the EN24 period, including sustaining service levels and meeting annual operational productivity improvements.

Investment is therefore required in the Cityworks system to ensure this can occur and to ensure it remains fit for purpose and aligns with and is compatible with changes to other systems, services, processes, and network assets.

3.3. Options analysis

Options overview

Evoenergy has assessed two options for maintaining the Works Management platform.

1. Current state or defer upgrade.
2. Full upgrade.

Option 2, the preferred option, is the only option that maintains the platform in a fit-for-purpose state and follows industry best practice. Option 1 minimises capital expenditure by keeping the system as it currently exists with minor lifecycle updates and upgrades, which would see the efficiency of the system decrease and lead to undesirable cost growth to maintain current performance.

Option 1 - Current state or defer upgrade

Option 1 maintains the basic level of operation for the Cityworks platform through only implementing the annual lifecycle updates. Lifecycle updates involve fixes, patches and adaptations to the platform that maintain core performance and functionality. The updates also include fixing security vulnerabilities. The lifecycle updates may also require developing minor customisations for the platform to meet emerging business requirements.

In this option, the platform upgrade for the Works Management system will be deferred to the EN29 period. Evoenergy will be able to keep the Cityworks software updated but will take no actions in response to the planned health check of the Cityworks system.

The current level of complexity of the Works Management system will be retained throughout EN24, which may have implications for the other ITC systems Evoenergy is seeking to enhance and simplify, such as Velocity and the adoption of a fit-for-purpose Customer Relationship Management (CRM) system.

Option 1 would incur additional recurrent ITC capital expenditure in FY26 and FY27 that is not currently included in Evoenergy's budget forecast, as the annual updates in these years are deferred and integrated into the Full Upgrade.

Costs

Option 1 requires recurrent capital expenditure of $2,422,996 during the EN24 period. This includes $954,399 of recurrent capital expenditure not included within Evoenergy's current forecast.

The additional Cityworks lifecycle update costs in FY26 and FY27 are estimated at the same level of the planned FY25, FY28 and FY29 annual update costs.

Table 21 Cityworks costs option 1

Project Title	Project ID	FY25	FY26	FY27	FY28	FY29
Cityworks Lifecycle Updates	-	$477,200*	$477,200	$477,200	$488,340*	$492,057*
Total	-	$432,960*	$477,200	$477,200	$488,340*	$492,057*

**Amount is included in Evoenergy's proposed Recurrent ITC capex forecast.*

The cost of a deferred platform upgrade at the start of EN29 has been included in the financial assessment for this option. The cost is equal to the cost of the upgrade in Option 2. No allowance has been made for the increase in upgrade complexity caused by allowing the system to become more out of date.

Risks

Table 22 Cityworks risks option 1

Risk	Description
Vendor support	Outdated platforms missing significant upgrades could contribute to reduction of vendor support effectiveness
Vulnerability	Increased cybersecurity vulnerability due to the lack of patches, fixes, and upgrades
Failure/Degradation	Increased risk of Cityworks running in a degraded state or failing, recovery of this would be costly as the vendor could charge additional fees for supporting out of date versions
Integration	As the Cityworks system becomes more dated, it will be out of alignment with related systems that are upgraded to modern equivalents. Annual minor upgrades will become more difficult as the gap between versions with other Evoenergy applications increases.

Evoenergy has estimated a 5% increase in the cost of planned upgrades of related systems to account for the additional complexities caused by not updating to a newer version.

Benefits

Table 23 Cityworks benefits option 1

Benefit	Description
Performance	Small performance increases due to optimisations during patching and applying customisations to the system.
Support	Support from vendor if systems fail or have issues, although the cost of this support may rise over time.
System Hardening	System hardening through security vulnerabilities being patched.

Option 2 - Full upgrade (preferred option)

Option 2 is to undertake a full upgrade of the Cityworks system early in the EN24 period. The system upgrade will shift Evoenergy's Cityworks installation to the latest major version of the Cityworks system and address issues identified by the vendor run software health check.

Figure 2: What's next – Cityworks roadmap 2022

Evoenergy expects the Cityworks system upgrade to include an overhaul of the current implementation, which will simplify the solution, remove customisations where possible and practical, and relocate non-core Works Management functions to specialised fit-for-purpose tools. The main benefits of these changes are a reduction in risk due to the complex nature of the current system and improved long-term cost effectiveness as the new platform will be simpler to update, manage and operate.

The reduction in complexity will also better enable Evoenergy to transition to a new Works Management solution in the EN29 period should this be required. Assuming continuation of current industry preferences, shifting to a SaaS solution is probably during the EN29 period.

Option 2 is the preferred option as it reduces risk in all identified areas. The upgrade allows Evoenergy to reduce complexity through upgrading the system, reverting work-around functionalities that have accrued over time, remove, disable, or relocate functionality best provided through other means, return the platform to address the core purpose it was designed for, and to ensure optimal positioning for future use. It further allows the system to continue to be updated and supported by the vendor and would ensure compatibility with other core Evoenergy ICT systems such as ArcFM GIS (Asset Management) and PowerPlan (Asset Planning). This option would also leverage existing productivity measures gained from the existing deployment and mitigate cyber risk by maintaining best industry practice and following Essential Eight Principles and recommendations from the Australian Signals Directorate.

Evoenergy considers this investment to meet the requirements to be categorised as *Non-Recurrent – Maintain* as the primary purpose of the platform upgrade is to ensure it remains in a fit-for-purpose state. Over time ITC systems tend to become complex as add-ons and customisations are applied to meet tactical business requirements, and it becomes necessary to refresh the platform and move specific capabilities to more appropriate systems. There are no new capabilities assumed to be gained through the platform upgrade, although it is likely that the updated platform will produce productivity benefits (simpler and easier to use) and introduce minor capability improvements (included in newer versions of the same software solution).

Costs

Option 2 has a total non-recurrent capital expenditure of $5,089,133 during the EN24 period. This option incurs no additional recurrent capital expenditure as the required expenditure for annual

lifecycle updates in FY26 and FY27 is included in Evoenergy's current budget forecast Recurrent Capital expenditure is forecast at $ 1,457,597 for the three years of Lifecycle updates in FY25, FY28 and FY29.

The Cityworks Platform Upgrade cost was estimated by Evoenergy SMEs based on the cost of comparable major ITC system upgrade projects.

Table 24 Cityworks costs option 2

Project Title	Project ID	FY25	FY26	FY27	FY28	FY29
Cityworks Lifecycle Updates	-	$477,200*			$488,340*	$492,057*
Cityworks Platform Upgrade	-		$2,534,273	$2,554,860	-	-
Total	-	$477,200*	$2,534,273	$2,554,860	$488,340*	$492,057*

**Amount is included in Evoenergy's proposed Recurrent ITC capex forecast.*

Risks

Table 25 Cityworks risks option 2

Risk	Description
Platform upgrade delays and overruns	This option includes a complex platform upgrade that may suffer from delays and cost overruns if not correctly managed.

This risk is not quantified in the financial analysis for this option as capital cost contingencies are expected to net out across the wider ITC and network capex programmes.

Benefits

Table 26 Cityworks benefits option 3

Benefit	Description
Performance	Performance increases due to the platform being simplified and easier to use/update.
Support	Support from vendor if systems fail or have issues.
System Hardening	System hardening through security vulnerabilities being patched.
Integration	A simplified platform will make it easier to ensure the integrity of the works management system, related systems and the communication between these systems when required updates are applied.

Summary

Evoenergy proposes to proceed with Option 2 – Full Upgrade.

This option will maintain the works management platform ensuring it is on a long-term supported platform and remains fit-for-purpose.

Options financial summary

The options considered were focused on maintaining existing capability rather than introducing new capability. As such, the financial assessment was based on forecast investment against each option, the risks associated with each option, and the qualitative benefits associated with the option.

While not quantified, the risk profile associated with Options 1 and 2 are anticipated to have an increasing Opex profile to enable continued secure support across the ArcFM GIS platform.

Table 27 Cityworks options capital expenditure

Option	EN24 Capital Expenditure $million
Option 1 - Defer upgrade	[2.42]
Option 2 – Full upgrade	[6.55]

3.4. Benefits

In maintaining system support and capability for Cityworks, Evoenergy's proposed investment will deliver the following benefits:

- Maintain interoperability between platforms
- Follow industry best practise as outlined by the Australian Cyber Security Centre and within the AESCSF (Security Profile 3)
- Performance increases due to the platform being simplified and easier to use/update.
- Ensure adequate support from the product vendor if Cityworks were to fail or have significant issues.
- Leveraging the support of vendors and their investment in system hardening (through security vulnerabilities being patched) rather bearing the full cost associated with identifying potential vulnerabilities within the product and then remediating the issues.
- A simplified platform achieved through the proposed full upgrade will enhance the integrity of the works management system and related systems, including the integrations between these systems. This will likely have flow-on effects to reporting and other supporting activities to drive continuous improvement across asset management practices.

3.5. Assumptions, dependencies and risks

Assumptions

Table 28 Cityworks assumptions

Assumption description	Impact if assumption proven invalid	How will the assumption be assessed?	Assumption owner
Cityworks product roadmap does not change significantly for the Evoenergy suite of products early in the EN24 period	Proposed investment profile may not align with the required timing or approach.	Continued engagement with product vendors and industry partners	

Dependencies

Table 29 Cityworks dependencies

Dependency description	Dependent upon
Architectural advice to ensure the targeted reductions in complexity are achieved through product upgrades.	North American based vendor partners being available to undertake work for Evoenergy in a timely.

Risks and controls

Table 30 Cityworks risks and controls

Risk description	Causes	Consequences	Preventative, Detective & Responsive Controls
Compromise of Platform	Cybersecurity Vendor Support Interoperability	Loss of service Loss of information Loss of efficiency	Following vendor roadmap for upgrades and updates. Vendor support for recovery of platform
Degradation of Platform	Cybersecurity Vendor Support Interoperability	Loss of efficiency	Vendor support for recovery of platform
Failure of Platform	Cybersecurity Vendor Support Interoperability	Loss of efficiency	Vendor support for recovery of platform
Compliance	Vendor Support Interoperability	Financial / Loss of license	Vendor support for recovery of platform to meet licence requirements (Asset management)

4. Billing and Market Systems Platform – Velocity

4.1 Executive Summary

Project overview

This investment brief is for Evoenergy's Billing and Market Systems platform for the EN24 period.

Billing and Market systems provide the capability for Evoenergy to invoice customers accurately and efficiently, which includes billing for use of system charges (UOS) and fee-based service charges, and management of invoice delivery, remittance, and dispute processing.

The Evoenergy Billing and Market systems support a broad suite of business-critical operational functions that are vital components in the cash flow process.

Currently, Evoenergy uses the Velocity platform for Billing and Market functions, and for limited functionality relating to Customer Resource Management (CRM) processes.

The Velocity platform is a suite of separate functional components with the GenPlus module at the core. The current version of GenPlus used by Evoenergy is [redacted]. The vendor, Gentrack, fully supports this version, its associated components and Evoenergy system customisations.

The vendor supports maintaining currency with the latest available product versions as a fundamental means to ensure the security, efficiency, and efficacy of the platform. An outdated Billing and Market system increases risk of failure, as an absence of vendor support impacts the efficiency of process and network monitoring, database and application operation and design, cybersecurity vulnerability by not having up to date patches and fixes, and it introduces a potential risk to interoperability with other systems that would limit Evoenergy's ability to meet licence requirements particularly in respect of customer billing.

The recommend Capex investment in EN24 is $8.5M.

Key recommendations

It is recommended to proceed with Option 3: Vendor Upgrade Alignment. This option will allow Evoenergy to upgrade the current Velocity systems to a modern platform. This will ensure that the Market and Billing Systems platform is optimal for Evoenergy's purposes, and it will ensure ongoing compatibility with other Evoenergy technology systems, services, and platforms.

4.2 Overview

Objective

The objective of this project is to ensure Evoenergy has a fit for purpose Billing and Market Systems Platform to maintain the efficiency, efficacy, and regulatory compliance of billing operations.

This investment brief covers non-recurrent capital investments for Evoenergy's Billing and Market Systems Platform (Velocity). This project involves a platform upgrade for Velocity that is categorised as non-recurrent as the platform upgrade cycle is longer than the 5-year regulatory cycle. This upgrade is defined as a Non-Recurrent - Lifecycle project that has the primary objective of maintaining Evoenergy's capabilities with only minor improvements in efficiency or customer outcomes.

Background

Evoenergy operates Velocity as its Market and Billing Systems platform and uses minor functionality available within the system for CRM purposes. Something for which Velocity is not designed and is being phased out by the vendor.

Evoenergy's original implementation of Velocity replaced approximately 15 legacy market operation systems that resulted in a consolidated and simplified Evoenergy's Market and Billing ecosystem. At the time of this consolidation and simplification, Evoenergy did not have a dedicated CRM platform, so Velocity was adapted with work arounds to provide this functionality. Due to the added non-standard functions that came with this program, there have been ongoing performance, maintenance, and update challenges.

In addition to major platform upgrades that occur less than once per five-year period, the current platform undergoes annual lifecycle and periodic regulatory updates. Lifecycle updates provide incremental benefits to Velocity but are primarily for the provision of bug fixes, consolidation of widely used customisations into the core product, and security issue resolutions. Regulatory updates involve modifying or updating Velocity to meet new or changed market compliance requirements. These upgrades are categorised as recurrent capital expenditure and are not included within the scope of this investment brief.

Table 31 Velocity planed recurrent minor upgrades

Planned Recurrent Minor Upgrades	Costs
Velocity Lifecycle & Regulatory Update FY25	$835,099
Velocity Lifecycle & Regulatory Update FY26	$843,900
Velocity Lifecycle & Regulatory Update FY27	$850,755

Evoenergy would not be able to conduct effective billing operations without the Market and Billing System platform. An outdated or unsupported version increases the likelihood of failure and the consequences of failure. An unsupported Velocity can impact Evoenergy's ability to maintain compliance with operating licence conditions and its ability to maintain alignment with industry best practice. In short, the benefits of investment in the Market and Billing System Platform include:

1. Regulatory Compliance.
2. Industry best practice alignment.
3. Reduced operational complexity.
4. Secure operating and data management practices and processes.

Customer importance

Evoenergy's Billing and Market Systems platform aims to ensure the efficiency, effectiveness and regulatory compliance of the system which is core to operations. In addition, it directly and positively impacts Evoenergy customers as it ensures that billing processes, which are critical to providing best practice Customer Service, remain fully functional, timely, and reliable.

An up-to-date, fully patched, vendor supported, functional Market and Billing Systems platform is core to ensuring ongoing maintenance of current service levels.

Strategic alignment

Evoenergy's strategic approach to Billing and Market Systems is to continue to simplify and consolidate billing-related operations to minimise whole-of-life capital and operating cost.

Evoenergy's approach to maintaining Velocity the Billing and Market system is based on continuing the successful management practices that are in place for the current period, whilst reducing complexity and the number of functions expected of the platform. This will ensure that current capabilities are maintained, the system operates as recommended by the vendor, so that Evoenergy will retain productivity benefits already derived from the Billing and Market Systems platform.

The continued use of Velocity as Evoenergy's Market and Billing Systems platform is necessary for Evoenergy to meet productivity targets and service levels contained in the submission for the next regulatory period. This includes achieving planned levels of Capex and Opex, sustained service levels with current headcount and meeting necessary annual Opex productivity improvements.

Investment in Velocity is also required to ensure it aligns with changes being made to other Evoenergy technology systems, services, processes, and network assets.

4.3 Options analysis

Options overview

Evoenergy has considered three options for maintaining the Billing and Market Systems platform.

1. Current state or defer upgrade.
2. New Billing and Market system.
3. Full upgrade.

Option 3, the preferred option, is the only option that maintains efficiency with potential for a slight uplift, without requiring business transformation and going to market for another platform. Option 1 minimises capital expenditure and aims at keeping the system as it currently is with minimal updates and upgrades, which would see the efficiency of the system decrease and lead to undesirable cost growth to maintain current performance. Option 2 would require a new system including internal training, process change and operational and technological transformation to migrate the business to an entirely new system.

Option 1 – Current state or defer upgrade

Option 1 maintains the basic level of operation for Velocity through only implementing the annual lifecycle and regulatory updates. Lifecycle updates involve fixes, patches and adaptations to the platform that improve performance and functionality. The updates also include fixing security vulnerabilities. Option 1 relies on the recurrent expenditure component to keep the platform alive but foregoes a major platform upgrade.

Option 1 would incur additional recurrent cost in FY28 and FY29, which would otherwise be deferred or integrated into the Full Upgrade when compared to the budgeted recurrent ICT capital expenditure forecast. This cost is contained within Options 2 and 3 as a Platform upgrade, or a replacement system would achieve a similar result.

Costs

Table 32 Velocity costs option 1

This table shows the recurrent investment required for option 1. There is additional Capex expenditure when compared to the recurrent proposal in FY28 & FY29

	Project Title	Project ID	FY25	FY26	FY27	FY28	FY29
Investments	Velocity Lifecycle & Regulatory Update	-	$835,099*	$843,900*	$850,755*	$850,755	$850,755
	Total	-	**$835,099***	**$843,900***	**$850,755***	**$850,755**	**$850,755**

**Amount is included in Evoenergy's proposed Recurrent ICT capex forecast.*

Risks

Table 33 Velocity risks option 1

Risk	Description
Vendor support	Outdated platforms missing significant upgrades could contribute to reduction of vendor support effectiveness
Vulnerability	Increased cybersecurity vulnerability due to the lack of patches, fixes, and upgrades
Failure/Degradation	Increased risk of Velocity running in a degraded state or failing, recovery of this would be costly as the vendor could charge additional fees for supporting out of date versions
Integration	As the Velocity platform becomes more dated, it will be out of alignment with related systems that are upgraded to modern equivalents. Annual minor upgrades will become more difficult as the gap between versions with other Evoenergy applications increases.

Benefits

Table 34 Velocity benefits option 1

Benefit	Description
Performance	Small performance increases due to optimisations during patching
Support	Support from vendor if systems fail or have issues
System Hardening	System hardening through security vulnerabilities being patched

Option 2 – New Billing and Market System

Option 2 addresses the purchase and implementation of an entirely new Billing and Market System platform. This would incur significant cost and require a digital transformation to address changes to the linkages with other applications in the Evoenergy ICT environment. A new system, once correctly implemented, would provide the opportunity to reduce cybersecurity risk, improve simplicity whilst retaining functionality and would ensure that vendor support is maintained. The biggest risks associated with this option other than the large cost, would be implementation time, business process and operational change, and potential productivity impairment through the process of trying to implement other ICT programmes or projects

Costs

The cost of this option was not assessed to a detailed level given that high level desktop reviews of potential investment requirements identified that the costs to achieve a 'maintain capability' investment would significantly exceed the costs associated with a platform upgrade of Velocity. Further, the benefits expected to flow from a significant investment in a new system, when considered with the risks associated with delivering a new system during the EN24 period, were considered to be insufficient to warrant the investment at this point in time.

Prior to undertaking a Velocity upgrade option, Evoenergy will investigate the cost of this option in further detail, including sourcing vendor quotes and would only progress with the transition if the benefits provided by the alternate vendor, which will only be known once a vendor is identified, and a detailed benefit assessment of their product undertaken) outweigh the final upgrade costs.

Risks

Table 35 Velocity risks option 2

Risk	Description
Resource availability	Internal ICT resources required for this may be constrained if BAU critical support issues arise.
Additional Out-of-hours effort requirement	Project activities may require work after normal work hours to not impact market and billing systems. This would require additional management resources to ensure that working staff are not impacted.
Specialist Services Requirement	Encountered errors that cannot be resolved internally and require external services.
Vendor support during implementation	Support provided by vendor is not timely or accurate.
Benefits are not realised	Any forecast of benefits from a new system depend on assumptions and the expected benefits may not materialise.

Benefits

Table 36 Velocity benefits option 2

Benefit	Description
Improved Performance	Being the most current version, a new system would include all the latest optimisation enhancements for that platform
Improved Reliability	Reliability of a new system would be high as it would be operating as intended and without "bolt-on" work arounds
Improved Security	A new system would be the most current version of the system which would offer the best security protocols in the market
Full Vendor Support	Full vendor support during implementation and operation
Improved Efficiency	A modern fit for purpose Billing and Markets system would bring improved efficiency benefits

Option 3 – Vendor Upgrade Alignment (preferred option)

Option 3 is to follow a path that aligns with the vendor's approach to the ongoing development and update of Velocity. This upgrade path will maintain Evoenergy's alignment with the latest major versions of Velocity and update the platform to ensure its consistency with other systems, services, and applications in the Evoenergy ICT ecosystem.

This upgrade program has been recommended by the vendor, which will see the update of the underlying framework and architecture of the system and progression of key features of the platform. This will ensure that the Market and Billing Systems platform is optimal for Evoenergy's purposes and maintains compatibility with other Evoenergy platforms.

Option 3 is the preferred option as it reduces risk in all identified areas. The upgrade allows Evoenergy to reduce complexity through upgrading the platform, reverting work-around functionalities that have accrued over time, remove, or disable functionality best provided through other means, return the platform to address the core purpose it was designed for, and ensure optimal positioning for future use. This option would also leverage existing productivity measures gained from the existing deployment and mitigate cybersecurity risk by maintaining best industry practice and following Essential Eight Principles and recommendations from the Australian Signals Directorate.

Evoenergy categorises this investment as Non-Recurrent – Lifecycle as it involves updating a system or application that has a frequency of less than once every five years.

The total non-recurrent ICT capital expenditure for this option during the EN24 regulatory period is $5,925,165.

Option 3 also requires recurrent capital expenditures totalling $2,529,754 for FY25 ($835,099), FY26 ($843,900) and FY27 (850,755).

Note 1: During the upgrade program, Evoenergy will not seek to follow its previous program of annual minor Velocity updates. Any necessary updates, for example to accommodate regulatory changes, will be integrated into the overall upgrade project. This would have the effect of reducing recurrent ICT capital expenditure on this system. As this is the preferred option for this project, Evoenergy's recurrent ICT forecast has been calculated with these minor updates excluded (these would need to be added back in if Option 1 is selected instead).

Note 2: prior to commencing the upgrade program, Evoenergy will investigate if retaining Velocity is still the preferred option by considering new products and vendor information that may become available over the next five years. If alternate products provide sufficient benefits, Evoenergy will consider changing vendors to increase net benefits to the business and customers.

Costs

Table 37 Velocity costs option 3

This table shows the recurrent investment required for option 3

Investments

Project Title	Project ID	FY25	FY26	FY27	FY28	FY29
Velocity Lifecycle & Regulatory Update	-	$835,099*	$843,900*	$850,755*		
Platform Upgrade	-	-	-	-	$2,951,350	$2,973,815
Total	-	**$835,099***	**$843,900***	**$850,755***	**$2,951,350**	**$2,973,815**

Risks

Table 38 Velocity risks option 3

Risk	Description
Resource availability	Internal ICT resources required for this may be constrained if BAU critical support issues arise.
Additional Out-of-hours effort requirement	Project activities may require work after normal work hours to not impact market and billing systems. This would require additional management resources to ensure that working staff are not impacted.
Vendor support during implementation	Support provided by vendor is not timely or accurate.

Additional information on risks if the platform is not upgraded are highlighted in the "Risk and Control" section.

Benefits

Table 39 Velocity benefits option 3

Benefit	Description
Improved Performance	An up-to-date velocity platform would bring performance improvements.
Improved Reliability	Reliability of Velocity would be increase as it would be operating as on its newest platform version.
Improved Security	Platform Upgrades would uplift Velocity to the most current version of the system which would offer the best security protocols.
Full Vendor Support	Full vendor support during implementation and operation.
Improved Efficiency	An upgraded Billing and Markets system would bring improved efficiency benefits.

Summary

Options financial summary

The financial assessment identified deferring the upgrade as the least cost option however this would not likely achieve the maintenance outcomes required to ensure a secure, stable system, that performs adequately in relation to customer service expectations.

In contrast, a desktop review of the investment required to deliver a new billing system with new capability, found that the benefits that could come from the investment were unlikely to support a requirement for a new system to replace Velocity. Instead, a focus on leveraging the investment to date, through maintaining existing capability while, over time and through upgrades, reducing the complexity of the system and associated integrations, would deliver a prudent outcome – balancing cost, risk, and performance.

Table 40 Velocity options capital expenditure

Option	EN24 Capital Expenditure $million
Option 1 – Current state or defer upgrade	4.23*
Option 2 – New Billing and Market System	5.00-15.00
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*Incremental recurrent ICT capital expenditure compared to Evoenergy's initial submission proposed forecast

4.4 Benefits

In maintaining the Velocity market and billing system through a managed upgrade program across the EN24 period, Evoenergy will simplify the technology landscape and continue the de-coupling of CRM activities from the market and billing solution. This is expected to drive stability, performance and supportability improvements across the solution. These qualitative benefits associated with maintaining capability are anticipated to align with any activities required to achieve cyber security objectives.

In addition to the benefits associated with simplification of the Velocity system, and ensuring the system is secure and stable, Evoenergy will avoid significant expenditure, delivery risk, and adoption risk, associated with transitioning to a new solution. At present, Evoenergy has a heightened focus on navigating the operational and strategic challenges presented by the following:

- Net Zero by 2045
- Transition to Distributed System Operator role
- Cyber Security threats
- Climate Change

While the primary driver for the investment is maintain current capability and support, it is likely that across the EN24 investment period, the proposed investment would bring some level of improved efficiency benefits associated with upgrades of Velocity.

4.5 Assumptions, dependencies and risks

Assumptions

Table 41 Velocity assumptions

Assumption description	Impact if assumption proven invalid	How will the assumption be assessed?
Gentrack does not accelerate their transition to a new cloud-based product in the EN24 period.	Proposed investment profile may not align with the required timing, approach, or Capex accounting treatment.	Continued engagement with product vendor

Dependencies

Table 42 Velocity dependencies

Dependency description	Dependent upon
Investment in the planned Customer Relationship Management (CRM) platform progressed in EN19	Project definition and initiation processes demonstrating a CRM is a prudent solution for Evoenergy and the planning approach indicates that the implementation will be efficient.

Risks and controls

Table 43 Velocity risks and controls

Risk description	Causes	Consequences	Preventative, Detective & Responsive Controls
Compromise of Platform	Cybersecurity Vendor Support	Loss of service Loss of information Loss of efficiency	Following vendor roadmap for upgrades and updates. Vendor support for recovery of platform
Degradation of Platform	Cybersecurity Vendor Support	Loss of efficiency	Vendor support for recovery of platform
Failure of Platform	Cybersecurity Vendor Support Interoperability	Loss of efficiency	Vendor support for recovery of platform
Compliance	Vendor Support	Financial / Loss of license	Vendor support for recovery of platform to meet licence requirements

5. Non-recurrent new – Digital Twin investment brief

5.1. Executive Summary

Project overview

A Digital Twin system is a software simulation tool that makes use of real-world data to produce a digital representation of physical assets, processes relating to those assets and asset management related functions.

Digital Twin solutions can provide an editable means to represent an electrical distribution network in an accurate three-dimensional model, which can then be maintained, changed, assessed, and used to represent real-world management processes and changes. The Digital Twin provides a mechanism for scenario development and processing to provide actionable insights that can be trialled at zero-risk to a physical electrical network.

Evoenergy does not have a Digital Twin solution, with the nearest capability being the combined functionality available across the Advanced Distribution Management System (ADMS) and Geospatial Information Systems Platform (ArcFM GIS system), which contain geospatially represented asset data and related management services but do not have three-dimensional virtualisation and simulation or asset modelling capabilities.

Evoenergy has the data necessary to populate a Digital Twin already collected and used for other business purposes.

This investment brief supports the acquisition of a Digital Twin solution to determine if it can provide an accurate digital representation of the assets involved in managing the distribution of electrical power through and across the Evoenergy network. The proposed project is based on identification, acquisition, deployment, and configuration of a toolkit to identify where it can be used to deliver benefits to Evoenergy through more efficient investment planning, asset management and scenario processing of future network maintenance, replacement, upgrade, and augmentation programs.

The proposed investment is intended to establish a prototype for the use of a virtual representation in asset management planning, with a focus on leveraging existing data sources to establish the new capability. The prototype will use the Evoenergy LiDAR dataset (collected for bushfire management, vegetation management, and planning purposes) along with other information from Evoenergy's operational databases, including data from the ArcFM GIS platform, to build a virtual representation of the distribution network.

Depending on the quality of data and the levels of integration within an ICT environment, the initial investment to establish a Digital Twin can be significant. The approach proposed by Evoenergy will see initial benefits realised through continued use of existing core technology platforms thereby avoiding costs that would otherwise be incurred through notable change in systems and architecture to enable a data driven Digital Twin (for example through implementation of an integrated ERP system).

Beyond the benefits reflected in the EN24 non-network investment program being realised through avoidance (or deferral) of non-recurrent expenditure, it is anticipated that the prototype will enable Evoenergy to support asset management improvements, increase workforce efficiencies, and develop new or improved safety initiatives that are often associated with Digital Twins systems.

The recommend Capex investment in EN24 is $0.8M.

Key recommendations

It is recommended that Evoenergy proceed with a project to implement a Digital Twin solution and produce a digital representation of the Evoenergy electrical network to assess if this capability can provide benefits and improvements for dispatching, troubleshooting, engineering, planning, and reporting on assets.

5.2. Overview

Objective

The objective of this project is to ensure Evoenergy invests in fit-for-purpose tools that augment existing capabilities and provide new functionality that can be used to improve network productivity and asset management performance.

This investment brief covers a *Non-Recurrent New ICT Capability* investment in new IT systems. The project proposes development of a Digital Twin of Evoenergy's electricity distribution network, which involves an initial phase to investigate options for a Digital Twin, including reviewing vendor options and developing a comprehensive investment brief with detailed analysis of the potential benefits of a Digital Twin. If the outcomes of the initial phase support development of a Digital Twin, then the project will progress to acquire new software, establish the Digital Twin, and integrate it into Evoenergy's asset management and planning processes.

Background

A Digital Twin is a virtual representation of a physical object or system. It is created using data collected from sensors and other sources and is typically used to simulate the behaviour and performance of the physical object or system. This can be useful for a variety of purposes, including analysing and optimising the performance of a physical system, predicting potential failures, testing changes, or simulating modifications before implementing them in the real world.

Evoenergy currently has a large LiDAR dataset that is collected for bushfire management, vegetation management, and planning purposes. A Digital Twin would bring together this LiDAR data and other information from Evoenergy's operational databases, including data from the ArcFM GIS platform, to build a virtual representation of the electricity network. Using this data in a Digital Twin solution supports Evoenergy's efforts to derive additional value from existing data collection and processing investments.

Customer importance

Evoenergy aims to provide elevated levels of reliability and confidence in asset management practice, and efficient and safe electricity service delivery to customers whilst minimising costs to customers.

An appropriately established, configured, supported, and operated Digital Twin capability would enable Evoenergy to better plan investments, improve prioritisation of change activities, and efficiently allocate resources through improved modelling of its network. This would allow Evoenergy to improve the efficiency of asset management practice, network field operations and electrical network investment planning, which would combine to have long-term benefits to the cost of operating Evoenergy's network.

Strategic alignment

Evoenergy's strategic approach to asset management is to consider investment in modern technologies and capabilities where such investments produce net benefits to customers.

A Digital Twin is expected to improve the productivity and efficiency of asset management, investment planning, and to improve the efficiency of network field operations. The outcome of which would allow Evoenergy to build, maintain, and operate a growing network at the least cost.

5.3. Options analysis

Options overview

Two options have been considered in this investment brief:

- implementation of a prototype Digital Twin during the EN24 period leveraging existing data and integrations; and
- implementation of full-scale Digital Twin solution utilising a platform similar to those developed by Australian government organisations utilising the TerriaJS open source platform.

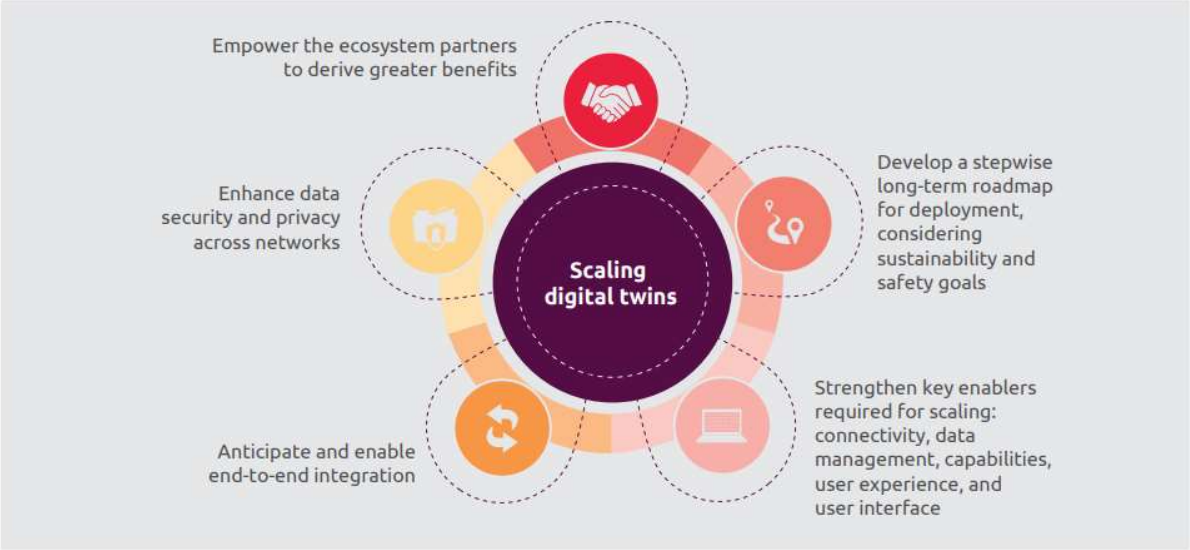
Option 1 – Implement prototype Digital Twin

Option 1 is to implement a Digital Twin during the EN24 period.

This involves the development of a prototype Digital Twin to be integrated into Evoenergy's asset management and planning processes.

The approach will include the identification of a vendor with a solution offering that is scaleable, enabling the development of a solution that leverages existing Evoenergy data and integrations, and supports a long-term, measured approach, to the adoption of digital twins into decision making processes. This approach aligns with the Capgemini recommended approach (see **Error! Reference source not found.**) to accelerate transformation through digital twins – by developing a long-term roadmap.

Figure 3: Capgemini recommendation to accelerate digital twin development



Implementation is scheduled for FY25 with ongoing monitoring, evaluation and reporting on the performance, benefits, and ongoing cost of the Digital Twin to continue over the remainder of the EN24 period. Only the initial set-up cost is covered by this investment brief.

The cost to Evoenergy for this option is low (for the rollout of a new IT system) due to Evoenergy already having a large dataset comprising geospatial, network asset, and Lidar data, which would be further used and integrated into the Digital Twin platform. A preliminary search of vendors has indicated there are offerings that can accept Evoenergy's data with minimal modification.

This option assumes minimal modification of the Evoenergy data sources is required to set-up a viable Digital Twin, with the focus of the investment being on prototyping, testing, and determining the value that can be derived from the Digital Twin.

There would be ongoing recurrent investment should the prototype find that the benefits of the Digital Twin are sufficient to justify retaining and extending this new capability.

Costs

Option 1 has a total non-recurrent capital expenditure of $572,640 during the EN24 period.

Recurrent capital expenditure totalling $223,674 in FY27 and FY29 is also identified to maintain alignment with vendor support and version recommendations and to ensure appropriate technical currency of the electrical network model with that of the real-world network.

Table 44 Digital Twin costs option 1

Project Title	FY25	FY26	FY27	FY28	FY29
Platform Acquisition and Deployment	$572,640	-	-	-	-
Platform Lifecycle updates	-	-	$111,161	-	$112,513
Total	$572,640	-	$116,161	-	$112,513

Risks

Table 45 Digital Twin risks option 1

Risk	Description
Resource availability	Internal IT resources required for this may be constrained if BAU critical support issues arise.
Additional Out-of-hours effort requirement	Project activities may require work after normal work hours to not impact market and billing systems. This would require additional management resources to ensure that working staff are not impacted.
Vendor support during implementation	Support provided by vendor is not timely or accurate.

These risks are not quantified in the financial analysis for this option as capital cost contingencies are expected to net out across the wider IT and network capex programmes.

Benefits

Table 46 Digital Twin benefits option 1

Benefit	Description
Field Resource	Through effective 3D virtualised simulation there would be lower requirement for field resourcing to physically inspect network assets for planning particularly around vegetation and natural disaster management, allowing for resourcing to be focused elsewhere. Evoenergy staff will be able to pre-plan works to a higher degree of accuracy prior to arriving at site, reducing on-site time, and freeing up field resources to work on other tasks.
Asset Modelling & Forecasting	Increased capability in asset modelling and forecasting for growth and planning around network augmentation.
Natural Disaster Simulation	Better response to natural hazards/disasters with improved simulation of network conditions.
Reduced outage duration	Information provided to field resources from the digital twin will enable faster identification of faults and getting the necessary equipment to site faster to repair assets/restore electricity supply.

The progression of the prototype will provide Evoenergy with improved data to enable the quantification of further options as to the most prudent and efficient approach to building-out the prototype digital twin. At present, the benefits of Option 1 are driven by the avoidance of potential costs associated with undertaking a full-scale investment ahead of determining the potential to leverage prior investment across the Evoenergy IT environment – particularly in relation to data stores and integration.

Option 2 – Implement full-scale Digital Twin

Option two did not progress to an NPV calculation given the extent of assumptions that would be required in relation to the benefits that could be realised.

There are a large number of case studies published by industry participants relating to the potential benefits from utilising digital twins in planning and decision making practices. While Evoenergy is confident that incorporating digital twin technology and the related capabilities into asset management practices will support future efficiencies, there is a high cost and deliverability risk through implementation of a large-scale solution. The use of observed industry benefits without the development of a prototype and road-map for the modular expansion of the prototype, would add to the risk profile associated with implementation of a full-scale Digital Twin.

Given the risk profile, uncertainty relating to quantifiable benefits, and the potential significant implementation cost (based on the reported effort and costs published in relation to Australian

government entities that have implemented digital twin platforms in recent years[2]), Evoenergy determined that Option 2 was not recommended prior to progressing to an NPV assessment.

Summary

Evoenergy intends to proceed with Option 1 – Implement a Digital Twin prototype.

As no benefits have been quantified, this project has a negative NPV. However, Evoenergy has qualitatively assessed that potential benefits are likely to outweigh the modest cost of trialling this technology.

Options financial summary

The investment required to implement a prototype digital twin is anticipated to be significantly lower than the outlay required to achieve a full-scale digital twin based on a review of the information referenced above for several government sponsored digital twins.

With the reported benefits that can be realised through the use of digital twin technology, Evoenergy believes the investment in a prototype will provide an implementation approach that balances the risks of undertaking large and/or complex technology projects with the reported benefits. Option one is considered to present the most prudent approach to implementation of a digital twin and is the preferred approach for that reason.

Table 47 Digital Twin capital expenditure

Option	EN24 Capital Expenditure $million
Option 1 – Implement prototype Digital Twin	0.796
Option 2 – Implement full-scale Digital Twin	NA

5.4. Benefits

The initial benefits are expected to be realised through cost avoidance and deferral associated with establishing digital twin capabilities. The continued leveraging of existing technology platforms, will provide Evoenergy with a pathway to incremental investment for the adoption of digital twins in asset planning and works planning processes.

Beyond the benefits reflected in the EN24 non-network investment profile realised through an avoidance (or deferral) of non-recurrent expenditure, it is anticipated that the prototype will enable Evoenergy to support asset management improvements, workforce efficiencies, and safety initiatives often associated with digital twins and data analytics. While these benefits are expected to be identified and realised through later expansions of the digital twin prototype, the progression of these expansions will be dependent on realisation of sufficient benefits through use of the prototype.

[2] NSW Department of Finance, Services ($40m) and Innovation digital twin initiative and Victorian Department of Environment, Land, Water and Planning ($35m)

5.5. Assumptions, dependencies and risks

Assumptions

Table 48 Digital Twin assumptions

Assumption description	Impact if assumption proven invalid	How will the assumption be assessed?
The shared ActewAGL Joint Venture Azure Gateway integration ecosystem will be available to Evoenergy	Increased complexity in the Evoenergy IT environment through additional point to point integrations.	Assessment of readiness to be undertaken as part of the development of the business case for the prototype Digital Twin.

Dependencies

Table 49 Digital Twin dependencies

Dependency description	Dependent upon
GIS integration	GIS Platform - Digital Twin requires the GIS platform for geospatial Data
Access to Lidar data	LIDAR - Digital Twin requires LIDAR data for 3d scenario-based simulation

6. IT non-recurrent (other) investment brief

6.1. Executive summary

Project overview

This investment brief is for ICT – Non-recurrent (Other) investments for the EN24 regulatory submission. This category of investments is made up of projects that are non-recurrent but individually have a forecast capital cost of less than $1M.

The projects included in this investment brief have been categorised as Non-Recurrent – Maintain as they cover investments in ICT system upgrades with recurrence periods less frequent than once every 5 years. The aim of the projects is to maintain existing services, functionalities, capability, and market benefits. The projects included within this investment brief do not bring new or expanded ICT capability, functions or services and are not being proposed to comply with new or altered regulatory requirements or obligations. They are instead proposed to maintain Evoenergy's current levels of productivity and functionality whilst holding the potential for minor uplifts.

The non-recurrent investments included in this investment brief are:

- Drawing Management System (DMS).
- Asset Management System – PowerPlan.
- Project Management Tool.
- Website Suite.

The recommend Capex investment in EN24 is $2.0M.

Key recommendations

It is recommended to proceed with the preferred options listed for each individual investment. These options are to support optimal operation of Evoenergy's suite of ICT platforms and processes and to maintain capability with the potential for minor improvement in efficiency or customer outcomes.

6.2. Overview

Objective

The objective of this investment brief is to ensure Evoenergy has a fit for purpose ICT ecosystem to support the efficiency and efficacy of electricity distribution network services.

The proposed investments included in this investment brief aim to maintain the current service and operational benefits gained from these programmes through maintaining currency with updated platform versions, hardware, licensing, support, and software.

Background

Evoenergy operates a suite of ICT platforms, systems, and devices that together contribute to Evoenergy's current performance levels whilst maintaining a steady level of operational costs. As with most ICT capabilities, these programmes enhance the productivity and efficiency of the wider business and if not properly maintained, upgraded, or replaced in a timely manner can reduce the benefit they are designed to bring.

Existing ICT Platforms, systems, and devices have been added to Evoenergy's technology infrastructure in previous regulatory periods, improving efficiency and productivity through various means, whilst keeping up with technology present in not just the electricity industry but across all

industries. Overall business functions have become reliant on these ICT programmes and adopted them as a normal way of conducting business.

Evoenergy has identified four ICT systems that require periodic upgrades that have been categorised as non-Recurrent. These are:

- Drawing Management System (DMS).
- Asset Management System – PowerPlan.
- Project Management Tool.
- Website Suite.

In addition to the non-Recurrent investment included in this investment brief, these systems will have recurrent ICT capital expenditure applied to them across the EN24 period for minor upgrades, such as annual patching. The recurrent ICT Capex included in Evoenergy's budget forecast for these systems is presented in the table below.

Table 50 ICT planned recurrent upgrades capex

Planned Recurrent Upgrades	Cost				
	FY25	FY26	FY27	FY28	FY29
DMS Lifecycle upgrades	$92,748	-	$94,487	$94,914	$95,626
PowerPlan Lifecycle updates	$163,303	$165,076	-	$167,691	$168,460
Project Management Tool updates	-	$82,538	$83,224	$83,596	$84,230
Website Suite updates	$163,237	-	$166,298	$167,048	$168,320
Total	**$419,288**	**$258,307**	**$512,278**	**$524,077**	**$516,636**

Recurrent investments occur annually for these systems except in years when non-recurrent investments are scheduled.

Customer importance

Evoenergy's ICT – Non-Recurrent (Other) investments aim to provide the delivery of secure, safe, reliable, and affordable services to Evoenergy customers. Up-to-date ICT platforms, systems and devices enable Evoenergy to provide the high-quality service that is expected by electricity customers. These investments impact all facets of Evoenergy's business and are therefore critical to the supply of electricity distribution services to customers.

To maintain current service levels, Evoenergy requires its ICT suite to be updated or upgraded to best practice levels to ensure information held and processed through and by these systems is accurate, timely, and secure.

Strategic alignment

Evoenergy's strategic approach to managing ICT - Recurrent systems is to reduce complexity through consolidation of platforms, systems, and devices at the lowest capital cost whilst maintaining current levels of operational efficiency with the potential for minor improvements.

This approach is focused on continuing ICT – Recurrent investments in support of successful management practices in place during the current period. This will ensure that capabilities are maintained so that Evoenergy will retain existing productivity savings derived from them.

The systems covered in this investment brief are not candidates for consolidation so will continue to be maintained in their current configurations.

The continued widespread use of the ICT platforms, systems and hardware is necessary for Evoenergy to meet the productivity targets and service levels contained in the submission for the next regulatory period (EN24). This includes maintained capital and operational expenditure during the regulatory period and sustained productivity and service levels.

Overview of individual projects

Drawing Management System

The Evoenergy Drawing Management System (DMS) is the source of truth for all Evoenergy network drawings, their approvals, revision history and field mark-ups. The DMS also provides the DMS as a toolkit for editing and viewing 2D and 3D drawings and primary images.

The DMS repository and associated toolkit has enabled Evoenergy to reduce cost when designing and redesigning electrical network systems by leveraging work done in the past. If this system were to fail or to fall behind market and industry standard practices, Evoenergy would have to start from basic capabilities, which would drastically increase opex expenditures to meet drawing requirements.

The DMS requires a platform upgrade to ensure it is meeting the latest industry and product standards, to fix any material platform issues and to improve platform optimisation. This upgrade is also to ensure ongoing product compatibility with the core software tool within the DMS, AutoCAD. The AutoCAD vendor has an historical track-record of restructuring their product on a four yearly cycle. The most recent example occurring in FY22. The non-recurrent capital cost of the Drawing Management system platform upgrade is $450,884; forecast for FY26.

It is also recommended in the recurrent ICT capital forecast to proceed with lifecycle updates to remain aligned with vendor support and maintenance programs across FY25, FY27, FY28 and FY29 with the platform upgrade planned to coincide with an anticipated product architectural rework from the vendor in FY26.

Asset Planning System

Evoenergy's Asset Planning System, PowerPlan, provides the capability for Evoenergy to perform enhanced investment modelling and forecasting for asset maintenance, replacement, and augmentation.

The PowerPlan platform is integral to Evoenergy's asset management approach and ensuring the system is maintained is vital to the maintenance of asset performance and productivity levels.

Evoenergy installed PowerPlan prior to the current EN19 period and completed the last major upgrade, from [redacted] in FY19, prior to the start of the EN19 period.

Evoenergy's most recent major upgrade of PowerPlan involved the addition of an Asset Investment Planning (AIP) module in FY20, which was a non-recurrent ICT Capex project. Other minor additions and annual updates have been applied since FY20 as recurrent ICT Capex.

Evoenergy expects a major upgrade of the PowerPlan system to become available during EN24 that will be comparable in scope to the addition of the AIP module, which had a capital cost of $611,667. The upgrade has an estimated cost of $710,229 and will ensure the platform remains fit for purpose throughout EN24.

As no comparable recurrent upgrade was applied during the EN19 period this project has been categorised as Non-Recurrent – Maintain. The primary driver of the project is to maintain the platform, although additional capabilities and features are expected to be made available in the newest version. These benefits will contribute to indirect productivity improvements through more efficient Capex and Opex allocation through improved and more accurate asset lifecycle modelling.

PowerPlan is closely tied to the Cityworks and ArcFM GIS platforms from which PowerPlan receives and transmits data. All these systems need to be maintained on comparable versions as changes to the upgrade schedule of each may have implications for the others.

The program of ongoing lifecycle updates combined with a platform upgrade is recommended to ensure compatibility with other interconnected systems and platforms and to maintain currency with the vendor's product roadmap, support model and ongoing security maintenance programs.

Project Management Tool

Evoenergy does not have a dedicated Project Management tool. Workarounds in other systems, including Works Management and spreadsheets are used to manage Evoenergy projects and whilst this has worked during the EN19 period, as an ICT solution it is suboptimal and introduces risk to the planning process.

Evoenergy will conduct a market scan of Project Management tools and select a fit-for-purpose option. There are a range of commercial-off-the-shelf options for this type of software. The Project Management tool project will include sourcing software licence, installing and configuring the solution onto Evoenergy's ICT systems and setting up processes, procedures, and practices to ensure the tool is used effectively and consistently across the organisation.

Evoenergy will commence the Project Management tool project in FY24, during the EN19 period and extend platform development into the EN24 period with $296,795 of non-recurrent capital expenditure forecast during FY25 and a further non-recurrent spend of $215,670 in FY27.

The program of lifecycle updates combined with platform upgrades is recommended to maintain currency with the vendor roadmap, architectural model and security and support programs so that productivity and quality improvements secured from the deployment of a Project Management toolkit can be sustained and potentially improved.

Website Suite

Evoenergy's Website is a key vehicle for communicating with customers, to provide information to the broad electricity marketplace, and to support functions and capabilities that are required for the efficient interaction between Evoenergy, supply partners and the customer base. A well-functioning Website takes pressure off call centres, face-to-face interactions and improves the overall customer experience.

Website technology is constantly evolving, and platforms and code bases must be maintained to ensure the Website remains secure, fit-for-purpose and easy to modify and maintain. Evoenergy allocates recurrent expenditure for minor updates and security patching of the Website, but more significant platform upgrades become necessary over time.

Evoenergy has allocated $317,543 of non-recurrent capital expenditure in FY26 to modernise the suite of tools and capabilities that make up the Evoenergy Website. This is intended to ensure modern technology protocols are used, improvements are made to security and to bring to the platform capabilities that enhance the customer experience. An example of this is the migration of the Website from JSON to XML languages and graphical and other optimisation focused configuration changes.

Given the Website facilitates customer and broad stakeholder access to services provided by core Evoenergy systems and platforms, it is critical that the security currency of the platform is maintained. It is recommended that the Website is maintained to the vendor's most current support versions, which includes lifecycle updates and core platform upgrades, to ensure highest available levels of compatibility, efficient and effective interconnectivity with other core and ono-core systems, and security in the services it can provide to Evoenergy's full stakeholder base.

6.3. Options analysis

Options overview

Evoenergy has considered two options for Non-recurrent (Other) projects.

1. Current state or defer upgrade.
2. Maintenance projects.

Option 1 defers all non-recurrent investments to the EN29 period and incurs additional recurrent capital expenditure that would otherwise have been deferred to allow for the non-recurrent projects to be rolled out. Option 2 includes all the non-recurrent projects described in the previous section.

Option 2 is the preferred option as it is the only option that maintains efficiency with a slight uplift potential across all individual proposed investments. Option 1 fails to maintain the systems to an appropriate level.

Option 1 – Current state or defer upgrade

Option 1 maintains the basic level of operation for ICT systems included in this investment brief, implementing annual lifecycle and regulatory updates. Lifecycle updates involve fixes, patches and adaptations to the platform that improve performance and functionality, these also include fixing security vulnerabilities. Option 1 relies on the recurrent expenditure component to keep the systems functional but foregoes more significant updates and upgrades.

Costs

Option 1 would incur additional recurrent cost across the period, which would otherwise be deferred and/or integrated into the non-recurrent projects for the relevant systems when compared to the budgeted recurrent ICT capital expenditure forecast. The additional recurrent ICT Capex over the period for this option is $503,599.

Option 1 would incur additional recurrent cost across the period, which would otherwise be deferred and/or integrated into the non-recurrent projects for the relevant systems when compared to the budgeted recurrent ICT capital expenditure forecast. The additional recurrent ICT Capex over the

period for this option is $503,599.

Table 51 ICT costs option 1

Project Title	FY25	FY26	FY27	FY28	FY29
DMS Lifecycle updates	$92,748	$92,748	$94,487	$94,914	$95,626
PowerPlan Lifecycle updates	$163,303	$165,076	$165,076	$167,691	$168,460
Project Management Tool updates	$82,538	$82,538	$83,224	$83,596	$84,230
Website Suite updates	$163,237	$163,237	$166,298	$167,048	$168,320

Risks

Table 52 ICT risks option 1

Risk	Description
Vendor support	Outdated platforms missing significant upgrades could contribute to reduction of vendor support effectiveness.
Vulnerability	Increased cybersecurity vulnerability due to the lack of patches, fixes, and upgrades.
Failure/Degradation	Increased risk of systems and infrastructure running in a degraded state or failing, recovery of this would be costly as the vendor could charge additional fees for supporting out of date versions.
Integration	These ICT systems will be out of alignment with related systems that are upgraded to modern equivalents. Annual minor upgrades will become more difficult as gaps between versions with other Evoenergy applications increases.

Benefits

Table 53 ICT benefits option 1

Benefit	Description
Performance	Very Small performance increases due to optimisations during patching
Support	Support minor from vendor if systems fail or have issues
System Hardening	Minor system hardening through security vulnerabilities being patched

Option 2 – Maintenance Projects

Option 2 is to complete the ICT – Non-Recurrent (Other) maintenance projects in addition to ICT – Recurrent projects for the EN24 regulatory period. These upgrades will bring Evoenergy onto the latest major version of platforms, interconnectivity technologies, hardware iterations and systems thereby ensuring alignment with other systems in the Evoenergy ICT ecosystem.

These upgrades are recommended by system vendors and involve updating frameworks, key features, and larger system upgrades that take the platforms to their latest recommended versions.

Option 2 reduces risk in all identified areas. The proposed upgrades allow Evoenergy to reduce complexity through upgrading the platforms and reverting work-around functionalities that have accrued over time thereby returning the platforms to the state that each was designed for and futureproofing use of the systems. This option also leverages existing productivity measures gained from the current deployments and mitigates cybersecurity risk by maintaining best industry practice and following Essential Eight Principles and recommendations from the Australian Signals Directorate.

This option includes continuing the Project Management Tool upgrade project through to completion so that the investment during the EN19 period is not wasted.

Evoenergy categorises all the projects in this option as Non-Recurrent – Maintenance as it involves updating a system or application that has a frequency of less than once every five years.

Costs

Option 2 will require $1,964,121 of Non-Recurrent ICT capital expenditure during the EN24 period.

Table 54 ICT costs option 2

Project Title	FY25	FY26	FY27	FY28	FY29
DMS Platform Upgrade	-	$450,884	-	-	-
PowerPlan Platform Upgrade	-	-	$710,229	-	-
Project Management Tool	$269,795	-	$215,670	-	-
Website Suite Platform Upgrade	-	$317,543	-	-	-
Video Conferencing	-	-	-	-	-

Risks

Table 55 ICT risks option 2

Risk	Description
Vendor support	Outdated platforms missing significant upgrades could contribute to reduction of vendor support effectiveness.
Vulnerability	Increased cybersecurity vulnerability due to the lack of patches, fixes, and upgrades.
Failure/Degradation	Increased risk of systems and infrastructure running in a degraded state or failing, recovery of this would be costly as the vendor could charge additional fees for supporting out of date versions.
Integration	These ICT systems will be out of alignment with related systems that are upgraded to modern equivalents. Annual minor upgrades will become more difficult as gaps between versions with other Evoenergy applications increases.
Project Management	Inability to manage projects effectively increase costs due to inefficiencies, currently Evoenergy must use other (no tool) means of achieving this.

Benefits

Table 56 ICT benefits option 2

Benefit	Description
Performance	Small performance increases due to optimisations during patching.
Support	Support from vendor if systems fail or have issues.
System Hardening	System hardening through security vulnerabilities being patched.

Options financial summary

The proposed maintenance projects have a cost impact of $1.96M but are considered given the qualitative and non-bankable benefits they deliver. The toolsets included in this investment brief support core operations and in some cases, are exposed to a heightened security threat due to the inherent access available to the public. As such, it is essential that these systems are secure and supported. The lower cost option to defer system upgrades and put support at risk was considered to not be prudent and potentially not align with the requirements of AESCSF Security Profile 3, which is the current targeted security profile for Evoenergy based on the AESCSF criticality assessment.

Table 57 ICT options capital expenditure

Option	EN24 Capital Expenditure $million
Option 1 - Defer upgrade	[0.504]
Option 2 – Maintenance projects	[1.96]

6.4. Benefits

The primary driver of this investment is secure and stable solutions through maintaining existing capability. As noted above, this investment brief addressed the spend profile associated with several core Evoenergy systems. Should these systems experience extended unplanned outages, Evoenergy would not be able to achieve the service level requirements of customers.

6.5. Assumptions, dependencies and risks

Assumptions

Table 58 ICT assumptions

Assumption description	Impact if assumption proven invalid	How will the assumption be assessed?
Vendor roadmaps do not change significantly for the Evoenergy suite of products that are addressed in this investment brief early in the EN24 period.	Proposed investment profile may not align with the required timing or approach of system upgrades that are required to achieve a secure and stable ICT environment.	Continued engagement with product vendors and industry partners.

Dependencies

Table 59 ICT dependencies

Dependency description	Dependent upon
Replacement of the Evoenergy finance system may lead to amendments to the asset hierarchy and data repositories associated with asset management and planning. Definition of the changes are required prior to the non-recurrent expenditure in some systems addressed in this investment brief.	The risks associated with the potential changes to the asset hierarchy will be mitigated by adequate architecture and design deliverables being shared by the Finance system replacement project.

Risks

Table 60 ICT risks

Risk description	Causes	Consequences	Preventative, Detective & Responsive Controls
Compromise of Platform	Lack of system hardening – Cybersecurity, Vendor Support, Lack of compatibility	Loss of service Loss of information Loss of efficiency	Following vendor roadmap for upgrades and updates. Vendor support for recovery of platform Cybersecurity team remediation/recovery of platform
Degradation of Platform	Lack of system hardening – Cybersecurity Vendor Support Lack of compatibility	Loss of efficiency	Vendor support for recovery of platform Cybersecurity team remediation/recovery of platform
Failure of Platform	Cybersecurity Vendor Support Lack of compatibility	Loss of efficiency	Vendor support for recovery of platform Cybersecurity team remediation/recovery of platform
Failure of Compliance	Vendor Support Lack of compatibility	Financial / Loss of licence	Vendor support for recovery of platform to meet licence requirements (Asset management)