

Investment Evaluation Summary

Project name:	Market Systems - MDMS Replacement
Department	F&BS
Investment Category	Information technology (support the business) non-network
Network	Shared
Project ND number / work category:	ITC
Project ZoNe location:	http://projectzone.tnad.tasnetworks.com.au/it-program/ITRR19/Document%20Repository/Deliverables/IES/TN_IES_CONFID_IT_Market_Systems_MDMS_Replacement_1897.docx
Document number:	1897
Version number:	1
Date:	31/07/2017
Project initiation approval reference:	R0000730995

Preferred Option:	Option 1 - Transfer functionality into the ERP									
Estimate (preferred option – base dollars):	[REDACTED]									
expenditure profile	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29
Capex				[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			

Sign-offs (in support of the recommended option)			
Project Initiator:	[REDACTED]	Date	22/06/2017
Leader: (Endorsement)	[REDACTED]	Date	22/06/2017
Leader or General manager noting delegation levels. (Approval) ¹	[REDACTED]	Date	22/06/2017

¹ Approval based on delegation level.

1. Overview

1.1 Background

The Meter Data Management System (MDMS) is one of TasNetworks' business critical applications: it is the primary component in the systems that support market services, enable NEM regulatory obligations to be met and [REDACTED]

[REDACTED] is derived through data managed by the MDMS.

The MDMS is responsible for:

- Maintaining Installation Details for all 280,000 distribution connection points including unmetered supplies. Installation details include:



- Generation and storage of consumption data for unmetered supplies (streetlights, traffic lights, etc.).
- Metering configuration details for all distribution connection points (500,000 meters).
- Reading rounds and interface to Meter Reading System.
- Validation, substitution and storage of meter reading / consumption data for all basic meters.

The above data supports various TasNetworks processes and downstream systems including service order processing, customer facing processes, distribution billing and market interfaces. It also supports the Retail billing of customers via the meter data collected, validated / substituted and supplied to Retailers.

TasNetworks is the current Meter Data Provider (MDP) for [REDACTED] of Tasmanian customer base (Approximately [REDACTED] meter registers for [REDACTED] customers) and will likely remain so for 20 years as the rate of movement to another MDP using advanced meters with a new and replacement approach is estimated to be around [REDACTED]. At the end of the replacement systems expected life of 10 years, TasNetworks will likely still be responsible for [REDACTED] of the basic meters.

TasNetworks' Technology Strategy seeks to leverage economies of scale, lower cost and risk profiles, provide a higher return to shareholders and increase customer satisfaction through lower market pricing and innovative services and solutions.

In order to achieve same, TasNetworks aims to simplify the IT environment through consolidation and integration of applications, infrastructure and vendors to enable the lowest cost to manage and support IT and deliver corporate and customer expectations.

This is increasingly important for the business as the legal and regulatory environment in which TasNetworks operates continues to grow in complexity as a result of the Transend and Aurora Distribution merger. Operating with systems that do not integrate with each another results in inefficiencies and frustrations for staff.

As a result of legislative amendments, increased compliance requirements and more proactive regulatory power and oversight, operating with an Enterprise Resource Planning system (ERP) which does not integrate with the MDMS will not be a preferred option for TasNetworks moving forward.

1.2 Problem Definition

The primary driver for this initiative is that the asset is at end of life. The current system was first commissioned in March 2006 and has gone through various modifications since, primarily due to regulatory changes. The 1990s technology used by the system is very outdated by today's standards and does not provide contemporary features users expect causing increasing frustration and disengagement. At the planned go-live of this initiative, the current system will be 18 years old, and the vendor has indicated that modifications to support regulatory changes may be difficult in the current technology at that time. Additionally, [REDACTED], violating one of our core IT principles that key systems shall remain healthy and supported. Not having a fully functional MDMS would severely impact the provision of services to our customers. This initiative has been deferred as long as possible.

Accordingly, the MDMS Replacement has come to the forefront in next reset period. In order to be efficient, prudent and compliant with respect to market data management services, TasNetworks has considered four options, including:

- Option 0: Do Nothing
- Option 1: Deploy a new ERP module and transfer functionality into the ERP
- Option 2: Upgrade the MDMS to a new version with the current vendor
- Option 3: Go to market and source a new vendor/product

As the IT environment has become considerably more complex, bespoke applications have resulted in increasing operating and maintenance costs. The current MDMS runs in parallel to other applications such as the Works Management and Outage Management systems. As TasNetworks aims to simplify the IT environment to adhere to the Technology Strategy, the MDMS needs to be integrated with the core ERP system. The result will be an increase in functionality, an efficient flow between various business functions and an overall system which is more prudent and easy to manage.

Option 1 will provide the best outcome with respect to integration and efficiency, while also responding to demands for increased mobility and functionality. Option 1 allows for consolidation with other modules in the ERP, and aligns with the company's vision of a central enterprise platform.

While Options 2 and 3 will solve the problem around the asset being at the end of its life, neither of these options will integrate business management capabilities and enable consolidation into a common platform. As the MDMS will ultimately need to be integrated with other core business functions, Options 2 and 3 are seen as a temporary fix rather than a long-term solution as they do not efficiently and effectively manage risks in the long run.

2. Customer needs and impacts

The MDMS system is pivotal to various processes that support customer outcomes:

- Allocates and registers the national identifier for every Tasmanian installation (NMI);
- Maintains installation details and informs the market operator and its participants;
- Maintains reading route information and is central to the reading process;
- Stores, validates and substitutes customer billing reads for basic customers;
- Maintains inventory and consumption records for unmetered supplies;
- Stores and maintains customer information used to ensure compliance with the National Electricity Customer Framework (NECF) obligations (e.g. Life Support etc.);
- Provides data, validation and supports completion of customer requested service orders (e.g. connections, reading and faults);
- Supports the provision of accurate and timely accounts to customers via their Retailer.

In addition, this system is critical for achieving [REDACTED], with TasNetworks customer management, billing systems and processes being dependent on the MDMS.

The proposed initiative replaces the current MDMS system through a transfer of functionality to the core ERP. MDMS functionality transferred to the ERP positively impacts customers in several ways.

- Effective Market Data Management ensures faster, more accurate access to customer information and history to allow standard service delivery and higher customer satisfaction;
- Customers will be provided with high-quality service due to effective flow of information across all business functions, creating better customer interactions and improved relationships.

3. Corporate alignment

3.1 Strategic objectives

The following table highlights how the initiative will assist in achieving TasNetworks' Strategy for 2025.

Table 1 Strategic goals relevant to this project

Strategic Goal	How this initiative will address the strategic goal
Business Productivity – <i>“Optimise our program of work and emergency response capability delivering on our promise”</i>	<ul style="list-style-type: none"> TasNetworks will provide the business with the business applications it needs to operate efficiently and effectively. User interfaces will be contemporary and easy to use, providing a satisfying end user experience for the business that supports improvement to team member engagement. Impact of change to the business is primarily restricted to the market services group.
Network Capability – <i>“Our network continues to meet demand and power system security systems requirements while accommodating the changing use of our network”</i>	<p>This initiative supports key processes in the network, in that it [REDACTED]</p> <p>[REDACTED] This information is vital to downstream processes such as Outage and Restoration Management.</p>
Voice of the Customer – <i>“Delivering valued services”</i>	<ul style="list-style-type: none"> This initiative supports this goal by ensuring customer records are maintained and available to all customer facing processes and touchpoints, which support our goals of ‘demonstrating we care and make our customer experience easier’. The TasNetworks' MDMS will remain fit for purpose and meet business requirements. This initiative supports other initiatives, including ‘Digital Customer Engagement’ (Phases 1 and 2), ‘ORM 3’ and ‘Enterprise CRM’. TasNetworks will maintain its position as fully compliant with all regulatory requirements and applicable industry standards.
Changing Role of the Grid – <i>“Facilitate customer led technologies and provide complementary services”</i>	<p>This initiative will enable TasNetworks to focus on capitalising on opportunities through adopting proven technologies in network support systems.</p>
Culture and Capability Program – <i>“Value chain optimisation and</i>	<ul style="list-style-type: none"> This solution will support TasNetworks processes by further optimising our value chain, and ensuring our

<i>change capability”</i>	<p>staff can work as efficiently and effectively as possible.</p> <ul style="list-style-type: none"> The use of internal resources to apply this solution will maximise the opportunity of corporate knowledge being retained after project completion.
<i>Business Transformation – “Realise our business transformation”</i>	The MDMS as a core system is pivotal to many transformational initiatives. Updating the system to contemporary technologies ensures it is adaptable to the needs of emerging and transformational initiatives.

3.2 Performance objective

This project will help to achieve the customer and business performance objectives in TasNetworks Corporate Plan 2016-17, and aligns with the 2019 to 2024 regulatory period. The relevant performance measures are presented in Table 2.

Table 2 Performance objectives relevant to this project.

Performance Category	Measure	Project objective
Customers	Call answering – Service Centre	The MDMS is a key component to many processes that support our customers. Any failure in this system will lead to an increase in calls to our Service Centre.
Customers	[REDACTED]	[REDACTED]
Customers	Customer satisfaction	The MDMS is a key component to many processes that support our customers.
Customers	Customer net promoter score	Ensure delivery of services that drive the net promoter score.
Customers	Meter data provision	The MDMS is central to the processes that provide quality meter data to market participants for 290,000 customers. If this system fails or experiences any issues, the business will fail these measures.
Customers	AEMO ; <ul style="list-style-type: none"> - MDP compliance measures - DNSP/LNSP compliance measures - MPB compliance measures 	The MDMS is central to the processes that provide quality meter data to market participants. The performance of the MDMS directly affects our ability to meet the AEMO compliance measures.
People	Employee turnover	User interfaces will be contemporary and easy to use, providing a satisfying end user experience for the staff.

Shareholder Value	<ul style="list-style-type: none"> - Profit after tax - Operating cash flow 	Any system failure will result in impact to Distribution Monthly Billing, which will in turn affect TasNetworks' revenue targets and cash flow.
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3.3 Risk objectives

The corporate plan identifies a number of business risks outlined in the TasNetworks Risk Framework², which details the level of risk the business finds acceptable in each category (Safety, Environmental, Financial, Regulatory, Legal and Compliance, Customers, Assets, Reputation and People).

This initiative addresses Compliance, Financial, Customer, People and Safety risks, of which TasNetworks has [REDACTED] to [REDACTED] appetite. Those risks, which will be impacted by this project, are presented in Table 3.

Table 3 Risks impacted by this project

Risk ID	Risk category	Risk	Impact	Likelihood	Consequence	Risk Rating
ITR-001	Regulatory Compliance	TasNetworks may cease to remain compliant due to inability to make modifications to accommodate regulatory change.	Damage to relationships with market operator, AER, Retailers and customers. Possible fines.	Possible	Major	High
ITR-002	Regulatory Compliance	[REDACTED] resulting in non-conformance with MDP, LNSP obligations.	Damage to relationships with market operator, AER, Retailers and customers. Possible fines and/or removal of license.	Possible	Major	High
ITR-003	Regulatory Compliance	If not maintained in a healthy supported state, the current system may not be able to meet service-level agreement (SLA) / timeframe obligations.	Damage to relationships with market operator, AER, Retailers and customers. Possible fines.	Possible	Moderate	Medium
ITR-004	Customer	Issues impact on relationship with retailers and customers.	Increase in disputes and complaints.	Possible	Minor	Low
ITR-005	Customer & People	[REDACTED]	Customer Retail Bills affected.	Possible	Moderate	Medium

² <http://reclink/R0000238142>.

ITR-006	Financial	If the system is not maintained in accordance with relevant changes, TasNetworks may face NECF breaches and fines.	Additional costs.	Possible	Moderate	Medium
ITR-007	Financial	[REDACTED]	[REDACTED]	Possible	Major	High
ITR-008	Financial	If not maintained in a healthy supported state, the current system may lead to inefficiencies in market processes.	Need for additional FTE resources to compensate process inefficiency.	Possible	Major	High
ITR-009	Financial	Market non-compliance may lead to high level of scrutiny during market audits.	Business disruption due to resources being tied up with auditing activities.	Possible	Negligible	Low
ITR-011	People	If not maintained in a healthy supported state, the current system may suffer failure resulting in processes failing.	May result in absenteeism, disengagement.	Possible	Major	High
ITR-012	Safety	[REDACTED]	[REDACTED]	Possible	Major	High
ITR-124	Financial	[REDACTED]	[REDACTED]	Possible	Moderate	Medium
ITR-125	Reputation	If not maintained in a healthy supported state, the current system may suffer failure, which could lead to several issues, namely: market process issues [REDACTED] impact to Distribution Monthly Billing, non-compliance to regulatory, SLA and timeframe obligations.	Negative impacts on TasNetworks' operations, Customers and Retailers and non-compliance with regulatory obligations, if identified by external parties, could negatively impact TasNetworks' reputation.	Possible	Severe	High
ITR-010	Financial	Solution complexity results in unforeseen issues.	Additional costs exceed initial cost projection.	Possible	Major	High

ITR-155	Reputation	Solution does not achieve compliant processes.	TasNetworks reputation damaged as other NEM participants affected.	Possible	Severe	High
ITR-156	People / Process	Interfacing difficulties create less effective processes	Staff / resource requirements increase, morale decreases, engagement decreases.	Rare	Moderate	Low

4. Project objectives

The objective of this project is to replace the existing technology to maintain the function in a healthy and supported state.

5. Revenue Determination

N/A

6. Options analysis

6.1 Options considered

The following table lists the options considered.

Table 4 Options considered for this project

Option No.	Option description
0	Do Nothing
1	Deploy a new ERP module and transfer functionality into the ERP. Build interfaces to Market interface systems, Works Mgt. System and the Meter Reading System. (preferred option)
2	Upgrade MDMS to new version with current vendor. Repair interfaces to Works Mgt. and Meter Reading Systems. The new version would absorb functionality currently performed by Market Interface Systems.
3	Go to market and source new vendor / product. Build interfaces to Market interface systems, Works Mgt. System and the Meter Reading System.

Each option has been assessed with regard to the following criteria:

- 1. Solution effectiveness:** solution effectiveness is tested against the problem (detailed in section 1.2 titled “Problem Definition”);
- 2. Cost** (estimates used on the analysis have a level of accuracy of $\pm 30\%$ and do not include the 20% project contingency normally applied to this type of project);
- 3. Business impact:** the selected option will consider the level of change to TasNetworks environment (including during project implementation and post implementation);
- 4. Business Strategic alignment:** does the option fulfil the business objectives and current business initiatives (detailed in section 3 titled “Corporate Alignment”);
- 5. Information Technology Strategic alignment;**
- 6. Project complexity:** solutions have the minimum level of complexity needed to meet the business requirements;
- 7. Risk profile:** solutions will be in line with TasNetworks targets;
- 8. Compliance:** ability to achieve compliance. Solutions will be fully compliant with all regulatory requirements and applicable industry standards;
- 9. Time:** solutions will be implemented within a suitable timeframe to ensure compliance (where relevant), minimise disruption to the business and reduce the likelihood of project requirements becoming dated.

The following table compares the presented options with regard to the criteria above.

Table 5 Summary of Drivers

Driver	Option 0	Option 1	Option 2	Option 3
1. Solution effectiveness	Addresses few requirements	Addresses most requirements	Addresses some requirements	Addresses some requirements
2. Cost	High	Low	Low	High
3. Business Impact	High	Medium	Low	Medium
4. Business strategic alignment	Poor alignment	Good alignment	Partial alignment	Good alignment
5. IT strategic alignment	Poor alignment	Good alignment	Partial alignment	Poor alignment
6. Project complexity	N/A	Medium	Low	High
7. Risk profile	High	Medium	Low	Medium
8. Compliance	High	Easy	Moderate	Hard
9. Time	N/A	Moderate	Easy	Moderate

The table below shows the key for each rating.

Table 6 Drivers Rating Key

Driver	Rating 1 - Green	Rating 2 - Yellow	Rating 3 - Red
Solution effectiveness	Addresses most requirements	Addresses some requirements	Addresses few requirements
Cost	Low	Medium	High
Business Impact	Low	Medium	High
Business strategic alignment	Good alignment	Partial alignment	Poor alignment
IT strategic alignment	Good alignment	Partial alignment	Poor alignment
Project complexity	Low	Medium	High
Risk profile	Low	Medium	High
Compliance	Easy	Moderate	Hard
Time	Easy	Moderate	Hard

6.1.1 Option 0: Do Nothing

The option of 'Do Nothing' assesses the scenario where this initiative is not implemented.

Table 7 Option 0 – Scenario Assessment

Criteria	Advantages	Disadvantages
1. Solution effectiveness		If this initiative does not progress, the system will likely cease to be supported and healthy. This will severely impact its functionality, and might lead to system failure.
2. Cost	No initial Capex cost up front.	If, due to technology constraints, the system cannot be adapted to meet changes in the regulatory or NEM environment, Opex may be incurred through workarounds outside the system.
3. Business impact		<ul style="list-style-type: none"> No access to new base functions that could provide productivity and effectiveness improvements. <p>[REDACTED]</p> <p>[REDACTED]</p>
4. Business strategic alignment		<p>Option will not fulfil any of the strategic and performance objectives outlined in sections 3.1 and 3.2 because it:</p> <ul style="list-style-type: none"> Will not provide the business with the business applications it needs to operate efficiently and effectively. <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <ul style="list-style-type: none"> System will likely cease to be fit for purpose. System will increase the inefficiency of several market support processes, thus impacting TasNetworks operational performance. System will negatively impact on our Customers and the Retailers. <p>This could lead to functioning issues, potentially generating negative impact on our operations and ability to provide services to our customers.</p>
5. IT strategic alignment		Option not aligned with IT strategy because it will not fulfil the principle of maintaining systems in a healthy and supported state.
6. Project complexity	N/A	N/A

7. Risk profile		Please see section 3.3 titled “Risk Objectives”.
8. Compliance		
9. Time	N/A	N/A

6.1.2 Option 1: Transfer functionality into the ERP and replumb interfaces to Market Systems, Works Management System and Meter Reading System

The option of transferring the functionality into the Enterprise Resource Planning (ERP) and revising interfaces to Market Systems and Meter Reading System is the preferred option and its scenario assessment can be seen below. Further details are available in section 6.8 titled “Preferred option”.

Table 8 Option 1 – Scenario Assessment

Criteria	Advantages	Disadvantages
1. Solution effectiveness	It is considered that the combination of: <ul style="list-style-type: none"> - ERP Utility module; - ERP customisations and - Existing Market Interface systems will achieve the needs of the business.	The ERP module is generic to the utility industry and may not fully support the Australian NEM procedures, requiring customisations to the base product and retention of the current market interface system increasing complexity of the environment. Reporting systems will require rework.
2. Cost	Costs are higher than option 2 but lower cost than Option 3. The benefits to the business through MDMS functionality transferred to ERP and alignment with TasNetworks strategic goals justify the higher cost when compared to option 2.	Higher Cost than Option 2 The possible separation of responsibility between the ERP and current Market Interface Systems may incur higher customisation costs than Option 2, but likely lower than Option 3.
3. Business impact	The initiative is a phase of the ERP project required to achieve TasNetworks’ Technology Strategy. Until more modules in the ERP are integrated, full benefits are not being realised. This option will: <ul style="list-style-type: none"> • Result in contemporary systems resulting in satisfying end user experiences through effective and integrated flow of information across all business units. • Allow access to new functions offered in the base MDMS product. • With one source of accurate, real-time information, the transfer of MDMS functionality to the ERP will 	High volume processes will move to the ERP requiring complex process change for the business. Until ERP customer relationship management (CRM), and ERP Network Billing are implemented, full consolidation benefits are not realised.

	<p>reduce administrative and operational costs.</p> <ul style="list-style-type: none"> • Streamline processes, reporting and greater information access mobility once full consolidation of multiple components of the ERP. • Transfer of functionality of the MDMS to the ERP will provide better security for data / information without added barriers for staff as role-based security is easily managed. • Eliminate redundancies of non-centralized data management systems. 	
4. Business strategic alignment	<p>This option fulfils the strategic and performance objectives outlined in sections 3.1 and 3.2. Particularly in providing customer services.</p> <p>Post this MDMS initiative and once Network Billing and CRM are implemented in the future, the consolidation achieved will increase business efficiency & effectiveness.</p>	
5. IT strategic alignment	<p>By implementing a system that adequately supports the delivery of the market services and improves the efficiency in providing business functions, this option will align with the IT strategy:</p> <ul style="list-style-type: none"> • It will build upon an existing system – principle ‘reuse before buy’. • It will be designed to suit TasNetworks work practices and work processes so as to be as efficient and effective as possible without compromise. • It will be maintainable and supported locally. • It will allow consolidation of functions into the ERP system. • It will align with current IT infrastructure. • It will align with other IT road map initiatives. 	<p>Until ERP CRM and ERP Network Billing are implemented, full consolidation benefits are not realised.</p>
6. Project complexity		<p>Overall complexity rated High</p> <ul style="list-style-type: none"> • Medium level of customisations required for Australian NEM requirements. • Low complexity in ERP to Works Mgt.

		System as internal interface within product <ul style="list-style-type: none"> • High complexity in ERP to Market Interface System • Medium complexity in interface from ERP to Meter Reading Collection System • High complexity in data migration.
7. Risk profile	See Appendix B – Risk Comparison.	
8. Compliance	It is assumed that this option, either through out-of-the-box functionality or customisations, will achieve all compliance requirements.	Functionality provided by ERP may not meet NEM or TasNetworks requirements and modifications will need to be undertaken. ERP power of choice functions are only being deployed into one Australian DNSP. Modification may be required for TasNetworks.
9. Time		Less time effective compared to option 2.

6.1.3 Option 2: Upgrade to new version with current vendor

This option consists of upgrading the system to the new version of the existing solution and will involve a complete change in technology.

Table 9 Option 2 – Scenario Assessment

Criteria	Advantages	Disadvantages
1. Solution effectiveness	<p>This initiative may satisfy the business requirements with the least customisations to satisfy Australian NEM requirements due to its deployment into Australian NEM retail businesses. Customisations should be limited to the specific needs of a DNSP contrary to a financially responsible market participant (FRMP).</p> <p>It is considered that the combination of:</p> <ul style="list-style-type: none"> - The new version of existing product; - Product customisations <p>will achieve the needs of the business.</p>	<p>With all options linkages to Customer Process systems and reporting systems will require rework</p> <p>Should the MDMS continue to operate as a non-centralised system, as is proposed in Option 2, TasNetworks' will continue to incur high administrative and operational costs due to ineffective flow of information.</p>
2. Cost	Lower cost than Options 1 and 3.	
3. Business impact	Business impact will be lower when compared to options 1 and 3 because solution will consolidate end to end processes in a single system.	
4. Business strategic alignment	This option fulfils the strategic and performance objectives outlined in sections 3.1 and 3.2.	Sub-optimal business intelligence will hinder business process improvement, as TasNetworks will not realise the benefits of automated information management.
5. IT strategic alignment	By implementing a system that adequately supports the delivery of	Doesn't achieve any application consolidation with the ERP, however until

	<p>market services and improves the efficiency in providing business functions, this option will align with the IT strategy:</p> <p>It is designed to suit TasNetworks' work practices and work processes so as to be as efficient and effective as possible without compromise.</p> <ul style="list-style-type: none"> • It will be maintainable and supported locally. • It will align with current IT infrastructure. • It will achieve a level of consolidation as it will replace the current Market Interface System. • It will align with other IT road map initiatives. 	<p>ERP CRM, and ERP Network Billing are implemented, full consolidation benefits would not be realised. Disadvantages include;</p> <ul style="list-style-type: none"> • Analysis of billing data must be provided by alternate reporting systems incurring higher administrative and operational costs. • Visibility of all customer data must be provided by alternative means, increasing the cost of human resources. • Independent maintenance and support required for non-centralised MDMS, incurring higher costs.
6. Project complexity	<p>Overall complexity rated Low</p> <ul style="list-style-type: none"> • Low level of customisations required for Australian NEM requirements due to a long history of operating in the Australian Market and with TasNetworks. • Low complexity in MDMS to Works Mgt. System as internal interface within product. • Low complexity in interface from MDMS to Meter Reading Collection System as there is an existing interface. • Low complexity in data migration as done by existing product vendor as upgrade. 	
7. Risk profile	See Appendix B – Risk Comparison.	
8. Compliance	Product will already cover many NEM processes due to its Australian Distribution and Retail client base within NEM. I.e. Accredited MDP are using this product.	
9. Time	More time effective compared with options 1 and 3 because of existing relationship with vendors, no delay with RFP and the fact the project is an upgrade by a vendor with detailed knowledge of our current environment vs a new implementation.	

6.1.4 Option 3: Go to market and source new vendor

This option consists of releasing a Request for Proposal (RFP) to the market in order to select a vendor that meets our requirements for delivering a MDMS coupled with efforts to integrate with our existing market interface systems, meter reading and works mgt. systems.

Table 10 Option 3 – Scenario Assessment

Criteria	Advantages	Disadvantages
1. Solution effectiveness	It is assumed that TasNetworks would only select a product set where the business requirements would be met.	
2. Cost		<p>This option has been evaluated as the highest cost due to;</p> <ul style="list-style-type: none"> • Limited market for products with Australian NEM capabilities • New vendor/system will require higher effort in interfacing and designing customisations required.
3. Business impact	The goal would be to select a product with contemporary technology, providing an efficient user interface for the staff.	Impact is rated High. It is likely that the business will need to adapt processes to fit the selected product. High volume processes are affected.
4. Business strategic alignment	This option assumes that a solution will be found that fulfils the strategic and performance objectives outlined in sections 3.1 and 3.2.	The market for Australian NEM compliant systems is very small and vendors with compliant products are less than 5. The risk of process issues with new products is considered high.
5. IT strategic alignment	<p>By implementing a system that adequately supports the market services and improves the efficiency in providing business functions, this option will achieve basic alignment with the IT strategy:</p> <ul style="list-style-type: none"> • It will be maintainable and supported • It will align with current IT infrastructure. • It will align with other IT road map initiatives. 	<p>This option does not achieve any system consolidation, and likely prevents any future consolidation either in Market Interfaces or ERP.</p> <p>There may be concerns/difficulties with required levels of support as not many MDMS vendors have support/offices in Australia.</p> <p>The option of sourcing a new vendor for the MDMS conflicts with the Technology strategy principles that require TasNetworks to use existing investments in systems and infrastructure where possible.</p>
6. Project complexity		<p>Overall complexity rated High</p> <ul style="list-style-type: none"> • High level of customisations required for Australian NEM requirements • No vendor history with TasNetworks • Unknown capabilities of the selected system • High complexity in MDMS to Works Mgt. System

		<ul style="list-style-type: none"> High complexity in MDMS to Market Interface System Medium complexity in interface from MDMS to Meter reading Collection System High complexity in data migration
7. Risk profile	See Appendix B – Risk Comparison.	Higher risk when compared to option 2 due to new relationships and unknown capabilities of the selected system.
8. Compliance	It is assumed that this option either through out-of-the-box functionality or modifications will achieve all compliance requirements.	Functionality provided by the selected system may not meet NEM requirements and large modifications will need to be undertaken.
9. Time		Less time effective compared to Option 2.

6.2 Option estimates

Tables 9, 10 and 11 show the cost estimates for options 1 and 2. Option 0 'Do Nothing' has no capital expenditure.

Table 11 Option 1 – Cost Estimates

Estimate (in nominal dollars) [REDACTED]										
Option 1 expenditure profile	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29
Capex				[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			

Table 12 Option 2 – Cost Estimates

Estimate (in nominal dollars) [REDACTED]										
Option 2 expenditure profile	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29
Capex				[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			

Table 13 Option 3 – Cost Estimates

Estimate (in nominal dollars) [REDACTED]										
Option 3 expenditure profile	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29
Capex				[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			

6.3 Economic analysis

An economic analysis has been undertaken to compare the options considered. Details of the NPV analysis are included in Appendix A.

The economic analysis was conducted on the options to address detailed project outcomes. Options were evaluated against Option 0.

Table 14 details the preferred option in respect to NPV results.

Table 14 NPV Summary Results

Option No.	Option description	NPV	Reason got selection/rejection
0	Do Nothing		Highest risk.
1	Deploy a new ERP module and transfer functionality into the ERP. Build interfaces to Market systems and the Meter Reading System. (preferred option)		Best alignment with the corporate strategy.
2	Upgrade to new version with current vendor. Build interfaces to Market systems and the Meter Reading System.		Less aligned with the corporate strategy.
3	Go to market & source new vendor/product. Build interfaces to Market systems and the Meter Reading System.		Less aligned with the corporate strategy. Higher business impact on implementation.

6.3.1 Sensitivity analysis



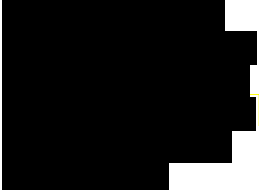

N/A

6.4 Risk Matrix summary of drivers

This matrix provides a comparison of each option's impact against the company risks identified in section 3.3 titled "Risk objectives". Appendix B contains supporting details of the risk assessment outcomes as summarised in table 15.

Table 15 Risk Matrix summary

Risk ID	Risk Category	Risk Drivers	Impact	Option 0 - Do Nothing Gross risk	Option 1 Net risk	Option 2 Net risk	Option 3 Net risk
ITR-001	Regulatory Compliance	TasNetworks may cease to remain compliant due to inability to make modifications to accommodate regulatory change.	Damage to relationships with market operator, AER, Retailers and customers. Possible fines.	High	Medium	Medium	Medium

ITR-002	Regulatory Compliance	 resulting in non-conformance with MDP, LNSP obligations.	Damage to relationships with market operator, AER, Retailers and customers. Possible fines and/or removal of licence.	High	Medium	Medium	Medium
ITR-003	Regulatory Compliance	If not maintained in a healthy supported state, the current system may not be able to meet SLAs/timeframe obligations.	Damage to relationships with market operator, AER, Retailers and customers. Possible fines.	Medium	Medium	Medium	Medium
ITR-004	Customer	Issues impact on relationship with retailers and customers.	Increase in disputes and complaints.	Low	Low	Low	Low
ITR-005	Customer & People		Customer Retail Bills affected.	Medium	Low	Low	Low
ITR-006	Financial	If the system is not maintained in accordance with relevant changes, TasNetworks may face NECF breaches and fines.	Additional costs.	Medium	Low	Low	Low
ITR-007	Financial			High	Medium	Medium	Medium
ITR-008	Financial	If not maintained in a healthy supported state, the current system may lead to inefficiencies in market processes.	Need for additional FTE resources to compensate process inefficiency.	High	Low	Low	Low
ITR-009	Financial	Market non-compliance may lead to high level of scrutiny during market audits.	Business disruption due to resources being tied up with auditing activities.	Low	Low	Low	Low
ITR-011	People	If not maintained in a healthy supported state, the current system may suffer failure resulting in processes failing.	May result in absenteeism, disengagement.	High	Low	Low	Low

ITR-012	Safety	[REDACTED]	[REDACTED]	High	Low	Low	Low
ITR-124	Financial	[REDACTED]	[REDACTED]	Medium	Low	Low	Low
ITR-125	Reputation	If not maintained in a healthy supported state, the current system may suffer failure, which could lead to several issues, namely: market process issues, [REDACTED] impact to Distribution Monthly Billing, non-compliance to regulatory, SLA and timeframe obligations.	Negative impacts on TasNetworks' operations, customers and retailers and non-compliance with regulatory obligations, could negatively impact TasNetworks' reputation.	High	Low	Low	Low
ITR-010	Financial	Solution complexity results in unforeseen issues.	Additional costs exceed initial cost projection.	High	Medium	Low	Medium
ITR-155	Reputation	Solution does not achieve compliant processes.	TasNetworks reputation damaged as other NEM participants affected.	High	Low	Low	Medium
ITR-156	People/ Process	Interfacing difficulties create less effective processes.	Staff / resource requirements increase, morale decreases, engagement decreases	NA	Medium	Low	Medium

6.5 Quantitative risk analysis

N/A

6.6 Benchmarking

N/A

6.7 Expert Findings

N/A

6.8 Preferred option

Option 0 is provided as a base case only; it is not a credible option as it likely results in TasNetworks being non-compliant.

The preferred option is upgrade to transfer the MDMS functionality to TasNetworks' ERP, and redefine interfaces to Market Systems and the Meter Reading System.

This option has been selected because it has best alignment with the investment need whilst:

- Maximising benefit from the ERP strategy.
- Minimising the negative business impacts and maximising the positive business impacts.
- Maximising the business strategic alignment.
- Maximising the IT strategic alignment.
- Minimising the project complexity.
- Minimising the risk to the organisation.

6.8.1 Scope

This solution, which consists of implementing [REDACTED] includes:

- Implementation of MDMS module into ERP.
- Migration of data from current MDMS.
- Replumbing of [REDACTED] Market Interfaces.
- Setting up new Interfaces to [REDACTED] for round based Meter Reading:
 - End-to-end view of (1) Works and (2) Customer,
 - Build out architecture from Ajilis to other areas of scope.
- Rebuild Field Works system Interfaces.

6.8.2 High Level Implementation Activities

This initiative is scheduled for 2022-2026 and its high level implementation activities are:

- Review of 'As Is' business process in-context of new product capability and re-engineering of the 'To Be' process if necessary;
- Implement new solution;
- Set up interface to the basic meter reading system;
- Redefine the market interface systems to the new solution;
- Migrate existing data sets;

- Potential training in use of the new system including creation and update of all documentation (administrative or end user).

7. Investment timing

Initiative is scheduled for 2022-2026

8. Regulatory test

N/A

9. Expected outcomes and benefits

The outcomes and benefits are considered from TasNetworks' perspective and from an external stakeholder perspective, in this case the customer and retailer.

Outcomes and benefits have also been segregated into tangible (i.e. measureable) and intangible (not measureable). Tangible benefits are used as part of the NPV calculations in chapter 6.

Table 16 Summary of Expected Benefits

TasNetworks' perspective

Tangible benefits

The benefits quantified below have been assessed as most likely to result given the assumptions made regarding the expected future state.

Benefit Description	Benefit
With the implementation of this initiative, the risk of NECF fines will be reduced ('Do Nothing' risk IT-006 mitigated).	
With the implementation of this initiative, extra resources would not be required to account for loss of efficiency if the 'Do Nothing' option is selected ('Do Nothing' risks IT-008 and IT-009 mitigated).	

Intangible benefits

From a business perspective, this initiative will provide the following intangible benefits:

• Ensure TasNetworks remains compliant to regulatory obligations ('Do Nothing' risks IT-001, IT-002 and IT-003 mitigated).

• Ensure the system remains efficient, reducing the likelihood of disruption of the distribution monthly billing process, which would result in cash flow impacts, loss of revenue, and need for workaround arrangements to recover from Retailers ('Do Nothing' risk IT-007 mitigated).

• Enable and optimise market services including:

Meter reading

Customer connections

Distribution Billing

Service Call Centre support

• Enable greater data analytics and tailoring customer solutions.

• Service customer growth.

• Increased staff morale, by having contemporary software with which to do their jobs.

• Maintain brand reputation.

From an IT perspective, this initiative will ensure:

	<ul style="list-style-type: none"> • The software remains fully supported by the vendor. • Increased security. • Overall better product performance. • TasNetworks gets access to road map improvements that come as part of the base product and may add value to TasNetworks' efficiency and effectiveness. • Increased opportunities to interface with other products that support the business.
Customer's perspective	<p>From a customer perspective, TasNetworks will be able to:</p> <ul style="list-style-type: none"> • Ensure that TasNetworks' part in the customer billing process is conducted with the required timeliness and quality. • Ensure delivery of accurate data in a timely manner. • Support TasNetworks in providing sustainable and predictable pricing. • Ensure that TasNetworks maintains our capability to deliver market services to our customers in an efficient, effective way. • Maintain valuable relationships with retailers and customers where TasNetworks can be trusted to deliver.

10. Assumptions

The table below shows the assumptions used for this IES.

Table 17 Assumptions

ID	Assumption Description
ITA-001	Cost estimates used on the analysis have a level of accuracy of $\pm 30\%$ and do not include the 20% project contingency normally applied to this type of project.
ITA-002	It is assumed that any new system will be capable of meeting regulatory obligations.
ITA-003	It is assumed that if we went to market we would find a solution that can be customised to meet any changes in regulatory requirements.
ITA-004	It is assumed that the cost associated with future modifications to maintain compliance with changing regulations is reasonable.
ITA-005	It is assumed that processes imposed by new systems will be as efficient as current processes and not require further FTE resources.
ITA-006	It is assumed that any systems' performance will be adequate to meet SLAs / timeframe obligations.
ITA-007	<p>If the MDMS is not upgraded such that it can be operated on contemporary hardware and the current hardware fails, the business would be forced to source new/upgraded systems. Until such systems were operational, TasNetworks would be forced to conduct business with manual workarounds and that would require TasNetworks to hire additional contract labour;</p> <ul style="list-style-type: none"> • additional staff required to perform all Service Orders manually though email • additional staff required to perform meter data processing manually • additional staff required to maintain customer and safety data manually • additional staff required to produce and deliver UMS data manually • additional staff required to handle one-way notifications manually • additional data analysts required to monitor compliance • additional supervisors required • Onboarding costs including PCs etc. • Additional accommodation costs

	It is expected that these additional costs would be incurred for [REDACTED] years whilst systems were urgently replaced.
ITA-008	If the MDMS system is not adequately upgraded, TasNetworks might not be able to meet SLAs and timeframe obligations, provide Safety and Life Support information and it would be more likely we would incur NECF fines. [REDACTED]
ITA-040	It is assumed that if the current product were to be replaced with an alternate vendor product, the Opex component would be the same.
ITA-043	<p>Option 1 Functional Coverage</p> <p>[REDACTED] / ERP will cover all functions in [REDACTED] and partial coverage of functions in existing Market Interface System [REDACTED] (which will need to be modified and retained in some form).</p> <p>[REDACTED] / ERP would cover:</p> <ul style="list-style-type: none"> • Standing Data Mgt. including Market Customer details • NMI creation • Meter config/ administration • MSATS Datastream management • Basic meter reading route mgt. • Basic and Interval meter data validation, substitution & storage • UMS inventory mgt. • UMS interval data creation and validation • B2B Meter Data Delivery & Requests • B2B Customer data transactions/protocol • B2B One-way notifications. <p>Current Market Interface System likely to be retained/required to cover:</p> <ul style="list-style-type: none"> • B2B Service Order Management (from a market perspective, not works) • Market integration & transaction delivery • MSATS Replica & reconciliation • B2B functions not supported by ERP. <p>Interfaces required from:</p> <ul style="list-style-type: none"> • ERP to Works Mgt. System • Market Interface System to ERP • ERP to Meter Reading Collection System.
ITA-111	<p>Option 2 Functional Coverage</p> <p>[REDACTED] V4 will cover all functions in [REDACTED] V3 plus existing Market Interface System [REDACTED] (which could be decommissioned).</p> <p>[REDACTED] MDMS would cover:</p> <ul style="list-style-type: none"> • Standing Data Mgt. including Market Customer details • NMI creation • Meter config/ administration • MSATS Datastream management • Basic meter reading route mgt. • Basic and Interval meter data validation, substitution and storage • UMS inventory mgt. • UMS interval data creation and validation • B2B Meter Data Delivery and Requests • B2B Service Order Management (from a market perspective, not works) • B2B Customer data transactions/protocol • One-way notifications • Market integration and transaction delivery • MSATS Replica and reconciliation.

	<p>Interfaces required:</p> <ul style="list-style-type: none"> • Gentrack V4 to Works Mgt. System • Gentrack V4 to Meter Reading Collection System (existing in V3).
ITA-112	<p>Option 3 Functional Coverage</p> <p>It is assumed that due to the limited market for Australian NEM functionality, an international MDMS offering cover functions that are generic to utilities, and that Australian NEM specific functions would likely need to be supplied by the existing Market Interface System with possible enhancements required.</p> <p>An international MDMS would cover:</p> <ul style="list-style-type: none"> • Standing Data Mgt. including Market Customer details • NMI creation • Meter config/ administration • Basic meter reading route mgt. (customisation expected) • Basic and Interval meter data validation, substitution & storage • UMS inventory mgt. • UMS interval data creation and validation. <p>Current Market Interface System likely to be retained/required to cover:</p> <ul style="list-style-type: none"> • MSATS Datastream management • B2B Service Order Management (from a market perspective, not works) • Market integration and transaction delivery • MSATS Replica and reconciliation • B2B Meter Data Delivery and Requests • B2B Customer data transactions/protocol • B2B One-way notifications. <p>Interfaces required from:</p> <ul style="list-style-type: none"> • MDMS to Works Mgt. System • Market Interface System to MDMS • MDMS to Meter Reading Collection System.
ITA-113	<p>Option 1 Business Impact</p> <ul style="list-style-type: none"> • High impact on business processes due to moving high volume functions to the ERP product
ITA-114	<p>Option 2 Business Impact</p> <ul style="list-style-type: none"> • Low impact on business processes due to high volume functions being retained in the MDMS (i.e. a product upgrade vs new product)
ITA-115	<p>Option 3 Business Impact</p> <ul style="list-style-type: none"> • High impact on business processes due to moving high volume functions to the ERP product
ITA-116	<p>Option 1 Project Complexity</p> <ul style="list-style-type: none"> • Low complexity in ERP to Works Mgt. System as internal interface within product • High complexity in ERP to Market Interface System • Medium complexity in interface from ERP to Meter Reading Collection System • High complexity in data migration.
ITA-117	<p>Option 2 Project Complexity</p> <ul style="list-style-type: none"> • Low complexity in MDMS to Works Mgt. System as internal interface within product • Low complexity in interface from MDMS to Meter Reading Collection System due to the fact that this system already exists • Low complexity in data migration as done by existing product vendor as upgrade.

ITA-118	<p>Option 3 Project Complexity</p> <ul style="list-style-type: none"> • High complexity in MDMS to Works Mgt. System • High complexity in MDMS to Market Interface System • Medium complexity in interface from MDMS to Meter Reading Collection System • High complexity in data migration
ITA119	<p>Option 1 Prime Vendor Costs</p> <p>ERP implementer was approached to provide high level costs estimates and they provided;</p> <p>██████████ for Customer Care and Billing - \$10M - \$20M</p> <p>██████████ for Power of Choice - \$5M - \$10M</p> <p>rough order of magnitude estimates 20 Feb 2017)</p> <p>Expected that prime vendor costs cover:</p> <ul style="list-style-type: none"> • Implementation • Project support • Heightened support post go-live • A level of customisations • Licences. <p>These estimates likely did not take into account the following:</p> <ul style="list-style-type: none"> • Data Migration • Medium customisations around interfacing to MVRS, customising the UL and DL file formats, to support TasNetworks processes • Medium customisations on UMS Fixture Mgt. to support TasNetworks asset mgt. processes • Small customisations in Type 7 data generation to provide tables calculation summary data for AEMO auditing • Small customisations in Type 6 substitution rules • Medium customisation around interfaces to field works systems. <p>Therefore the higher estimates have been used to cover the expected works.</p>
ITA-120	<p>Option 1 Market Interface Vendor Costs</p> <p>Market Interface Vendor costs for required customisations have been estimated based on history of 10 years of prior projects with this vendor.</p>
ITA-121	<p>Option 2 Vendor Costs</p> <p>██████████ was approached, subsequent discussions confirmed the likely scope of:</p> <ol style="list-style-type: none"> 1. ██████████ implementation effort for a ██████████ upgrade for: <ul style="list-style-type: none"> • Standing Data NMI/Meter/Registers/Datastreams/Emb. Networks as an LNSP only • Type 6 MDP functionality • Type 7 Inventory and MDP functionality • Customer management (as an LNSP) • CATS • B2B including SORD/CSDN/OWNP/MDP-MTRD • Standing Data MSATS repository & reconciliation; 2. ██████████ performing data migration of standing, UMS fixture data and meter data to the V4 system (including history); 3. Likely customisations in the following areas: <ul style="list-style-type: none"> • Medium customisations around interfacing to ██████████ customising the UL and DL file formats to support TasNetworks processes • Medium customisations on UMS Fixture Mgt. to support TasNetworks asset mgt. processes • Small customisations in Type 7 data generation to provide tables calculation summary data for AEMO auditing • Small customisations in Type 6 substitution rules

	<ul style="list-style-type: none"> • Medium customisation around interfaces to field works systems; <p>4. [REDACTED] support of the project including releases, project management, defect management and a level of heightened support post go live;</p> <p>5. Licences required.</p> <p>[REDACTED] refused to provide estimates, therefore TasNetworks has estimated based on experience with this vendor over many projects since 2005.</p>
ITA-122	<p>Option 3 Prime Vendor Costs</p> <p>International MDMS vendor high level costs have been estimated in conjunction with advice from [REDACTED] [REDACTED] (Estimated order of magnitude)</p> <p>Expected that prime vendor costs cover:</p> <ul style="list-style-type: none"> • Implementation • Project support • Heightened support post go-live • Licences • Data Migration • Medium customisations around interfacing to MVRS, customising the UL and DL file formats to support TasNetworks processes • Medium customisations on UMS Fixture Mgt. to support TasNetworks asset mgt. processes • Small customisations in Type 7 data generation to provide tables calculation summary data for AEMO auditing • Small customisations in Type 6 substitution rules • Medium customisation around interfaces to field works systems.
ITA-123	<p>Option 3 Market Interface Vendor Costs</p> <p>Market Interface Vendor [REDACTED] costs for required customisations have been estimated based on history of 10 years of prior projects with this vendor.</p>
ITA-092	<p>TasNetworks Project Costs</p> <p>TasNetworks has 12 years of experience in Market Systems projects. This experience indicates costs will be incurred in the following areas:</p> <ul style="list-style-type: none"> • Program management • Project Management • Architecture Support • Requirement & Design Documentation • Change Management • Quality Assurance • Release Management/Deployment • Environment/Hardware Supply and Mgt. • Test Environment Administration • Test Management and Testing • Defect Management • Move to live dress rehearsals • Reporting • Heightened support.

11. Recommendation

As discussed throughout the IES, Option 1 will provide the best outcome with respect to integration and efficiency, while aligning with the company's vision of a central enterprise platform.

While Options 2 and 3 will solve the problem around the asset being at the end of its life, they are seen as a temporary fix rather than a long-term solution. Option 0 has been ruled out by way of non-compliance issues with the asset being past its life.

Appendix A – NPV analysis

The assumptions used in the NPV analysis are as follows:

- NPV analysis is carried out for a 12-year period (2017-2029).
- WACC of 3.59 per cent is used.
- CPI of 2.45 per cent is used.
- No contingency has been assumed.

The results of the NPV Analysis are as follows:

	Option 0	Option 1	Option 2	Option 3
Costs				
NPV Capital Expenditure				
NPV Operational Expenditure				
NPV Costs Only				
Benefits				
NPV Other benefits				
NPV Benefits Only				
NPV Net Benefit				

Appendix B - Risk Comparison

The project options each have a different impact on the future asset risk. The table below provides a qualitative summary of the risk considerations cognisant of the risk approach and the risk management process outlined in TasNetworks risk management framework document^{3]} and complement the risks identified in section 3.3 titled “Risk objectives”.

Risk ID	Risk Category	Risk drivers	Impact	Option 1 Deploy a new ERP module and transfer functionality into the ERP. Build interfaces to Market systems and the Meter Reading System.				Option 2 Upgrade to new version with current vendor. Build interfaces to Meter Reading System.				Option 3 Go to market & source new vendor/product. Build interfaces to Market systems and the Meter Reading System.			
				Likelihood	Consequence	Risk	How does this option mitigate current situation risk?	Likelihood	Consequence	Risk	How does this option mitigate current situation risk?	Likelihood	Consequence	Risk	How does this option mitigate current situation risk?
ITR-001	Regulatory Compliance	TasNetworks may cease to remain compliant due to inability to make modifications to accommodate regulatory change.	Damage to relationships with market operator, AER, Retailers and customers. Possible fines.	Unlikely	Major	Medium	This option will allow TasNetworks to make modifications to accommodate regulatory change. However, it is possible that its implementation will require additional customisations to the base product.	Rare	Major	Medium	This option will allow TasNetworks to make modifications to accommodate regulatory change. Because the system is currently used by other participants of the Australian Energy Market, the likelihood of not being able to remain compliant is minimal.	Unlikely	Major	Medium	This option should allow TasNetworks to make modifications to accommodate regulatory change. However, it is possible that its implementation will require additional customisations to the base product.
ITR-002	Regulatory Compliance		Damage to relationships with market operator, AER, Retailers and customers. Possible fines.	Rare	Major	Medium	This option will decrease the likelihood of system failure because it will ensure the system is maintained in a healthy supported state.	Rare	Major	Medium	This option will decrease the likelihood of system failure because it will ensure the system is maintained in a healthy supported state.	Rare	Major	Medium	This option will decrease the likelihood of system failure because it will ensure the system is maintained in a healthy supported state.
ITR-003	Regulatory Compliance	If not maintained in a healthy supported state, the current system may not be able to meet SLAs/timeframe obligations.	Damage to relationships with market operator, AER, Retailers and customers. Possible fines.	Unlikely	Moderate	Medium	This option should allow the system to be able to meet SLAs/timeframe obligations.	Unlikely	Moderate	Medium	This option should allow the system to be able to meet SLAs/timeframe obligations.	Unlikely	Moderate	Medium	This option should allow the system to be able to meet SLAs/timeframe obligations.
ITR-004	Customer	Issues impact on relationship with retailers and customers.	Increase in disputes and complaints.	Unlikely	Minor	Low	This option will maintain the system healthy and supported, thus significantly decreasing the likelihood of issues that impact on retailers and customers.	Unlikely	Minor	Low	This option will maintain the system healthy and supported, thus significantly decreasing the likelihood of issues that impact on retailers and customers.	Unlikely	Minor	Low	This option will maintain the system healthy and supported, thus significantly decreasing the likelihood of issues that impact on retailers and customers.
ITR-005	Customer & People		Customer Retail Bills affected.	Rare	Negligible	Low	This option will maintain the system healthy and supported, thus significantly decreasing the likelihood of system failure resulting in customer impacts.	Rare	Negligible	Low	This option will maintain the system healthy and supported, thus significantly decreasing the likelihood of system failure resulting in customer impacts.	Rare	Negligible	Low	This option will maintain the system healthy and supported, thus significantly decreasing the likelihood of system failure resulting in customer impacts.
ITR-006	Financial	If the system is not maintained in accordance with relevant changes, TasNetworks may face NECF breaches and fines.	Additional costs.	Unlikely	Minor	Low	This option will allow TasNetworks to maintain the system in accordance with relevant changes, thus decreasing the likelihood of NECF breaches and fines.	Rare	Minor	Low	Because this option will implement a system that is currently used by other participants of the Australian Energy Market, the likelihood of not being able to be maintained in accordance with relevant changes is minimal.	Unlikely	Minor	Low	This option will allow TasNetworks to maintain the system in accordance with relevant changes, thus decreasing the likelihood of NECF breaches and fines.
ITR-007	Financial			Rare	Major	Medium	This option will maintain the system healthy and supported, thus significantly decreasing the likelihood of system failure resulting in impact to Distribution Monthly Billing.	Rare	Major	Medium	This option will maintain the system healthy and supported, thus significantly decreasing the likelihood of system failure resulting in impact to Distribution Monthly Billing.	Rare	Major	Medium	This option will maintain the system healthy and supported, thus significantly decreasing the likelihood of system failure resulting in impact to Distribution Monthly Billing.

³ <http://reclink/R0000238142>.

ITR-008	Financial	If not maintained in a healthy supported state, the current system may lead to inefficiencies in market processes.	Need for additional FTE resources to compensate process inefficiency.	Unlikely	Negligible	Low	This option will maintain the system healthy and supported, thus decreasing the likelihood of inefficiencies in market processes.	Rare	Negligible	Low	This option will maintain the system healthy and supported, thus decreasing the likelihood of inefficiencies in market processes.	Unlikely	Negligible	Low	This option will maintain the system healthy and supported, thus decreasing the likelihood of inefficiencies in market processes.
ITR-009	Financial	Market non-compliance may lead to high level of scrutiny during market audits.	Business disruption due to resources being tied up with auditing activities.	Unlikely	Negligible	Low	This option will maintain the system healthy and supported, thus decreasing the likelihood of market non-compliance.	Rare	Negligible	Low	This option will maintain the system healthy and supported, thus decreasing the likelihood of market non-compliance. The fact that this system is currently used by other participants of the Australian Energy Market further decreases the likelihood of non-compliance.	Unlikely	Negligible	Low	This option will maintain the system healthy and supported, thus decreasing the likelihood of market non-compliance.
ITR-011	People	If not maintained in a healthy supported state, the current system may suffer failure resulting in processes failing.	May result in absenteeism, disengagement.	Rare	Moderate	Low	This option will maintain the system healthy and supported, thus decreasing the possibility of system failure.	Rare	Moderate	Low	This option will maintain the system healthy and supported, thus decreasing the possibility of system failure.	Rare	Moderate	Low	This option will maintain the system healthy and supported, thus decreasing the possibility of system failure.
ITR-012	Safety			Rare	Moderate	Low	This option will maintain the system healthy and supported, thus decreasing the possibility of system failure.	Rare	Moderate	Low	This option will maintain the system healthy and supported, thus decreasing the possibility of system failure.	Rare	Moderate	Low	This option will maintain the system healthy and supported, thus decreasing the possibility of system failure.
ITR-124	Financial			Rare	Moderate	Low	This option will maintain the system healthy and supported, thus decreasing the possibility of system failure.	Rare	Moderate	Low	This option will maintain the system healthy and supported, thus decreasing the possibility of system failure.	Rare	Moderate	Low	This option will maintain the system healthy and supported, thus decreasing the possibility of system failure.
ITR-125	Reputation	If not maintained in a healthy supported state, the current system may suffer failure, which could lead to several issues, namely: market process issues, impact to Distribution Monthly Billing, non-compliance to regulatory, SLA and timeframe obligations.	Negative impacts on TasNetworks' operations, Customers and Retailers and non-compliance to regulatory obligations, could negatively impact TasNetworks' reputation.	Rare	Moderate	Low	This option will maintain the system healthy and supported, thus decreasing the possibility of system failure.	Rare	Moderate	Low	This option will maintain the system healthy and supported, thus decreasing the possibility of system failure.	Rare	Moderate	Low	This option will maintain the system healthy and supported, thus decreasing the possibility of system failure.
ITR-010	Financial	The complexity of the project results in project delays increasing the cost	Budget overrun	Possible	Moderate	Medium	History with the ERP vendor indicates it is possible that there may be overruns	Rare	Moderate	Low	Recent history with the MDMS vendor indicates it is unlikely that there may be overruns	Possible	Moderate	Medium	Unknown history with vendor, option is most complex in terms of solution – more likely that an overrun is possible
ITR-155	Reputation	Solution does not achieve compliant processes	TasNetworks reputation damaged as other NEM participants affected.	Rare	Moderate	Low	Less risk due to known vendor, product and experience with Australian NEM regulatory environment	Rare	Moderate	Low	Less risk due to known vendor, product and experience with Australian NEM regulatory environment	Possible	Moderate	Medium	Due to unknown vendor & product capabilities, risk is higher that solution may end up with compliance issues than with other two options
ITR-156	People / Process	Interfacing difficulties create less effective processes	Staff / resource requirements increase, morale decreases, engagement decreases	Possible	Moderate	Medium	More interfacing expected than Option 2	Rare	Moderate	Low	More consolidation expected with this option	Possible	Moderate	Medium	More interfacing expected than Option 2