January 2026

Powerlink 2027-32 Revenue Proposal

IT Investment Program

IT02 – Enterprise Asset Management

Contents

1. Executive Summary

As a major infrastructure asset owner, manager and operator, Powerlink is continuously refining and optimising its asset management effectiveness. To that end, the organisation's key asset management objectives are to:

1. Maintain electricity network reliability and security;
2. Maintain asset safety;
3. Ensure asset management decisions support sustainable business outcomes;
4. Maintain asset risk within the corporate risk appetite; and
5. Use asset information to inform business-wide decisions.

Information Technology (IT) is a critical enabler of effective asset management and operations. By leveraging accurate, accessible asset information, together with advanced analytics and innovative technologies, Powerlink will drive informed decisions, improve operations and automation, and ensure alignment with the above asset management objectives.

Powerlink's pillars of asset information management effectiveness are:

- Integrated data systems;
- Transparency, accessibility and consistency of data;
- Standardised processes and governance;
- Project information integration and accuracy;
- Unique asset identification across the lifecycle; and
- Empowerment, collaboration and enablement of future business improvement. E.g. through Artificial Intelligence (AI) and predictive analytics.

In the current regulatory control period (2022-27), Powerlink has laid several foundations for this vision, including through:

- Transition to the sustainable SAP S/4HANA software platform;
- Digital Engineering deployment of renewed electricity infrastructure design and engineering tools, repositories and processes, consistent with modern infrastructure management practices; and
- Strategic Data Program delivery of a centralised data analytics repository and tooling.

In the coming regulatory control period (2027-32), through the investments forecast in this preliminary business case, it is proposed to build on these foundations, both for the purposes of IT systems sustainability and also as an enabler of Powerlink's asset information management improvement as described in the sections below.

EAM System and Data Integration

Our asset data stores will be consolidated and integrated within SAP S/4HANA and the Digital Engineering Common Data Environment (CDE). Integrated asset and operational data will also be warehoused in the Strategic Data Platform enabling accurate and timely access to asset information, with defined data governance, transparency of data sourcing, and avoidance of duplication.

This investment will also establish and maintain a consistent asset model and unique asset identification across the asset lifecycle from planning to design, construction, commissioning, maintenance and decommissioning.

Consolidation and integration into our core system platforms will mitigate asset management risk, while also enabling improvement in asset management practices consistent with the key objectives and vision.

Field Automation

Asset management continuous improvement is dependent on the timely and accurate monitoring of field data, including through mobile applications, asset inspections and automated workflows. Powerlink field work crews are currently equipped with secure tablet devices, with maintenance and event response work scheduled in conjunction with the core SAP asset and works management platform. In the coming period we'll build on this foundation, to provide field crews with a consolidated set of asset information directly applicable to their work tasks – including equipment specifications, maintenance histories, 3D Computer Aided Design (CAD) drawings, configuration data, and safety risk information (e.g. asbestos, chemical and other site risk details).

Using the Field Automation platform, our crews can record first-hand information to update and maintain our asset data accuracy, while also capturing asset condition data as an enabler of further asset maintenance planning effectiveness. Integration of Field Automation with our consolidated Portfolio and Program Management (PPM) system will also enable improved workflow checkpoint safeguards, to ensure accuracy of our as-constructed and as-commissioned asset data.

Supply Chain Management

Powerlink currently operates a diverse and disparate set of system capabilities, tools and processes supporting our core supply chain management business functions, from planning and sourcing, through to contracts management, materials and inventory management, as well as warehousing and logistics. Many existing processes are highly manual, involving off-system data stores that lack data integration or systemised data integrity management.

In the coming period we'll therefore leverage the investment in SAP S/4HANA to provide a robust and scalable supply chain management platform, with sustainable master data governance, direct EAM asset data integration, and improved materials forecasting and planning. The solution will facilitate seamless data flow from sourcing to projects and into operations, with contemporary supplier management capabilities, contracts management and inventory management. Through use of SAP Fiori, the solution will also integrate with the core Field Automation platform, providing mobile workforce access for near real-time supply chain visibility and workflow management.

Multi-Environment and External Integration

We'll provide curated access to our integrated asset model, project and digital engineering data, and near real-time operational data through multiple internal and external systems, targeted to specific user groups and purposes.

This includes provision of core asset data, maintenance histories and design information to program managers, designers, asset managers, construction projects, network operators, field teams and authorised contractors. This transition will enable improved insights for operations, planning and decision support.

Digital Engineering Construction and Commissioning

Building on our existing investment in 3D primary systems design, we'll enable improved construction project delivery effectiveness consistent with contemporary ISO 19650 industry practices. This includes modular, multi-discipline construction lifecycle management, advanced work planning, smart completions and digital forms.

This business case considers two options to address the business and technology drivers, and contrasts these options against a base case (counterfactual) scenario. I.e.:

- **Option 1 (Recommended Option)** "Existing EAM Systems Improvement"
- **Option 2 (Alternative Option)** "EAM Real Time Digital Twin"

The Recommended Option "Existing EAM Systems Improvement" addresses all identified drivers and represents the best NPV outcome over the 10-year analysis period.

The total forecast cost for the recommended option is **$25.23M** ($1.52M Capex, $23.71M Project Opex) in FY27 Real Terms (pre-CAM[1]).

[1] The term "pre-CAM" indicates that the forecast cost represents the holistic Powerlink investment amount, prior to application of the Cost Allocation Method (CAM).

2. Investment Decision

2.1 Investment Drivers

Powerlink has a responsibility to manage its substantial asset base safely, reliably and efficiently. Effective asset management is critically dependent on Information Technology (IT) to maintain accurate asset data, support efficient asset project delivery, analyse asset performance, and to develop and execute efficient asset maintenance plans.

2.1.1 Asset Management Context

Powerlink manages and operates five primary classes of network assets:

- **Transmission Line Assets** including foundations, structures, conductors, insulators, earthing and underground cables
- **Substation Primary Systems Assets** including busbars, circuit breakers, voltage transformers, current transformers and isolators
- **Secondary Systems Assets** including protection relays, remote terminal units (RTUs), SCADA control systems technologies, sensors and switches
- **Telecommunications Assets** including fibre optics, electronic signalling devices, firewalls, routers and multiplexors
- **Land Assets** including network corridors and land parcels

These assets are managed in accordance with the Powerlink Asset Management System, across the end-to-end asset lifecycle as depicted in Figure 1 below.

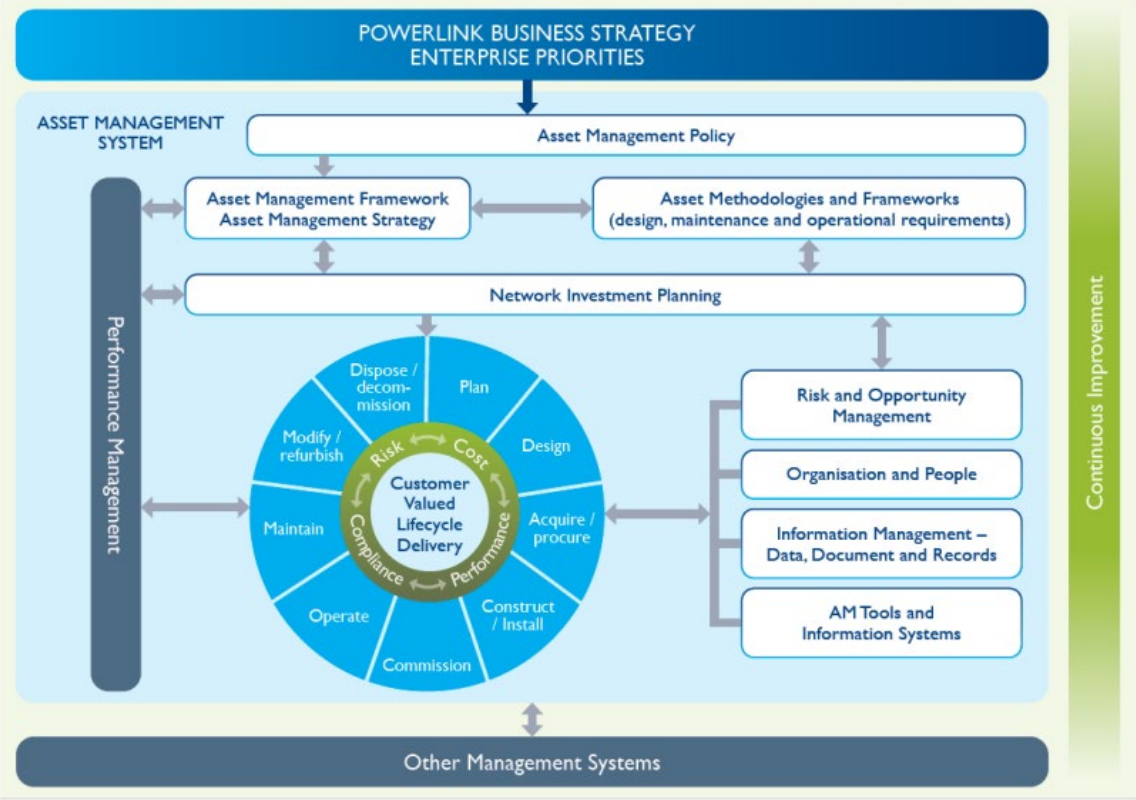

Figure 1: Powerlink Asset Management System

As indicated in Figure 1, prudent asset management considers Compliance, Risk, Cost and Performance across the nine asset lifecycle stages. I.e. Plan, Design, Acquire/Procure, Construct/Install, Commission, Operate, Maintain, Modify/Refurbish and Dispose/Decommission.

Powerlink's asset management decision-making is broken into three key phases:

- The **Planning and Investment phase** involves deciding on investment requirements, identifying appropriate assets (if any), and determining the form those assets should take given the later stages of the asset life cycle.
- Through the **Operation, Maintenance and Refurbishment phase**, Powerlink ensures that each asset remains fit for purpose over its life. This includes ongoing assessment of the condition of the assets and review of operating, maintenance and refurbishment strategies.
- The **End of Life phase** involves considering an asset's enduring need and ongoing fitness for purpose. Any decision to reinvest in assets forms part of the planning and investment phase to ensure optimal economic outcomes.

The timely capture and provision of accurate asset data is critical for the effective operation of the asset management framework across the asset lifecycle.

One of the primary types of asset data is information pertaining to the physical characteristics of the asset as maintained in Powerlink's SAP S/4HANA system. This data includes details such as the make and model of the asset, its dimensions, and its location within the network. SAP asset data also includes measuring point information, recording a wide variety of asset condition and performance data over time.

Geospatial data is also increasingly important for asset management, including as recorded in SAP and the Powerlink Geographic Information System (GIS), with integration to a wide range of external geospatial data sets.

Design drawings are also an important component of asset data. These primary systems, secondary systems, civil and telecommunications designs are managed in Powerlink's Digital Engineering Common Data Environment (CDE) datastore. Transmission line designs are also managed in the specialised [redacted] tool.

The Portfolio Risk System (PRS) is a critical component of Powerlink's asset management system that manages risk associated with assets, providing line of sight between investments, assets and risks so that optimised value-based decisions can be made across the asset lifecycle. This system enables risk analysis for each asset and helps Powerlink make informed decisions about how to manage assets.

2.1.2 Asset Management Continuous Improvement Drivers

Powerlink is competent in its asset management maturity, however whilst the asset management system is sound, continuous improvement in asset information management is critical to enable strategic and operational goals. In particular, enhancing how data is managed, shared and leveraged will not only support improved decision making, but also elevate the performance, reliability and sustainability of Powerlink's assets over the long term.

To that end, Powerlink's asset information strategy sets out the path for asset information management improvement, aligned with the Asset Management Framework.

Data fragmentation is a key issue, with asset data residing not only in SAP but also in PRS, engineering document repositories and various other datastores. As such, multiple "sources of truth" for asset information must be maintained. One key item of this strategy is the strengthening of existing data standards. Currently, data is managed for the various asset classes in different ways, thereby limiting consistency and availability of insights for decision management. Continuous improvement aims to standardise our asset data storage based on a common, conceptual Asset Information Model.

Governance of asset information is another Powerlink focus area for continuous improvement. With a well-defined governance framework, featuring clear roles, responsibilities and accountability for asset data stewardship, Powerlink is committed to ensuring its asset data remains trusted, high-quality and fit for purpose.

Analytics represent a further opportunity for asset performance optimisation, more fully integrating data insights into strategy and operations. By setting clear goals and KPIs for analytics and decision-support tools, Powerlink can foster innovation while strengthening day-to-day decision-making.

A summary of the key focus areas for asset information continuous improvement is provided below.

Continuous Improvement Focus Area 1: Consistent Asset Information Model Standards

- Revised ***asset information model*** to guide consistent asset data capture and validation
- Consistent, ***unique asset identification*** across the lifecycle from planning to design, construction, commissioning, maintenance and decommissioning – accessible in all asset datastores
- Comprehensive ***asset data capture standards*** for both static and dynamic asset data classes
- ***Alignment of data standards*** with asset strategies and analytical needs

Continuous Improvement Focus Area 2: Optimised Asset Information Systems and Processes

- Utilise the modern ***SAP Enterprise Asset Management (EAM)*** facility, to enable access to SAP's current and emerging asset management functionality and features

- ***Alignment of the SAP EAM configuration*** with the defined asset information model and data asset management strategies
- ***Consistent, centralised record of asset and network ratings*** for all classes of assets and primary system designs, for efficient asset maintenance and operation, and in support of Dynamic Line Ratings (DLR) strategies
- ***Accessible asset configuration management capability***, to centralise recording of configuration details and to provide access for maintenance and operations
- ***Field Workforce Automation*** providing efficient access to accurate asset information in the field, and the validation of asset data capture at each stage of the lifecycle (consistent with the asset data capture standards)
- ***Standardisation and digitisation of supply chain management processes***, with automated integrations, "single source or truth", and direct mobile information access
- ***Define and configure performance metrics*** to ensure asset management system effectiveness

Continuous Improvement Focus Area 3: Data Governance Improvement

- Revised ***asset data governance stewardship*** model and processes
- Alignment of ***roles and responsibilities*** consistent with the stewardship model

Continuous Improvement Focus Area 4: Asset Analytics and Decision Support

- ***Data driven supply chain optimisation***, for improved decision making, resilience and environmentally responsible logistics management
- ***Embedding analytics into asset management systems***, in alignment with the revised asset information model and asset data capture standards
- ***Analytics extensibility*** to enable use of emerging AI, machine learning and pattern recognition capabilities for efficient asset risk and reliability modelling, and for future predictive maintenance

2.1.3 Technology Sustainability and Extensibility Drivers

Powerlink's asset management business processes are reliant on the SAP S/4HANA business system operating the Plant Maintenance (PM) module, together with a collection of related software products including Supply Chain Management tools, the Common Data Environment (CDE) drawing management repository, and various legacy in-house or customised systems – including for ratings management, configuration management and other functions. Asset data capture is also partly reliant on Microsoft Excel which lack dynamic validation capability, and which is not aligned with the intended asset information model and data capture standards for static and dynamic asset classes.

For ongoing sustainability of these critical business systems, and for extensibility to enable Powerlink's plans for asset management continuous improvement, the following technology revisions are required.

Sustainability and Extensibility Driver 1: SAP EAM Transition

Powerlink uses the SAP Plant Maintenance (PM) asset management capabilities, with configuration and functionality dating to the organisation's previous legacy ERP Central Component (ECC) implementation. With the

transition to S/4HANA, SAP is now focussed on development of its modern EAM capability suite, as the future focus for product improvement and extensions.

SAP EAM builds on the foundation of the existing ECC PM module functions (including work order management, planned maintenance and equipment tracking), and extends those features to provide holistic end-to-end asset lifecycle management, enabling predictive and proactive asset management strategies and data-driven decision-making to optimise asset performance and reduce downtime. For sustainability of Powerlink's investment in SAP into the 2030s, it is necessary to transition to utilise SAP EAM, including:

- ***Data preparation and cleansing*** (including equipment hierarchies, spare parts inventory and historical maintenance records)
- ***Process revision and change***
- ***SAP reconfiguration and integration*** (including integrations with the Digital Engineering 3D design drawing CDE datastore, the GIS and network operations datastores)
- ***Transition from legacy SAP ECC PM customisations***
- ***Business process testing, training and change management***

Sustainability and Extensibility Driver 2: Manual Asset Data Validation

Powerlink captures asset data using manual data validation processes throughout the asset lifecycle. Much of this data capture is Microsoft Excel based, and therefore lacks pre-population and real-time data validation.

For business process efficacy, data quality improvement and technology sustainability, it is prudent to transition to direct SAP data entry validation using the SAP EAM "Service and Asset Manager" Fiori product. Service and Asset Management is a native multi-platform application enabling bi-directional access to (and update of) EAM asset data, with interactive data validation and synchronisation.

Sustainability and Extensibility Driver 3: Ratings and Configuration Datastores

Powerlink manages asset and network ratings through an inconsistent set of datastores and manual processes, with inconsistent linkage to SAP dependent on the asset class. Equipment configuration information is also mastered outside of the SAP asset management system, including in manual configuration data capture forms stored in an end-of-life document repository. For sustainability and ongoing data accessibility, it is prudent to transition the recording and management of ratings and configuration data, to a set of consistent data structures and linkage with SAP asset information.

Sustainability and Extensibility Driver 4: Supply Chain Management Practices

Powerlink relies on a fragmented mix of systems, tools and processes to support its core supply chain management functions. This includes processes supporting supply planning, sourcing, contract management, materials and inventory control, warehousing, transport and logistics. Many of these processes are heavily manual, often dependent on off-system data sources that lack integration and consistent data governance.

For sustainability and extensibility, it is important to leverage our investment in SAP S/4HANA to establish a robust, scalable supply chain management platform to address the existing challenges.

In delivering the sustainable SAP-centric supply chain model, focus will be placed on:

- Revision of the SAP legacy configuration to utilise the modern capabilities for S/4HANA, with close integration of the SAP PM, Materials Management (MM), Inventory Management (IM) and Financial Accounting and Control (FICO)
- Transition to the modern SAP user interface, including the Fiori mobility solution
- Data quality assurance through improved supply chain Master Data Governance (MDG), with renewed practices and a confirmed "single source of truth" for all supply chain datasets
- Improved workflow management for efficiency and effectiveness of supply chain processes, including sourcing, contract management, inventory management and logistics
- Improved warehouse management using the functionality of SAP Extended Warehouse Management (EWM) to streamline processes and improve stock and materials management
- Extension of the SAP Supplier Relationship Management (SRM) facility for seamless supplier interactions
- Advanced Supply Chain Planning (ASCP) leveraging AI-driven analytics for improved demand forecasting and inventory optimisation
- Automated end-to-end supply chain reporting, for consistency, efficiency and improved data analytics for decision support

2.1.4 Target State Vision

Through addressing the organisation's Asset Management Continuous Improvement Drivers and the Technology Sustainability and Extensibility Drivers, Powerlink's target state vision will enable and ensure:

- Sustainable and secure IT systems and processes for the organisation's critical enterprise asset management operations
- Effective and extensible asset management, where data-driven decision making leads to optimised maintenance, longer asset lives and fewer unexpected outages
- An asset management approach that is predictive and risk-based, utilising consolidated asset information
- Efficient and effective mobile and digital workflows, with field technicians using SAP "Service and Asset Manager" (the modern Fiori-based mobile application) directly integrated with "single source of truth" asset datastores
- Improved supply chain management effectiveness, including planning, sourcing, contracts, warehousing, inventory control and logistics management
- Condition-based maintenance, further utilising inspection and sensor measurement data to optimise maintenance planning
- Other SAP asset analytics tools will also be utilised where effective. This may include use of Asset Strategy and Performance Management (ASPM) and selected deployment of predictive algorithms running on the SAP Business Technology Platform (BTP). E.g. For failure prediction based on oil temperature trends.

2.2 Inherent risks

Table 1 below summarises the inherent risks requiring mitigation through this investment, with likelihoods forecast as at mid-2032 (i.e. at the end of the coming regulatory control period) if no remedial actions are taken.

Inherent Risk	Likelihood	Consequence	Rating
Risk R1 **System Supportability, Sustainability and Extensibility Risk** Risk that existing systems fall out of vendor support, rendering software patches and security improvements unavailable. Unsupported systems also limit the opportunity for business continuous improvement, or necessitate increased reliance on manual processes and ad hoc workarounds (e.g. spreadsheets, macros and manual data transfers).	**C – Possible** The existing SAP PM module functionality is likely to remain supported through the coming regulatory control period, however SAP's focus for asset and works management system improvements is on their broader EAM suite. Other existing systems will more certainly be unsupported in the coming regulatory control period, including the legacy Ratings and Configuration Management datastores. There is also a material risk that Microsoft's support for the existing form of Excel macros, based on Visual Basic for Applications (VBA), may change within the coming regulatory control period as Microsoft's focus has progressively shifted to more modern end-user technologies including "PowerApps" and "DataVerse".	**4 – Moderate** The consequence of system non-sustainability varies greatly depending on the system in question and the nature of incidents that may result. In the least case, the non-sustainability will limit business continuous improvement, particularly in asset information management process optimisation. In a larger sense, the non-sustainability increases reliance on manual processes and ad hoc spreadsheets, which can be error prone or limit the timely access to critical business information (e.g. ratings, configuration data or condition data). Potential future non-support for Excel macros would have a further significant consequence.	**4 – Significant**
Risk R2 **Asset Data Quality Risk** Use of manual data capture validation places the accuracy and completeness of important asset data at risk, and limits the organisation's planned drive for Asset Information Improvement.	**C – Possible** Powerlink currently captures asset data through manual data capture validation that is mostly Microsoft Excel based, and lack pre-population and real-time data validation. While manual processes are in place to check data quality upon entry to the SAP system, these processes can result in human error. The existing manual worksheets are also not aligned with Powerlink's asset management continuous improvement plans to revise the organisation's asset information model for both static and dynamic asset data classes.	**5 – Major** Reliance on manual data capture validation that lack pre-population and have limited data validation may result in asset data inaccuracy – with broad potential consequences ranging from process inefficiency through to material safety implications.	**4 – Significant**

Inherent Risk	Likelihood	Consequence	Rating
Risk R3 **Supply Chain Management Effectiveness Risk** Risk of supply chain management ineffectiveness, through reliance on fragmented systems and processes, with dependencies on off-system data sources lacking integration and consistent data governance.	**B – Likely** Powerlink uses a mix of systems, tools and processes to support the organisation's core supply chain management functions. Many of these processes are heavily manual and non-standardised. Data governance has also evolved over an extended period, with resultant inconsistency of master data management practices and underutilisation of the modern supply chain optimisation capabilities of SAP. These and other factors indicate likeliness of supply chain ineffectiveness.	**4 – Moderate** The severity of the consequence is dependent on the nature of the supply chain process ineffectiveness, and may include inaccurate forecasting and sourcing planning, delays to project delivery, supplier discontent or cost escalation.	**4 – Significant**
Risk R4 **Field Asset Data Risk** Risk of ineffective or inaccurate data provision to field work crews, or ineffective use of work crews in the capture of asset measurements and condition information.	**C – Possible** While Powerlink has a secure online tablet platform for use by work crews in the field, information provisioned through this system is not directly integrated with SAP. Also, when capturing asset information through this platform, in most instances, the captured data is not directly applied to the asset in SAP (including various forms of measurement or condition data). There is therefore a material risk that important information is not provided in a timely manner to work crews, and/or that crews are not utilised in the most effective manner for capturing and maintaining accurate asset data.	**5 – Major** The consequence of ineffective data provision to the field mostly relates to works efficiency, but in the event of inaccurate (or non-timely) data provision, there is also a potential safety implication. Similarly, the consequence of ineffective asset data capture from work crews in the field is that Powerlink's asset master data records may fall out of date, resulting in less effective asset management decision making, or potentially delayed mitigation of operational risks.	**4 – Significant**

Table 1: Inherent Risks

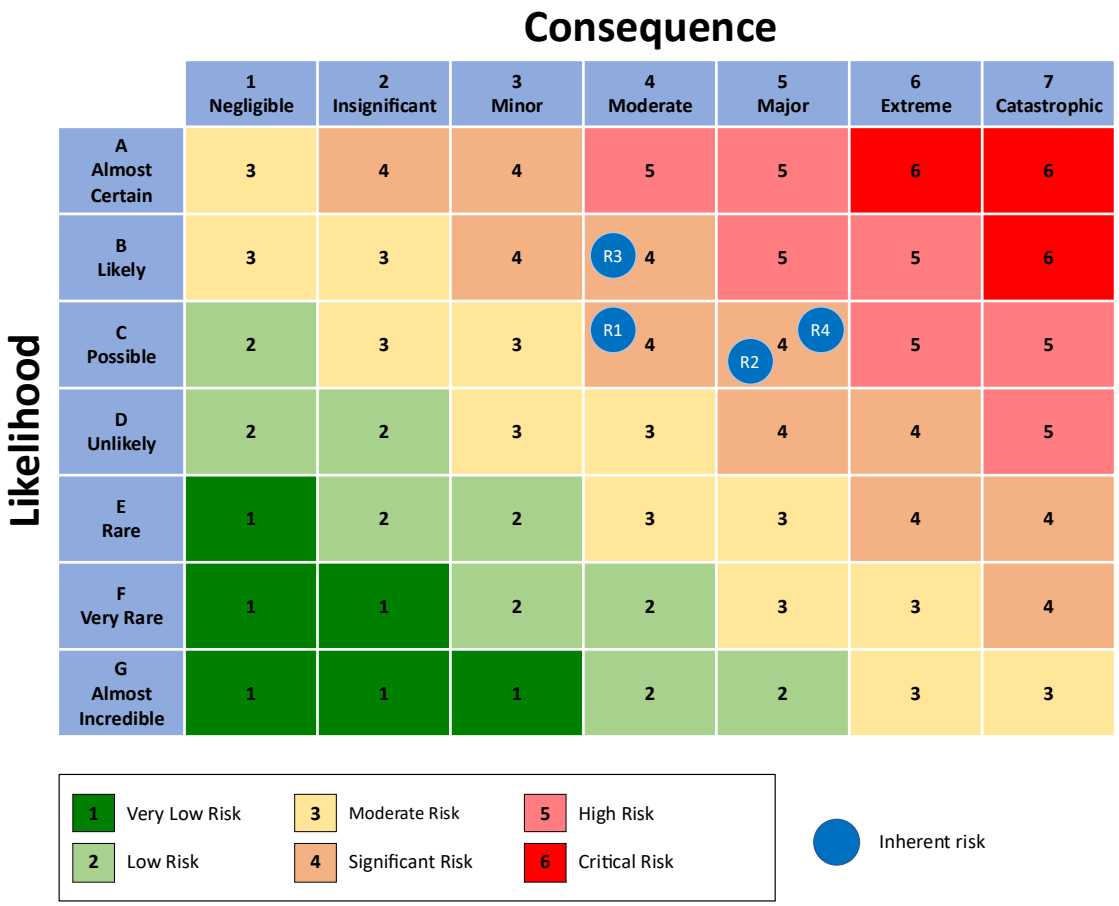

Figure 2: Inherent Risk Matrix

3. Options Analysis

3.1 Investment Options Introduction

This business case explores and analyses the following options to address the investment drivers.

Options	Description
Option 1: Recommended Option "Existing EAM Systems Improvement"	In this recommended option, a set of Powerlink EAM system improvements will be undertaken to address the business and technical drivers, and to mitigate risk.
Option 2: Alternative Option "EAM Real Time Digital Twin"	In this alternative option, Powerlink will re-platform its asset management processes based on a modern "EAM Real Time Digital Twin" design, integrated with existing systems.
Base Case: Counterfactual	In this base case scenario, Powerlink would continue to operate the existing systems without further change or integration for the medium term.

Table 2: Business Case Options

3.2 Option 1: Recommended Option (Existing EAM Systems Improvement)

This Recommended Option (Existing EAM Systems Improvement) describes the planned investment included within the coming regulatory control period proposal. In this option, a prudent set of coordinated system, data and process improvement initiatives will be undertaken as described below to address the business and technical drivers described in section 2.1, and the inherent risks described in section 2.2.

3.2.1 Recommended Option – Scope Description

Initiative 1: EAM System and Data Integration

This initiative will enable long term asset management sustainability and extensibility through introduction of modern SAP EAM capability building on the foundation of Powerlink's existing S/4HANA Plant Maintenance (PM) implementation.

Specifically, this investment will include:

- Detailed data definition for Powerlink's revised asset information model, including definition of comprehensive asset data capture standards for static and dynamic asset data classes. The standards will introduce consistent, unique asset identification across the lifecycle from planning to design, construction, commissioning, maintenance and decommissioning – enabling effective configuration of SAP EAM and detailed validation rules defined by asset class, and further enabling integration of SAP asset data with planning, design and operational data maintained in other Powerlink platforms through Initiative 4 "Multi-Environment and External Integration" (as described below).
- Existing SAP asset data preparation and cleansing, to enable effective use of EAM capabilities, as well as transfer of data sets from non-SAP asset data repositories.

- Transition from legacy Powerlink customisations of SAP PM, to instead utilise "clean core" (non-customised) functions available in the modern SAP EAM.
- Network and equipment ratings and configuration data will be integrated with SAP, combined with other existing Powerlink master data stores as appropriate, including the Digital Engineering Common Data Environment (CDE) platform, the [redacted] GIS, and the Electronic Document and Records Management System (EDRMS).
- Leveraging the modern capabilities of SAP EAM, transition from Powerlink's legacy manual asset data capture validation to instead use the SAP Fiori "Service and Asset Manager" capability for direct interactive asset data management – including in the field as enabled through the Investment 2 "Field Automation" initiative described above, and also in the back office for asset planners, designers, maintenance teams and operational support.
- Progressively revise Powerlink's use of asset data and analytics across the lifecycle to maximise the effectiveness of asset data quality processes, and to enable delivery of the organisation's asset information improvement strategies – including through introduction of improved asset data governance, and ultimately through a shift to modern and emerging asset maintenance planning and delivery techniques (such as through future IoT and AI-enabled predictive maintenance planning, as supported by the SAP EAM product-set).

Consolidation and integration into our core system platforms will mitigate asset management risk, while also enabling improvement in asset management practices consistent with the key objectives and vision.

Initiative 2: Field Automation

In the coming period we'll build on the foundation of our existing secure field tablet technology solution, to enable project, maintenance and event response work to be scheduled and managed interactively with the SAP asset and works management platform. The improvements will provide field crews with a consolidated set of asset information directly applicable to their work tasks, including equipment specifications, maintenance histories, Digital Engineering 3D Computer Aided Design (CAD) drawings, and safety risk information (e.g. asbestos, chemical and other site risk details).

The Field Automation transition will be built upon the foundations of SAP S/4HANA, supplemented with use of the SAP "Service and Asset Manager" Fiori based mobile application. This tool supports offline and online work, digital checklists, and provides direct integration with the SAP S/4HANA source of truth for asset data. The scheduling and dispatch of work will also be integrated within the core SAP platform utilising the functionality of the Field Service Management (FSM) facility where appropriate.

Together with Initiative 1 "EAM System and Data Integration", the Field Automation platform will also provide field access to timely asset configuration data, online equipment maintenance histories, and enable near real-time asset measurement point condition data capture.

Using the platform, our crews will be able to capture first-hand information to update and maintain our asset data accuracy, while also recording asset condition data as an enabler of further asset maintenance planning effectiveness.

Integration of Field Automation with our consolidated PPM systems will also enable improved workflow checkpoint safeguards, to ensure accuracy of our as-constructed and as-commissioned asset data.

Initiative 3: Supply Chain Management

Building on the core SAP S/4HANA platform, this initiative will deliver an integrated supply chain management solution utilising the modern capabilities of SAP S/4HANA.

As indicated in Figure 3 (over page), the planned scope will be delivered in three tranches.

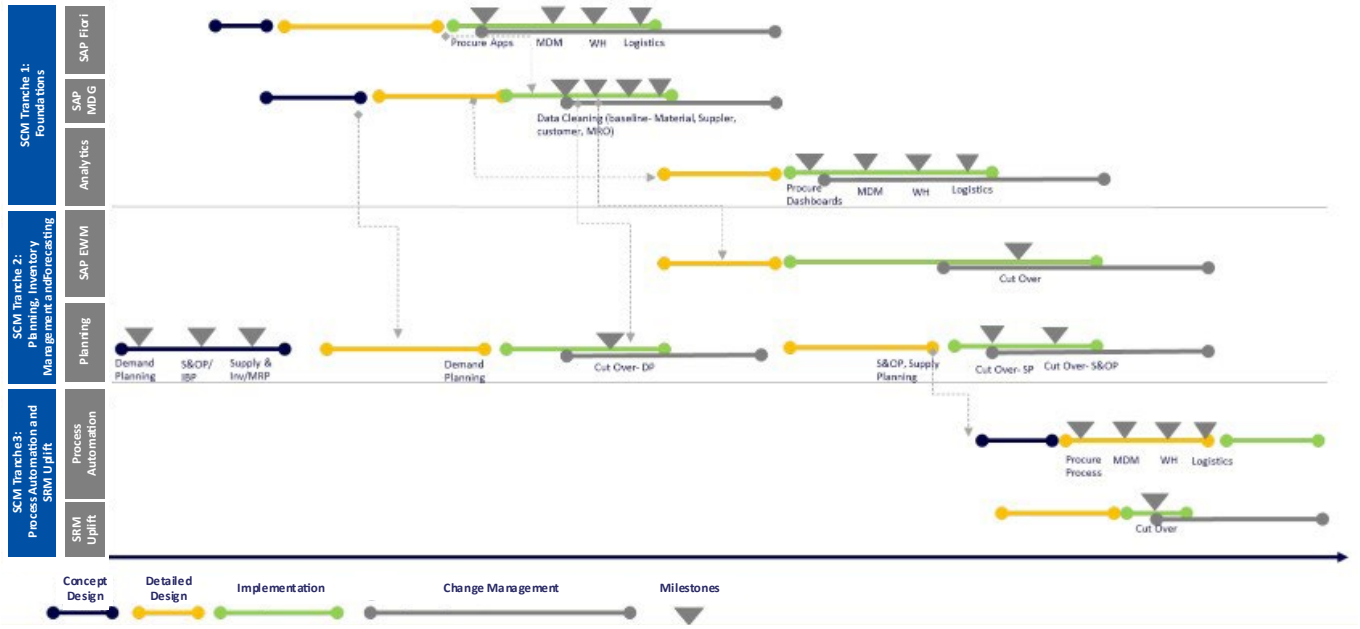

Figure 3: SCM Implementation Tranches

SCM Tranche 1: Foundations

- Introduction of the Fiori user interface for supply chain management, including provision of mobile access in warehouses, surrounding locations, and in the field as enabled through Initiative 1 “EAM System and Data Integration” and Initiative 2 “Field Automation” above.
- Implementation of SAP Master Data Governance (MDG) with revised master data management processes, confirmation of the “single source of truth” for all datasets (planning, sourcing, warehousing, logistics), and targeted data cleansing.
- Integration with SAP PM/EAM, Materials Management (MM) and Inventory Management (IM), and Financial Accounting and Control (FICO), representing the logical, physical and financial view of assets. Consideration will also be given to the potential further use of SAP Transportation Management (TM).
- Automation of supply chain reporting and dashboarding for consistency, efficiency and improved decision support. Out-of-the-box S/4HANA configurable reporting and dashboarding will primarily be utilised, and supplemented with whole-of-lifecycle reporting and analytics delivered through the Powerlink Strategic Data Platform (SDP).

SCM Tranche 2: Planning, Inventory Management and Forecasting

- Deployment of SAP Extended Warehouse Management (EWM) to enable streamlining of warehouse operations, including advanced inventory control and integration for asset planning and procurement functions.

- Implementation of SAP Integrated Business Planning (IBP) with Advanced Supply Chain Planning (ASCP) for demand forecasting and planning improvement, and inventory management optimisation.

SCM Tranche 3: Process Automation and SRM Uplift

- Automation of supply chain process workflows using SAP Process Orchestration (PO), including requisitions, orders, bills of materials, sourcing processes, logistics processes and others – with rules-based approvals, notifications, exceptions and escalations.
- Uplifted implementation of the SAP Supplier Relationship Management (SRM) capability for seamless supplier interactions, with an online supplier portal and sourcing facilitation.

Initiative 4: Multi-Environment and External Integration

This initiative will utilise the revised asset information model and unique asset identifiers delivered through Initiative 1 “EAM System and Data Integration” to enable effective access to asset, project and engineering data across other Powerlink and third-party systems.

This information will be curated, and targeted to specific user groups and purposes. It includes provision of core asset data, maintenance histories and design information to program managers, designers, asset managers, construction projects, network operators and authorised contractors. The transition will enable improved insights for operations, planning and decision support.

The initiative will additionally leverage the capability enabled through Initiative 2 “Field Automation”, to provide Digital Engineering (including 3D designs) and operational data to the field, to improve efficiency and effectiveness of field works.

Initiative 5: Digital Engineering Construction and Commissioning

This final initiative will build on our existing investment in 3D primary systems design, the Digital Engineering Common Data Environment (CDE) and our consolidated Portfolio and Program Management (PPM) facility, to enable construction project delivery effectiveness, consistent with contemporary Building Information Management (BIM) industry practices aligned with ISO 19650.

BIM ISO 19650 methods are progressively being adopted across the utilities industry, as a structured approach to design and construction information management, with focus on client and contractor collaboration and delivery transparency. The approach utilises the CDE where all project information is stored and shared, ensuring consistency, traceability and accessibility. The standard also promotes the use of consistent naming conventions, metadata and workflows to reduce errors and improve efficiency across project teams (as per the asset information model defined through Initiative 1 “EAM System and Data Integration”). The BIM ISO 19650 approach streamlines infrastructure construction project design, planning and delivery by ensuring that all stakeholders, from design engineers to construction contractors, work from a single source of truth.

In the case of substation construction or augmentation projects, BIM ISO 19650 techniques ensure all parties access consistent, accurate design information and drawings, with timely information exchange as necessary to avoid clashes, delays and cost overruns. When integrated with standardised program delivery management practices, individual projects can improve coordination between civil, electrical and environmental disciplines, for delivery effectiveness and for alignment with modern industry practice.

This initiative will also consolidate other existing construction related tools that are heavily manual or spreadsheet based, as well as multiple analytics dashboards.

3.2.2 Recommended Option – Alignment with Investment Drivers

The extent to which the Recommend Option addresses (or does not address) the identified investment drivers is summarised in Table 3 below.

Alignment with Investment Drivers		
Asset Information Continuous Improvement Drivers		
Investment driver	**Extent addressed through Recommended Option**	
Consistent Asset Information Model Standards	✓	Powerlink's asset information model will be revised and optimised, with comprehensive asset data capture standards for both static and dynamic asset data classes. Unique identification will be allocated for all assets, to enable consistent reference across the asset lifecycle.
Optimised Asset Information Systems and Processes	✓	Powerlink's asset management systems and data (including SAP, Field Work Automation, Ratings, Configuration Management and Supply Chain Management) will be optimised, improved or renewed, to enable asset management continuous improvement and effectiveness.
Data Governance Improvement	✓	Asset data governance will be revised and improved, with clear definition of asset data stewardship responsibilities and end-to-end asset data quality assurance practices.
Asset Analytics and Decision Support	✓	Asset analytics will be directly enabled within the asset management system, in alignment with the asset management strategy. Through use of modern systems, consistent business practices, and with improved asset data quality assurance, the SAP EAM platform will enable progressive utilisation of emerging AI, machine learning and pattern recognition capabilities for efficient risk and reliability modelling, inventory demand forecasting, and for future predictive maintenance.
Technology Sustainability and Extensibility Drivers		
Investment driver	**Extent addressed through Recommended Option**	
SAP EAM Transition	✓	Long term asset management sustainability and extensibility will be enabled through introduction of modern SAP EAM capability building on the existing S/4HANA Plant Maintenance (PM) implementation.
Manual Asset Data Validation	✓	Powerlink will retire the legacy manual asset data validation processes, to be replaced with modern SAP Fiori direct asset data access capability for use in the field and in the back office.
Ratings and Configuration Datastores	✓	Network and equipment ratings and configuration information will transition to sustainable storage and management, including integrating the SAP asset management system, the Digital Engineering CDE and Objective EDRMS.
Supply Chain Management Practices	✓	A robust, scalable supply chain management platform will be established to address existing challenges, including through improvements in master data governance, inventory demand

		forecasting, supplier relationship management, mobile access and system usability.

Table 3: Recommended Option (Existing EAM Systems Improvement) Alignment with Investment Drivers

3.2.3 Recommended Option – Assumptions

The following assumptions are made for this Recommended Option (Existing EAM Systems Improvement) scenario:

- The five initiatives described in section 3.2.1 (above), will be delivered as an integrated IT delivery program with coordinated project management, IT design, business process revision, data migration management, system configuration, integration, organisational change management, testing and deployment.
- Bottom-up cost estimates have been developed for each of the five initiatives, using standard labour rates and consistent delivery methods. Costs related to shared activities (including program delivery management, end-to-end design, business process design and program communications) are shared across the estimates for each initiative.

Table 4 to Table 8 (over page) detail the resultant estimated phasing and cost breakdown for each of the five constituent initiatives. Table 9 (page 23) summarises the total combined cost forecast.

Initiative 1: EAM System & Data Integration	
Duration	**Months**
Planning and Analysis	3
Design	5
Configure, Build and Test	14
Deployment and Hypercare	1
Total	**23**

FY27 Real Terms	Capex	Project Opex	Project Total
Labour	[redacted]		
Vendors	-	[redacted]	
Software	-	[redacted]	
Infrastructure	-	[redacted]	
Total	[redacted]		

Table 4: Phase and Cost Breakdown – Initiative 1 (EAM System & Data Integration)

Initiative 2: Field Automation	
Duration	**Months**
Planning and Analysis	3
Design	3
Configure, Build and Test	9
Deployment and Hypercare	1
Total	**16**

FY27 Real Terms	Capex	Project Opex	Project Total
Labour	[redacted]		
Vendors	-	[redacted]	
Software	-	[redacted]	
Infrastructure	-	[redacted]	
Total	[redacted]		

Table 5: Phase and Cost Breakdown – Initiative 2 (Field Automation)

Initiative 3: Supply Chain Management	
Duration	**Months**
Planning and Analysis	3
Design	5
Configure, Build and Test	12
Deployment and Hypercare	1
Total	**21**

FY27 Real Terms	Capex	Project Opex	Project Total
Labour	[redacted]		
Vendors	-	[redacted]	
Software	-	[redacted]	
Infrastructure	-	[redacted]	
Total	[redacted]		

Table 6: Phase and Cost Breakdown – Initiative 3 (Supply Chain Management)

Initiative 4: Multi-environment & Ext Integration	
Duration	**Months**
Planning and Analysis	2
Design	3
Configure, Build and Test	10
Deployment and Hypercare	1
Total	**16**

FY27 Real Terms	Capex	Project Opex	Project Total
Labour	[redacted]		
Vendors	-	[redacted]	
Software	-	[redacted]	
Infrastructure	-	[redacted]	
Total	[redacted]		

Table 7: Phase and Cost Breakdown – Initiative 4 (Multi-environment and External Integration)

Initiative 5: Digital Engineering Construction Enablement

Duration	Months
Planning and Analysis	3
Design	5
Configure, Build and Test	13
Deployment and Hypercare	1
Total	**22**

FY27 Real Terms	Capex	Project Opex	Project Total
Labour	[redacted]	[redacted]	[redacted]
Vendors	-	[redacted]	[redacted]
Software	-	[redacted]	[redacted]
Infrastructure	-	[redacted]	[redacted]
Total	[redacted]	[redacted]	[redacted]

Table 8: Phase and Cost Breakdown – Initiative 5 (Digital Engineering Construction Enablement)

EAM Initiative Totals

FY27 Real Terms	Capex	Project Opex	Project Totals
Labour	[redacted]	[redacted]	[redacted]
Vendors	-	[redacted]	[redacted]
Software	-	[redacted]	[redacted]
Infrastructure	-	[redacted]	[redacted]
Total	$1.52M	$23.71M	**$25.23M**

Table 9: Total Combined Investment Cost Forecast

3.2.4 Recommended Option – Risk Mitigation

This recommended option mitigates the existing inherent risks (as described in Table 1 on page 11) such that the residual risks range from 2 – Low to 3 – Moderate as summarised below.

Inherent Risk	Inherent Risk Rating	Recommended Option Mitigation Controls	Residual Likelihood	Residual Consequence	Residual Risk Rating
Risk R1 System Supportability, Sustainability and	**4 – Significant**	Powerlink's asset management and delivery systems (including SAP,	**F – Very Rare** With the proposed	**3 – Minor** The nature of risk	**2 – Low**

Inherent Risk	Inherent Risk Rating	Recommended Option Mitigation Controls	Residual Likelihood	Residual Consequence	Residual Risk Rating
Extensibility Risk Risk that existing systems fall out of vendor support, rendering software patches and security improvements unavailable. Unsupported systems also limit the opportunity for business continuous improvement, or necessitate increased reliance on manual processes and ad hoc workarounds (e.g. spreadsheets, macros and manual data transfers).		PPM, Field Work Automation, Ratings and Configuration Management) will be optimised, improved or renewed, to enable asset management continuous improvement and effectiveness.	improvement investments, Powerlink's asset management and delivery systems will be supportable, sustainable and extensible on an ongoing basis.	consequence is unchanged, however due to the proposed investment, the significance of the potential risk consequence is lower than the inherent level.	
Risk R2 **Asset Data Quality Risk** Use of manual data capture validation places the accuracy and completeness of important asset data at risk, and limits the organisation's planned drive for Asset Information Improvement.	**4 – Significant**	Powerlink will retire the legacy manual asset data capture validation, to be replaced with modern SAP Fiori direct asset data access capability for use in the field and in the back office. The revised solution will enable direct pre-population with existing asset data, and will apply validation rules consistent with the updated asset information model.	**E – Rare** With the proposed improvement, including direct SAP data access and validation, the chances of risk realisation are lower than the inherent level, but some chance of error (particularly in historical data) remains possible.	**5 – Major** Although the likelihood of this risk is lower, the consequence of it eventuating is unchanged.	**3 – Moderate**

Inherent Risk	Inherent Risk Rating	Recommended Option Mitigation Controls	Residual Likelihood	Residual Consequence	Residual Risk Rating
Risk R3 **Supply Chain Management Effectiveness Risk** Risk of supply chain management ineffectiveness, through reliance on fragmented systems and processes, with dependencies on off-system data sources lacking integration and consistent data governance.	**4 – Significant**	The proposed investment consolidates Powerlink's supply chain management systems and datastores based on a modern SAP configuration, with associated workflows and analytics, thereby mitigating risks associated with heavily manual and non-standardised practices. The investment will also address the organisation's legacy supply chain master data management practices.	**E – Rare** With the proposed improvement investment, supply chain processes will be consistently managed using modern SAP configuration and practices.	**3 – Minor** The nature of risk consequence is unchanged, however due to the proposed investment, the significance of the potential risk consequence is lower than the inherent level.	**2 – Low**
Risk R4 **Field Asset Data Risk** Risk of ineffective or inaccurate data provision to field work crews, or ineffective use of work crews in the capture of asset measurements and condition information.	**4 – Significant**	The proposed investment will provide field crews with a consolidated set of asset information directly applicable to their work tasks – including equipment specifications, maintenance histories, Digital Engineering 3D CAD drawings, and safety risk information (e.g. asbestos, chemical and other site risk details). The updated platform will also provide field access to timely asset configuration data, online equipment maintenance histories, and enable near real-time asset measurement point condition data capture.	**E – Rare** With the proposed improvement, including direct SAP data access and validation, and access to curated information specific to the field task, the likelihood of the risk eventuating is materially lower.	**5 – Major** Although the likelihood of this risk is lower, the consequence of it eventuating is unchanged.	**3 – Moderate**

Table 10: Recommended Option (Existing EAM Systems Improvement) Mitigation of Inherent Risks

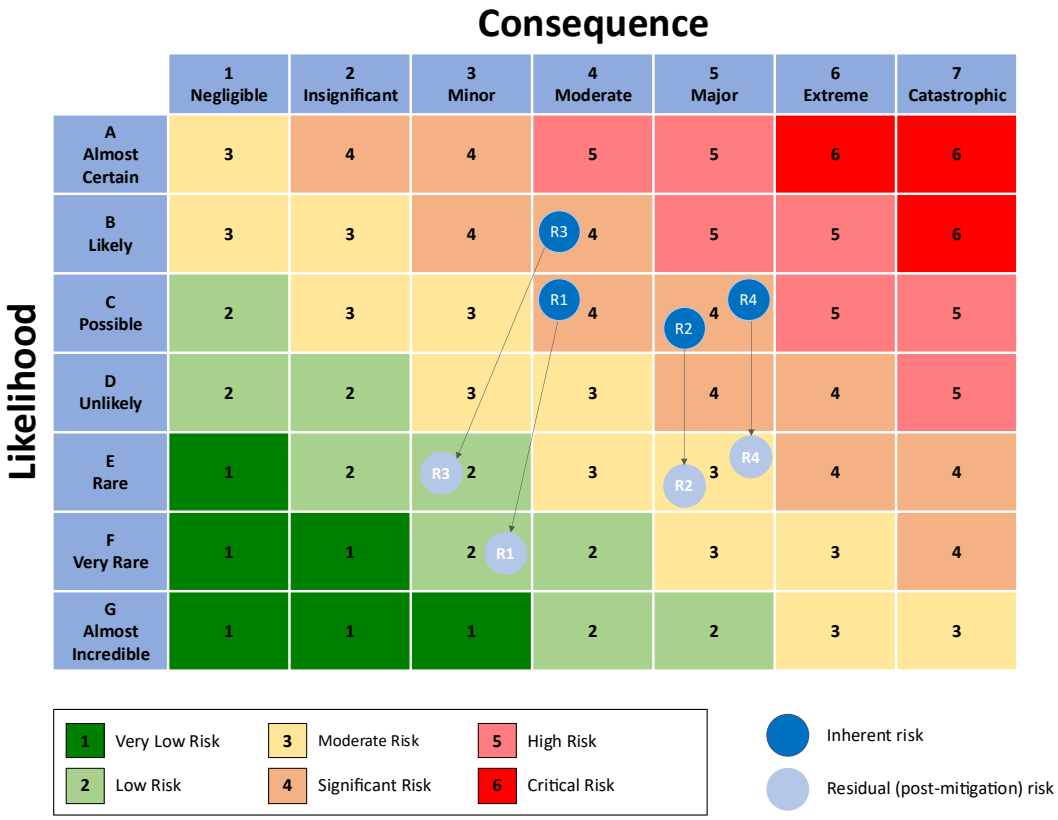

Figure 4: Recommended Option (Existing EAM Systems Improvement) Risk Mitigation Matrix

3.2.5 Recommended Option – Benefits

This recommended option enables benefits as summarised in Table 11 below.

Benefit Description	Benefit Value
B1. System sustainability and extensibility benefit Powerlink will retain access to the supported versions of all asset management and delivery systems (including SAP, Field Work Automation, Ratings and Configuration Management), thereby ensuring the organisation's core asset, works, maintenance and delivery data remains secure and available.	**Non-Financial** **Risk Mitigation** See mitigation of inherent risks as summarised in Table 10.

Benefit Description	Benefit Value
B2. Asset information strategy enablement benefit Enablement of Powerlink's asset information management strategy, including through: ▪ Application of consistent asset information model standards ▪ Optimised asset information systems (including transition to utilise SAP's current generation of EAM functionality and features) ▪ Asset data governance improvement ▪ Asset analytics improvement and extensibility ▪ Improvements in ratings data management, enabling effectiveness in asset risk mitigation and network capacity management	**Non-Financial** **Strategic Contribution and Business Insight** Contributes to delivery of Powerlink's Asset Information Strategy and improves asset management business insight to enable continuous improvement of asset management practices and performance.
B3. Asset data quality improvement and assurance benefit With direct pre-population with existing SAP asset data, and application of validation rules consistent with the updated asset information model, Powerlink will progressively improve asset data quality and mitigate operational risk.	**Non-Financial** **Risk Mitigation and Safety Management** See mitigation of inherent risks as summarised in Table 10.
B4. Supply chain management effectiveness benefit Consolidating Powerlink's systems and datastores based on a modern SAP configuration with associated workflows and analytics, is an enabler of supply chain management sustainability and effectiveness, including contributions to the following business improvement areas: ▪ Timely asset provision – Improved materials planning and inventory management for timely provision of critical equipment and spares for asset maintenance. Seamless data flow from procurement to project execution will also ensure materials and services are aligned with project schedules. ▪ Streamlined Sourcing Processes – Automated workflows and supplier integration for reduced lead times, in alignment with contemporary strategic sourcing practices. ▪ Improved Data Accuracy and Governance – Standardised and centralised master data management (via SAP MDG) ensures consistent, validated data across supply chain operations, reducing errors and duplication. ▪ Near Real-Time Operational Visibility – Integrated dashboards and analytics to provide up-to-date information regarding contracts, inventory and logistics status. ▪ Mobile Workforce Enablement – SAP Fiori and Field Automation enabling field and warehouse staff to access and update supply chain data on-site. ▪ Inventory Management Improved – Enhanced forecasting and demand planning can reduce stock holdings and shortages, minimise	**Indirect Financial** **Operational Efficiency** Contributor towards Powerlink portfolio delivery efficiency **Indirect Financial** **Avoided Costs** Avoidance of costs to rework existing off-system supply chain management tools and interfaces Contributor to reduction in carrying value of inventory on balance sheet Contributor to avoidance of warehouse expansion or extended use of third party logistics

Benefit Description	Benefit Value
instances of materials aging, and avoid the need for warehouse expansion or extended use of third party logistics. ▪ Better Project Alignment – Seamless data flow from procurement to project execution, ensuring materials and services are aligned with project timelines and budgets.	

Table 11: Recommended Option (Existing EAM Systems Improvement) Benefits

3.3 Option 2: Alternative Option (EAM Real Time Digital Twin)

This Alternative Option (EAM Real Time Digital Twin) describes an alternative investment path to address the business and technical drivers described in section 2.1 and the inherent risks described in section 2.2, as described below.

3.3.1 Alternative Option – Scope Description

This alternative option would transition Powerlink from SAP-centric asset management, and transition to an EAM Real Time Digital Twin solution, as a broader digital transformation of Powerlink's electricity asset management and operations.

The EAM Real Time Digital Twin would maintain a dynamic, virtual representation of Powerlink's asset base including substation primary and secondary systems, lines, telecommunications and other assets. The target system would aim to integrate corporate data mastered in SAP with operational data from the Advance Energy Management System (AEMS), IoT sensor data and spatial GIS layers. The solution would be hosted within a secure cloud or hybrid computing environment, to enable continuous monitoring, predictive analytics and simulation capabilities to support asset lifecycle management, operational decision-making, and strategic planning.

Unlike conventional EAM systems that rely on static records and scheduled maintenance, the EAM Real Time Digital Twin would maintain a rolling view of historical, current and planned asset states, to enable continuously variable predictive maintenance strategies thereby improving service reliability, extending asset lives, and mitigating operational risk.

The EAM Real Time Digital Twin would also automate asset workflows and enhance integration with enterprise systems, enabling more accurate asset planning, investment prioritisation and operational execution.

To ensure seamless enterprise-wide operability, the EAM Real Time Digital Twin must be integrated and synchronised with the SAP ERP system. This integration would allow for real-time alignment between asset condition data and financial, sourcing and work order management processes. It would also enable automated SAP updates to improve asset performance insights, support "closed loop maintenance planning" practices, and to ensure consistency across operational and financial reporting.

The solution would build on SAP to further enable improved supply chain management, including through simulation of inventory demand models, and use of AI to forecast and model supply chain risks. Automated materials handling and intelligent fulfillment would also be deployed in our warehouses, optimising materials management effectiveness and minimising project lead times.

Compliance with the BIM ISO 19650 standard and integration with the GIS spatial platform would enhance the effectiveness of the EAM Real Time Digital Twin, to support complex coordination across engineering and construction disciplines (including substation primary and secondary systems design, civil engineering design, transmission lines design, construction management and others).

The EAM Real Time Digital Twin would be a significant "foundation platform" for Powerlink, representing an investment in future business agility.

3.3.2 Alternative Option – Alignment with Investment Drivers

The extent to which the Alternative Option addresses (or does not address) the identified investment drivers is summarised in Table 3 below (over page).

Alignment with Investment Drivers		
Asset Information Continuous Improvement Drivers		
Investment driver	**Extent addressed through this Alternative Option**	
Consistent Asset Information Model Standards	✓	Powerlink's asset information model would be revised and optimised, with comprehensive asset data capture standards for both static and dynamic asset data classes (as per "Option 1: Recommended Option") however these changes would be configured and implemented within the EAM Real Time Digital Twin, with integration to enable a selected use of capabilities inherent in SAP.
Optimised Asset Information Systems and Processes	✓	Powerlink's asset management systems and data (including SAP, Field Work Automation, Ratings, Configuration Management and Supply Chain Management) would be optimised, improved or renewed, to enable asset management continuous improvement and effectiveness – partly through the EAM Real Time Digital Twin, and partly through selected enhancement or extension of other existing systems.
Data Governance Improvement	✓	Asset data governance would be revised and improved, with clear definition of asset data stewardship responsibilities and end-to-end asset data quality assurance practices (as per "Option 1: Recommended Option").
Asset Analytics and Decision Support	✓	Asset analytics would be enabled either through the EAM Real Time Digital Twin, through the corporate Data Lake, or through integration or synchronisation with SAP – in alignment with the asset management strategy. The EAM Real Time Digital Twin would enable best practice utilisation of emerging AI, machine learning and pattern recognition capabilities for efficient risk and reliability modelling, and for future predictive maintenance.
Technology Sustainability and Extensibility Drivers		
Investment driver	**Extent addressed through this Alternative Option**	
SAP EAM Transition	PARTIAL	While this option would not focus on use of SAP's modern EAM capabilities (building on the existing S/4HANA PM implementation), it would achieve similar outcomes through the capabilities of the EAM Real Time Digital Twin.
Manual Asset Data Validation	✓	Powerlink would retire the legacy manual asset data validation processes, to be replaced either through a mobile facility providing direct access to the EAM Real Time Digital Twin, or through add-on direct asset data access to SAP.
Ratings and Configuration Datastores	✓	Network and equipment ratings and configuration information would transition to sustainable storage and management using the EAM Real Time Digital Twin in synchronisation with SAP, and with integration to the Digital Engineering CDE and Objective EDRMS.

Supply Chain Management Practices	✓	A robust, scalable supply chain management platform would be established to address existing challenges, including through improvements in master data governance, inventory demand forecasting, supplier relationship management, mobile access and system usability – with the added advantage of EAM Real Time Digital Twin visualisation and advanced AI portfolio analytics.

Table 12: Alternative Option (EAM Real Time Digital Twin) Alignment with Investment Drivers

3.3.3 Alternative Option – Assumptions

The following assumptions are made for this Alternative Option (EAM Real Time Digital Twin) scenario:

- To achieve the planned outcomes for Field Automation, Supply Chain Management, Multi-Environment and External Integration, and Digital Engineering Construction Enablement, the costs are assumed to be the same as those calculated for Initiatives 2, 3, 4 and 5 as described in "Option 1: Recommended Option" (see section 3.2.3).
- Furthermore, to deliver the proposed EAM Real Time Digital Twin, it is assumed that costs equivalent to those of Initiative 1 EAM System & Data Integration in "Option 1: Recommended Option" would apply, plus a further $15M to establish the foundational Real Time Digital Twin platform and system synchronisation (i.e. the mid-point in an estimated $12-18M cost range).
- On that basis, Table 13 summarises the total combined cost forecast for this Alternative Option.

EAM Initiative Totals

FY27 Real Terms	Capex	Project Opex	Project Totals
Labour	[redacted]	[redacted]	[redacted]
Vendors	-	[redacted]	[redacted]
Software	-	[redacted]	[redacted]
Infrastructure	-	[redacted]	[redacted]
Total	$1.52M	$38.70M	**$40.22M**

Table 13: Phase and Cost Breakdown – Alternative Option Total Combined Investment Cost Forecast

3.3.4 Alternative Option – Risk Mitigation

This recommended option mitigates the existing inherent risks (as described in Table 1 on page 11) such that the residual risks range from 2 – Low to 3 – Moderate as summarised below.

Note: While this Alternative Option results in a residual risk level similar to the Recommended option (i.e. Low to Moderate), the increased technical and business transformation complexity of the Alternative Option represents a higher IT Project Delivery risk.

Inherent Risk	Inherent Risk Rating	Recommended Option Mitigation Controls	Residual Likelihood	Residual Consequence	Residual Risk Rating
Risk R1	**4 – Significant**	Powerlink's asset	**F – Very Rare**	**3 – Minor**	**2 – Low**

Inherent Risk	Inherent Risk Rating	Recommended Option Mitigation Controls	Residual Likelihood	Residual Consequence	Residual Risk Rating
System Supportability, Sustainability and Extensibility Risk Risk that existing systems fall out of vendor support, rendering software patches and security improvements unavailable. Unsupported systems also limit the opportunity for business continuous improvement, or necessitate increased reliance on manual processes and ad hoc workarounds (e.g. spreadsheets, macros and manual data transfers).		management and delivery systems would be optimised through extension to the EAM Real Time Digital Twin, to enable asset management continuous improvement and effectiveness.	With the proposed improvement investments, Powerlink's asset management and delivery systems will be supportable, sustainable and extensible on an ongoing basis.	The nature of risk consequence is unchanged, however due to the proposed investment, the significance of the potential risk consequence is lower than the inherent level.	
Risk R2 **Asset Data Quality Risk** Use of manual data capture validation places the accuracy and completeness of important asset data at risk, and limits the organisation's planned drive for Asset Information Improvement.	**4 – Significant**	Powerlink will retire the legacy manual asset data capture validation, to be replaced either through a mobile facility providing direct access to the EAM Real Time Digital Twin, or through add-on direct asset data access to SAP.	**E – Rare** With the proposed improvement, including direct SAP data access and validation, the chances of risk realisation are lower than the inherent level, but some chance of error (particularly in historical data) remains possible.	**5 – Major** Although the likelihood of this risk is lower, the consequence of it eventuating is unchanged.	**3 – Moderate**

Inherent Risk	Inherent Risk Rating	Recommended Option Mitigation Controls	Residual Likelihood	Residual Consequence	Residual Risk Rating
Risk R3 **Supply Chain Management Effectiveness Risk** Risk of supply chain management ineffectiveness, through reliance on fragmented systems and processes, with dependencies on off-system data sources lacking integration and consistent data governance.	**4 – Significant**	The proposed investment consolidates Powerlink's supply chain management systems and datastores based on a modern SAP configuration extended for end-to-end asset management with the EAM Real Time Digital Twin, with associated workflows and analytics, thereby mitigating risks associated with heavily manual and non-standardised practices. The investment will also address the organisation's legacy supply chain master data management practices.	**E – Rare** With the proposed improvement investment, supply chain processes will be consistently managed using modern SAP configuration and practices.	**3 – Minor** The nature of risk consequence is unchanged, however due to the proposed investment, the significance of the potential risk consequence is lower than the inherent level.	**2 – Low**
Risk R4 **Field Asset Data Risk** Risk of ineffective or inaccurate data provision to field work crews, or ineffective use of work crews in the capture of asset measurements and condition information.	**4 – Significant**	The proposed investment will provide field crews with a consolidated set of asset information directly applicable to their work tasks including equipment specifications, maintenance histories, Digital Engineering 3D CAD drawings, and safety risk information (e.g. asbestos, chemical and other site risk details). The updated platform will also provide field access to timely asset configuration data, online equipment maintenance histories, and enable near real-time asset measurement point condition data capture.	**E – Rare** With the proposed improvement, including direct SAP data access and validation, and access to curated information specific to the field task, the likelihood of the risk eventuating is materially lower.	**5 – Major** Although the likelihood of this risk is lower, the consequence of it eventuating is unchanged.	**3 – Moderate**

Table 14: Alternative Option (EAM Real Time Digital Twin) Mitigation of Inherent Risks

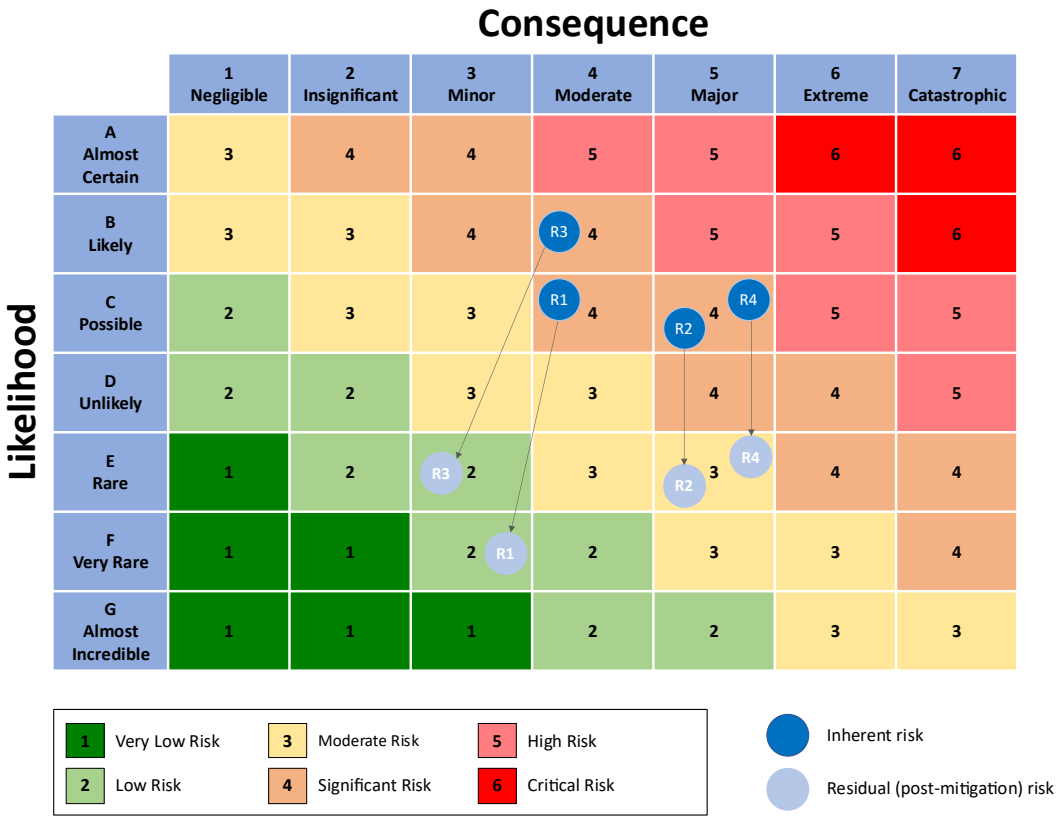

Figure 5: Alternative Option (EAM Real Time Digital Twin) Risk Mitigation Matrix

3.3.5 Alternative Option – Benefits

This Alternative Option enables benefits as summarised in Table 15 below.

Benefit Description	Benefit Value
B1. System sustainability and extensibility benefit Powerlink will retain access to supported versions of all asset management and delivery systems (including the new Digital Twin, Field Work Automation, Ratings and Configuration Management), thereby ensuring the organisation's core asset, works, maintenance and delivery data remains secure and available.	**Non-Financial Risk Mitigation** See mitigation of inherent risks as summarised in Table 14.

Benefit Description	Benefit Value
B2. Asset information strategy enablement benefit Enablement of Powerlink's asset information management strategy, including through: ▪ Application of consistent asset information model standards ▪ Optimised asset information systems (including transition to utilise the EAM Real Time Digital Twin integrated with SAP) ▪ Asset data governance improvement ▪ Asset analytics improvement and extensibility ▪ Improvements in ratings data management, enabling effectiveness in asset risk mitigation and network capacity management	**Non-Financial** **Strategic Contribution and Business Insight** Contributes to delivery of Powerlink's Asset Information Strategy and improves asset management business insight to enable continuous improvement is asset management practices and performance
B3. Asset data quality improvement and assurance benefit Superseding of legacy manual asset data capture validation, for replacement with EAM Real Time Digital Twin and/or SAP direct asset data access capability for use in the field and in the back office. With direct pre-population of existing asset data, and application of validation rules consistent with the updated asset information model, Powerlink will progressively improve asset data quality and mitigate operational risk.	**Non-Financial** **Risk Mitigation and Safety Management** See mitigation of inherent risks as summarised in Table 14.
B4. Supply chain management effectiveness benefit Consolidating Powerlink's systems and datastores based on a modern SAP configuration with associated workflows and analytics, is an enabler of supply chain management sustainability and effectiveness, including contributions to the following business improvement areas: ▪ Timely asset provision – Improved materials planning and inventory management for timely provision of critical equipment and spares for asset maintenance. Seamless data flow from procurement to project execution will also ensures materials and services are aligned with project schedules. ▪ Streamlined Sourcing Processes – Automated workflows and supplier integration for reduced lead times, in alignment with contemporary strategic sourcing practices. ▪ Improved Data Accuracy and Governance – Standardised and centralised master data management (via SAP MDG) ensures consistent, validated data across supply chain operations, reducing errors and duplication. ▪ Real-Time Operational Visibility – Integrated dashboards and analytics to provide up-to-date information regarding contracts, inventory and logistics status. ▪ Mobile Workforce Enablement – SAP Fiori and Field Automation enabling field and warehouse staff to access and update supply chain	**Indirect Financial** **Operational Efficiency** Contributor towards Powerlink portfolio delivery efficiency **Indirect Financial** **Avoided Costs** Avoidance of costs to rework existing off-system supply chain management tools and interfaces Contributor to reduction in carrying value of inventory on balance sheet Contributor to avoidance of warehouse expansion or extended use of third party logistics

Benefit Description	Benefit Value
data on-site. ▪ Inventory Management Improved – Enhanced forecasting and demand planning can reduce stock holdings and shortages, minimise instances of materials aging, and avoid the need for warehouse expansion or extended use of third party logistics. ▪ Better Project Alignment – Seamless data flow from procurement to project execution ensures materials and services are aligned with project timelines and budgets.	

Table 15: Alternative Option (EAM Real Time Digital Twin) Benefits

3.4 Base Case: Counterfactual

This Base Case summarises the counterfactual scenario that would eventuate if Powerlink does not proceed with investment in either the Recommended Option or the Alternative Option to address the business and technical drivers described in section 2.1 and the inherent risks described in section 2.2.

3.4.1 Base Case – Alignment with Investment Drivers

The extent to which the Base Case scenario addresses (or does not address) the identified investment drivers is summarised in Table 16 below.

Alignment with Investment Drivers		
Asset Information Continuous Improvement Drivers		
Investment driver	**Extent addressed through this Base Case (Counterfactual)**	
Consistent Asset Information Model Standards	✗	Powerlink's asset information model will not be revised or optimised.
Optimised Asset Information Systems and Processes	✗	Powerlink's asset management and delivery systems (including SAP and Field Work Automation) will not be optimised or improved in support of the asset management strategy.
Data Governance Improvement	✗	The asset data governance stewardship model will not be revised or improved.
Asset Analytics and Decision Support	✗	Asset analytics will not be improved or further alignment with the asset management strategy.
Technology Sustainability and Extensibility Drivers		
Investment driver	**Extent addressed through this Base Case (Counterfactual)**	
SAP EAM Transition	✗	Powerlink will continue to operate the existing SAP Plant Maintenance (PM) facility using existing configurations, without access or extensibility to leverage SAP's modern EAM offerings.
Manual Asset Data Validation	✗	Powerlink will continue to use manual asset data capture validation that lack pre-population and real-time validation.
Ratings and Configuration Datastores	✗	Network and equipment ratings and configuration information will not be integrated, including requiring continued use of manual configuration data capture forms stored in an end-of-life document repository. Alternative temporary storage may be developed in the meantime.
Supply Chain Management Practices	✗	Powerlink will continue to rely on a fragmented mix of systems, tools, and processes to support its core supply chain management functions. This includes processes supporting supply planning, sourcing, contract management, materials and inventory control, warehousing, transport and logistics. Many of these processes are heavily manual, often

		dependent on off-system data sources that lack integration and consistent data governance.

Table 16: Base Case (Counterfactual) Alignment with Investment Drivers

3.4.2 Base Case – Assumptions

The following assumptions are made for this Base Case (Counterfactual) scenario:

- No targeted investments will be made in asset management systems or related process improvements.
- Powerlink will continue to operate the existing SAP Plant Maintenance (PM) facility with no use of the modern SAP EAM features.
- Interim work-around actions will be taken, to enable ad hoc extensions as assumed below. These work-arounds may take the form of additional custom spreadsheet developments, macros, stand-alone databases, custom inter-system synchronisation interfaces and manual processes.
    a) Interim ratings database workaround(s) – at an assumed interim cost of $1.5M over the regulatory period
    b) Interim configuration management database workaround(s) – at an assumed interim cost of $1.5M over the regulatory period
    c) Manual data capture validation critical improvements – at an assumed interim cost of $750,000 over the regulatory period
    d) Interim interfacing with of Supply Chain Management tools for synchronisation or data aggregation purposes – at an assumed interim cost of $750,000 over the regulatory period
    e) Other ad hoc system customisation and urgent data rectification works – at an assumed interim cost of $750,000 over the regulatory period

  The above work-arounds are reactive in nature, and therefore do not represent long-term investments in business sustainability.
- Although this Base Case (Counterfactual) scenario does not make targeted investments in asset management systems or related process improvements, this does not avoid the need for investment indefinitely into the future. Therefore, this Base Case (Counterfactual) scenario assumes that the investment proposed in “Option 1 (Recommended)” would still be undertaken approximately 4 years later (i.e. delivering in the following regulatory period), at the equivalent cost in real terms.

3.4.3 Base Case – Risk Mitigation

As no material actions are taken in the base case to mitigate the existing inherent risks (as described in Table 1 on page 11), the residual risks remain unchanged, as depicted in Figure 6 below (over page).

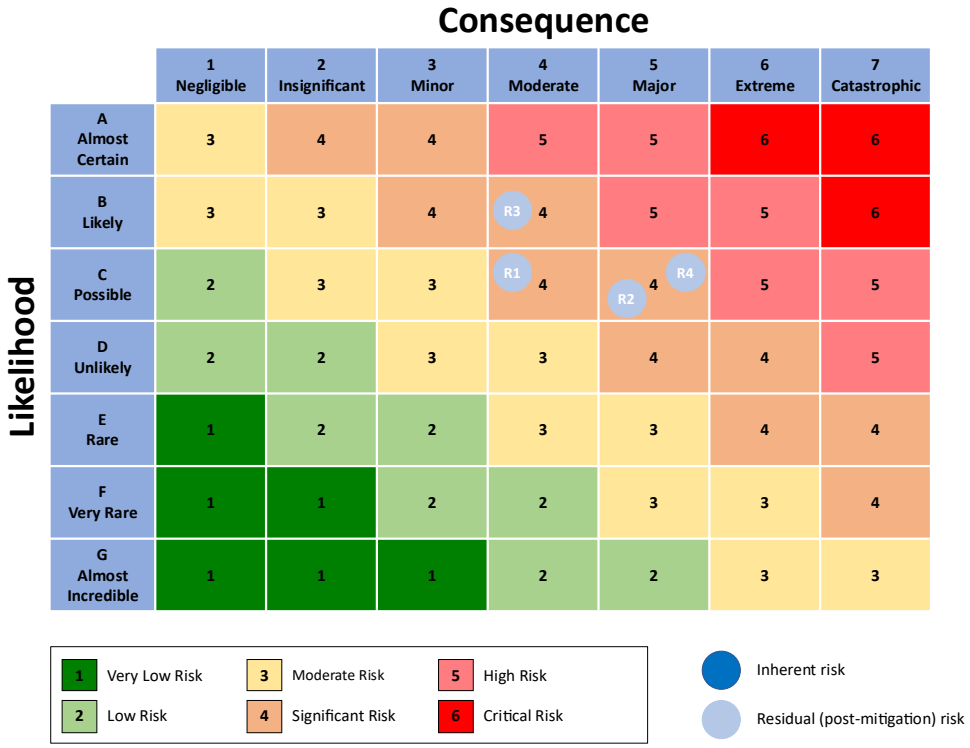

Figure 6: Base Case (Counterfactual) Risk Mitigation Matrix

3.5 Option Comparison

Table 17 below compares the extent to which the options (including the Base Case) address the identified investment drivers, and also provides the resultant Net Present Value (NPV) for each option over a 10-year analysis period. As depicted in the table, Option 1 addresses all of the identified investment drivers and is the recommended option.

Alignment with Investment Drivers			
Investment driver	**Option 1: Recommended Option (Existing EAM Systems Improvement)**	**Option 2: Alternative Option (EAM Real Time Digital Twin)**	**Base Case (Counterfactual)**
Consistent Asset Information Model Standards	✓	✓	✗
Optimised Asset Information Systems and Processes	✓	✓	✗
Data Governance Improvement	✓	✓	✗
Asset Analytics and Decision Support	✓	✓	✗
SAP EAM Transition	✓	PARTIAL	✗
Manual Asset Data Validation	✓	✓	✗
Ratings and Configuration Datastores	✓	✓	✗
Supply Chain Management Practices	✓	✓	✗
NPV	**-$15.7M**	**-$25.2M**	**-$16.1M**

Table 17: Options Comparison

Comparison conclusion

Option 1 “Existing EAM Systems Improvement” is recommended on that basis that it:

(a) Addresses all the identified business and technical investment drivers, and

(b) Represents the best NPV investment over the analysis period.

Option 2 “EAM Real Time Digital Twin” is also a suitable response to the investment drivers, but the higher cost of this transformational alternative option likely outweighs the possible incremental future benefits that may be enabled.

4. Other Considerations

4.1 Governance

Funding for the EAM investment proposed through this business case is ultimately governed by the Digital Technology Executive Committee (DTEC) which has the accountability for delivery of the IT investment portfolio. DTEC oversees the management of IT programs and projects through an assigned Program Executive.

The Program Executive is accountable for successful delivery of the program, and achievement of planned program outcomes. The Program Executive is supported by Senior Suppliers, Senior Users and the Program Director in delivery of the program.

The EAM Program Executive will chair a Program Board, with a charter to monitor the progress of the program, to address escalated delivery issues and to support coordination of inter-program dependencies. This governance structure provides ongoing oversight into the running of both the program and the individual constituent initiatives.

4.2 Delivery Schedule

Figure 7 below depicts the proposed high-level delivery schedule, comprising the five coordinated initiatives as described in section 3.2.

Prior to execution of the program, a detailed Program Management Plan (PMP) will be established with an accompanying program schedule.

Investment Program	2027-32 Regulatory Control Period					
2026/27 $M Real	2027/28	2028/29	2029/30	2030/31	2031/32	5yr Total
Enterprise Asset Management	EAM System & Data Integration [redacted]	Field Automation [redacted] Supply Chain Management [redacted]		Multi-environment & Ext Integration [redacted] Digital Engineering Construction Enablement [redacted]		$25.2M

Figure 7: High-level Delivery Schedule