Investment Evaluation Summary (IES)

Project Details:

Project Name:	*Embedded Networks Readiness*
Project Id:	IT.CST.03
Thread:	Information Technology
CAPEX / OPEX:	CAPEX
Scope Type:	C
Service Classification:	Standard Control
Work Category Code:	ITC
Work Category Description:	IT & Communications
Record Point ID:	R0000130303
Preferred Option Description:	The preferred option is to enhance TasNetworks' current applications to facilitate 'Embedded Networks' (EN).

	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
Estimate ($)	3.0M	0.6M								
Total ($)	$3,574,320									

Governance:

	IES Section 1		IES Section 2	
Business Unit Review:	[redacted]	17/06/2015	[redacted]	17/06/2015
Thread Endorsed:	[redacted]	18/05/2015	[redacted]	18/05/2015
Project Approver:				

Document Details:

Version Number:	1.0

Section 1 (Gated Investment Step 1)

1. Background

An embedded network is a formal electricity distribution system, with individual customers, below the connection point where the site joins the distribution network.

There are currently no formal Embedded Network's (EN) in Tasmania. Currently TasNetworks systems do not support EN's. Locally customers such as shopping centres and ports have been lobbying for EN arrangements. There are many sites in Tasmania that could potentially request this arrangement.

There is no current legal impediment to EN in Tasmania and if TasNetworks was ever challenged or directed to provide the arrangement, urgent and complex works would be required to the IT systems and processes.

Nationally AEMC have an initiative running to unify and mandate the provision of EN in support of broader 'Power of Choice' reforms.

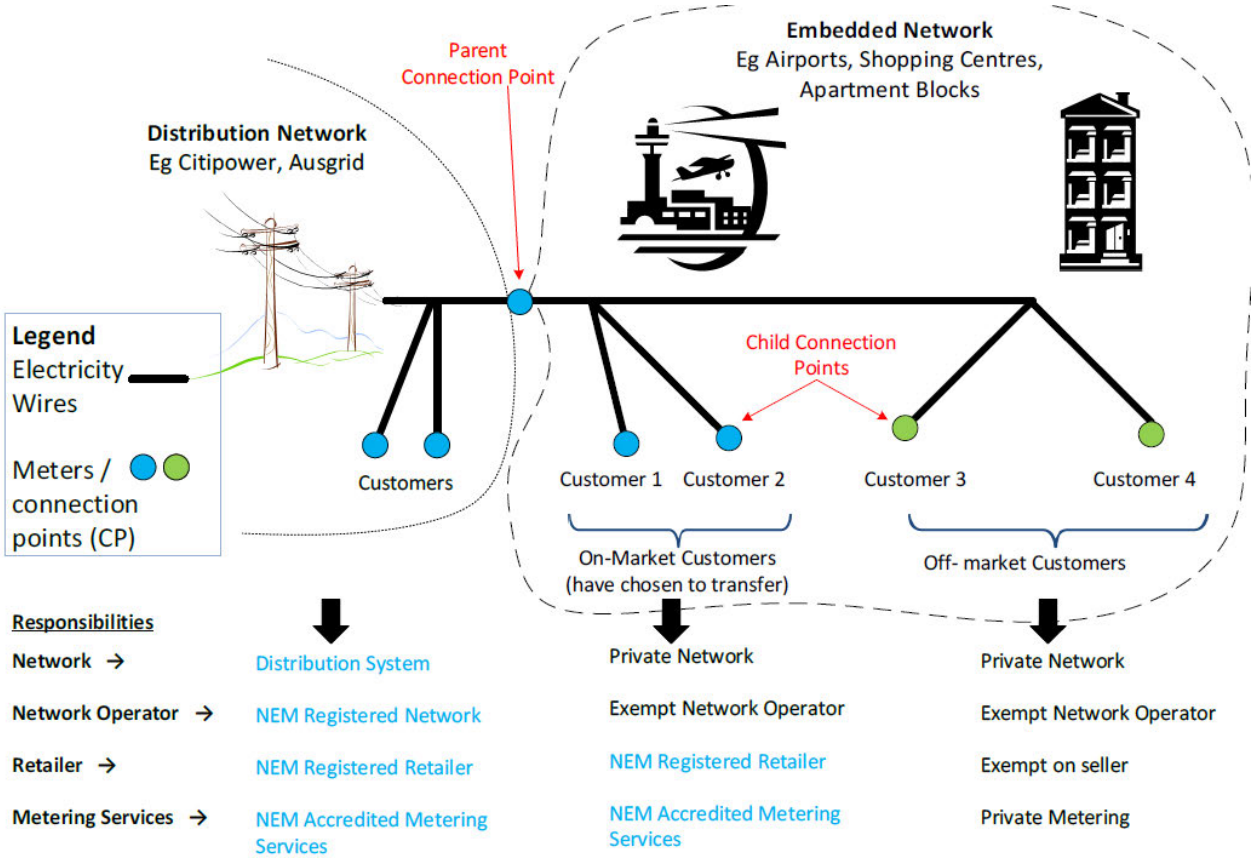
In December 2014, the Australian Energy Market Operator (AEMO) requested that the Australian Energy Market Commission (AEMC) to consider a rule change to the National Electricity Law for the explicit recognition and management of EN's.

This request originated from the Council of Australian Governments (COAG) Energy Council and aims to clarify the metering and other arrangements for consumers in 'Embedded Networks'; reduce the barriers to consumer access to competitive offers from market participants and support competition in the provision of electricity and demand side services.

The following link contains advice from AEMO to AEMC regarding the proposed rule change:

AEMC - Embedded Networks Rule Change Request.

The following diagram from AEMO, 2014, 'Embedded networks – detailed network design' pictorially represents an embedded network.



The operator of the embedded network (or a party or parties acting on its behalf) provides network access and sells energy to customers within the network. This activity known as "off-market" activity is not visible to the NEM. Some NEM jurisdictions allow retail contestability within embedded networks. In such networks, some customers at former "off-market" child connection points have elected to choose a retailer thus becoming NEM customers at "on market" child connection points. Meters within embedded networks must be registered in the Market Settlement and Transfer Solutions (MSATS) systems if the customer is at an on-market child connection point.

It is also proposed to introduce a new class of service provider in the NEM called 'Embedded Network Manager'. This new service provider would encompass all obligations in relation to the management of the embedded network in respect of on-market children supplied by the embedded network. They effectively will become a LNSP for these on-market children and fulfil the regulatory LNSP obligations in this scenario.

1.1 Investment Need

This initiative is driven by potential changes to the regulatory environment in which TasNetworks' operates and is obligated to conform with.

There will be some EN regulatory obligations that TasNetworks must comply with. For example, TasNetworks as a DNSP must update the parent NMI in MSATS for on-market child connection points.

TasNetworks could also choose to become an 'Embedded Network Manager' which would require systems and processes to be put in place to support this and accreditation.

1.2 Customer Needs or Impact

The proposed changes will provide regulatory certainty in relation to 'Embedded Networks', by recognising these networks in the national electricity rules (NER), and formalising the required obligations and arrangements in the NEM regulatory framework. The AEMC goal is increased competition and improved regulatory certainty between jurisdictions.[1]

Currently individual customers within an embedded network have little choice. Under current arrangements, the retailer is almost like a local monopoly, and is able to use their ability to pass on distribution costs in a non-transparent way so that they can cross subsidise across customers according to the customer's ability to access competing retailers.

This initiative is owned by 'Customer Engagement and Network Operations'.

1.3 Regulatory Considerations

It is assumed that the regulatory requirements for EN will go ahead. The timeline as at early 2015 shows requirements being finalised in 2017 with implementation in 2018.

There are two other regulatory initiatives that will need to be considered in parallel with EN. They are:

- Multiple Trading Relationships (MTR) – described in the initiative titled 'Multiple Trading Relationships' (IT.CST.02).
- Metering Contestability – described in the initiatives titled 'Metering Contestability – DNSP' (IT.CST.01).

These initiatives are going to impact the same processes and systems that EN does.

2. Project Objectives

The objective of this project is to ensure compliance with impending changes to the National Electricity Law rules to incorporate EN by providing customers with efficient and effective access to the new arrangements and being able to maintain accurate site configuration data and appropriate distribution billing activities.

[1] Jacobs SKM (2014), *Benefits and Costs of Multiple Trading Arrangements and Embedded Networks*

3. Strategic Alignment

3.1 Business Objectives

The following table highlights the problems that the initiative will solve.

Strategic Goal	Problems this initiative will address
"we understand our customers by making them central to all we do"	• When the regulations are enabled [redacted]
"we enable our people to deliver value"	• When the regulations are enabled customers [redacted]
"we care for our assets, delivering safe and reliable network services while transforming our business"	• The data IT asset will continue to be [redacted] • All the above issues will cause TasNetworks to fail its regulatory DNSP obligations.

3.2 Business Initiative Alignment

By supporting our customer's ability to access new market arrangements this initiative is expected to further 'TasNetworks Strategy on a Page' aims of:

- Customer net promoter score.
- Voice of the customer program.

In maintaining efficient and accurate billing this initiative supports the aims of lowest sustainable pricing.

4. Current Risk Evaluation

This chapter details the risk of 'Do Nothing'.

The TasNetworks Risk Framework details the level of risk the business finds acceptable in each category (Safety, Environment, Financial, Regulatory, Legal and Compliance, Customers, Assets, Reputation and People).

This initiative addresses Customer, Financial and Regulatory risks, of which TasNetworks has a [redacted]

Not completing the changes recommended within this initiative has the potential [redacted]

4.1 Risk Matrix

TasNetworks business risks are analysed utilising the corporate risk matrix, as outlined in TasNetworks Risk Management Framework.

Relevant strategic business risk factors that apply are follows:

Risk #	Risk Category	Risk	Impact	Likelihood	Consequence	Risk Rating
IT-003	Regulatory Compliance	[redacted]	TasNetworks is noncompliant with laws and regulations.	Almost Certain	Moderate	**High**
IT-004	Financial	[redacted]	Loss of revenue.	Almost Certain	Negligible	Medium
IT-054	Financial	[redacted]	Loss of efficiency and potentially not meeting required timelines.	Almost Certain	Negligible	Medium
IT-055	Customer	[redacted]	Retailer disputes and issues.	Possible	Negligible	Low
IT-068	Financial	[redacted]	Higher costs to complete the initiative.	Possible	Minor	Low

		[redacted]				
IT-071	Safety & People	[redacted]	The CEO and other responsible staff may face jail time as result of compliance breaches.	Unlikely	Severe	**High**

Section 1 Approvals (Gated Investment Step 1)

Business Unit Review:	[redacted]	**Date**	17/06/2015
IT Project Initiator:	[redacted]	**Date**	18/05/2015
IT Thread Approved:	[redacted]	**Date**	18/05/2015
Manager (Network projects) or Group/Business Manager (Non-network projects):		**Date**	
[Send this signed and endorsed Summary to the Capital Works Program Coordinator.]			

Actions			
CWP Project Manager commenced initiation:		Assigned CW Project Manager:	
PI notified project initiation commenced:		Actioned by:	

Section 2 (Gated Investment Step 2)

5. Preferred option

The preferred option is to enhance TasNetworks' current applications to facilitate EN. The percentage change to existing systems is considered less than 1% of total functionality.

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

- Minimising the cost.
- Minimising the negative business impacts and maximising the positive business impacts.
- Maximising the strategic alignment.
- Maximising the IT strategic alignment[2].
- Minimising the project complexity.
- Minimising the risk to the organisation.

It is likely that 'Multiple Trading Relationships' (MTR) will need to be implemented at around the same time as EN. The systems and processes that will be impacted are largely the same for MTR and EN and there could be significant cost savings if these projects could be combined.

5.1 Scope

The scope of this initiative is limited to the activities required to be undertaken to allow TasNetworks to facilitate the introduction of EN in the Tasmanian jurisdiction.

The high level functions in scope for this initiative includes:

1. Meter data management system modifications:
    a. Enhanced functionality to be able to handle parent-child metering.
    b. The ability to create linkages between roles, connections points and metering.

[2] This is a test against criteria including:

- Solutions will leverage the expertise and conformity of vendor products designed for NEM market interfaces.
- Solutions are designed for TasNetworks work practices and work processes to be as efficient and effective as possible without compromise.
- Solutions are maintainable and supported.
- Solutions are 'fit for purpose'.
- Alignment with current IT infrastructure.
- Alignment with other IT roadmap initiatives.

c. Functionality to handle subtractive meter data processes (pending final procedural requirements).

2. NEM market interface system modifications - Enhance various market interfaces to cope with the altered schema, relationships and processes. Including:
    a. Service Order Management.
    b. Transfers.
    c. Standing Data Reconciliation.
    d. Meter Data Provider functions.
    e. Customer Data Exchange.
    f. Distribution Billing.
    g. Market Integration Layer.
3. Field tool changes (Currently [redacted] due for replacement in 2018):
    a. Alterations to Service Request and Work Order templates to support parent-child metering (impacted by Metering Contestability strategy).
    b. Alterations to Service Order processes and scheduling to support embedded network arrangements.

Detailed scope

The primary applications and changes considered within the scope of this project are:

- Meter data management system (TasNetworks' Meter Data Management System):
    - Enhanced functionality to be able to handle parent-child metering.
    - The ability to create linkages between roles, connections points and metering.
    - Functionality to handle subtractive meter data processes (pending final procedural requirements).
    - Life support attribution in parent – child site arrangements.
- NEM market interface system service order management:
    - Minor modifications to support altered Service Order processes.
    - Alterations of file format, both incoming and outgoing from the market and to the field tool to handle parent-child metering/sites.
    - Alterations to Service Order validations to support new market roles and relationships.
- NEM market interface system transfers:
    - Enhancement to the transfers' module to accommodate the ability for customers to transfer between retailers at the child level.
- NEM market interface system standing data reconciliation:
    - Alterations to processes to accommodate parent-child metering/sites.

- NEM market interface system market integration layer (transaction delivery):
    - Changes to file formats and validations to support altered transaction schemas.
- NEM market interface system meter data provider:
    - Alterations to the file format and extract processes to handle parent-child metering.
- NEM market interface system customer details:
    - Alterations to the file format received and validations to ensure meter details are received in conjunction with customer and retailer details.
- NEM market interface system - distribution billing:
    - Handling of network charges due to handle parent-child metering/site arrangements.
    - Altered dispute handling processes.
- Field tool changes (Currentl [redacted] due for replacement in 2018):
    - Alterations to Service Request and Work Order templates to support parent-child metering (impacted by Metering Contestability strategy).
    - Alterations to incoming and outgoing file formats.
    - Alterations to Service Order processes and scheduling to support embedded network arrangements.

The following supporting applications will also be impacted and require alterations to support embedded networks:

- MACCs.
- Customer Explorer.
- Business Process Monitor (BPM).

Change Management Impacts

The following business processes will require re-engineering and subsequently training and re-education throughout their user base:

- Service Order processes (Receipt, Scheduling, Execution and Completion).
- Market Interactions.
- Meter Reading.
- Distribution Billing.
- Life support processes.

High level implementation activities

High level activities identified to implement this initiative include:

- Analysis of TasNetworks obligation for Embedded Networks, including:
    - Identifying existing processes that will need to be changed and redrafting the 'To Be' process.
    - Identification of new processes that need to be introduced.
    - Elicitation of the full set of requirements for TasNetworks introducing Embedded Networks.
    - Identification of what requirements will be delivered via in-house development resulting in separate requirements documentation sufficient for an in-house build.
    - Identification of what requirements will be delivered via a known vendor resulting in separate requirements documentation sufficient for a vendor build.
- Review and sign-off on vendor supplied functional specifications for implementation.
- Design and build of in-house components.
- Deployment and testing of in-house and vendor supplied components in TasNetworks' environments. Testing will include SIT (ensuring all vendor components work with each other), and UAT (ensuring the business are happy with the new functions delivered).
- Deployment to the TasNetworks Production environment.
- Training of staff in the new functionality and new 'To Be' processes where relevant, including creation/update of all documentation (administrative or end user).
- External Communications – Current and potential customers will need to be made aware of the new functionality.

5.2 Expected outcomes and benefits

The outcomes and benefits are considered from a 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 will be used as part of the NPV calculations in chapter 6.

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, extra resources would not be required to account for loss of efficiency if the 'Do Nothing' option is selected ('Do Nothing' risks IT-054, IT-055 mitigated).	[redacted]
With the implementation of this initiative new retailer arrangements will be stored within our system and site	[redacted]

	billing can continue ('Do Nothing' risk IT-004 mitigated).	
	With the implementation of this initiative the risk of NECF fines will be reduced ('Do Nothing' risk IT-003 mitigated).	[redacted] (Maximum fines for 5 years of non-compliance)
	With the implementation of this initiative the risk that TasNetworks could potentially be required to outsource its metering services due to loss of accreditation is mitigated ('Do Nothing' risk IT-002 mitigated).	[redacted] p.a.

Intangible benefits

TasNetworks will have fulfilled its regulatory obligation.

This will have many intangible benefits including:

- Corporate reputation would be maintained.
- NUOS can be correctly calculated and billed in EN arrangements.
- The expanded service that TasNetworks offers could be an opportunity of 'good publicity' regardless of whether it taken up or not.
- It will minimise the likelihood of high level of scrutiny during market audits as a result of market non-compliance.
- The ability to deliver accurate data in a timely manner.
- Increase employee confidence in market systems, leading to a reduction in stress, frustration, overtime, retention issues of employees.
- Decrease the likelihood of human error.
- Employees will feel more valued.
- Reduced reliance of working outside of systems and processes
- Adds value to our assets by enabling reliable services.
- With the implementation of this initiative there will be a reduced likelihood of the CEO and other responsible staff facing jail time ('Do Nothing' risk IT-071 mitigated).

Customer and retailer's perspective	This initiative will support customers who aim to implement embedded networks. Customers will be able to select an 'Embedded Network Manager' who will help manage the installations on their behalf. It will also support embedded customer goals of accessing competitive market options. Upstream (network and any wholesale) cost pass-through will be more transparent to individual customers within an EN, making it more difficult for retailers to offer non-linear pricing to embedded customers. Predictable and sustainable pricing is maintained.

5.3 Regulatory Test

N/A

6. Options Analysis

Three options have been considered as described in the following chapter:

- Option 0 - Do Nothing.
- Option 1 – System Enhancement - EN will be implemented by making changes to a number of current vendor and in-house applications (preferred option).
- Option 2 – System Replacement - Replace market, back office, and field systems with vendor supplied alternative that includes EN capability. Noting that the Australian NEM interfaces are unique and will require custom development to accommodate them, this area contains a large amount of complex protocols and carries high risk.

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

- Solution effectiveness. Solution effectiveness is tested against the 'Investment Need' (detailed in chapter titled 'Investment Need'). In simple terms, does the option achieve the project objectives?
- Cost.
- Business impact – the selected option will consider the level of change to TasNetworks environment (including during project implementation and post implementation).
- Business Strategic alignment – does the option fulfil the business objectives and current business initiatives (detailed in chapter titled 'Strategic Alignment').
- IT strategic alignment.
- Project complexity – solutions will not be un-necessarily complex. Complexity introduces risk through combination of resource requirements, increased change etc.
- Risk profile – solutions will be risk adverse.
- Ability to achieve compliance – solutions will be fully compliant with all regulatory requirements and applicable industry standards.
- Time – ability to implement within regulatory deadline. 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.

6.1 Option Summary

Option 0 – Do Nothing

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

The 'Do Nothing' option will eventually require something to be done. If changes in the

regulatory environment occur as expected and this initiative does not progress, TasNetworks will need manual workarounds for various field processes. These workarounds will have a cost and will have a negative business impact.		
Criteria	**Advantages**	**Disadvantages**
Solution effectiveness	N/A	N/A
Cost	No initial CAPEX cost to consider for not delivering EN. However, as described under disadvantages there will be a cost!	If changes in the regulatory environment occur as expected and this initiative does not progress, TasNetworks will need manual workarounds for various field processes. These will be manually intensive requiring significant additional staff.
Business impact		Should TasNetworks need manual workarounds; the change impact to the TasNetworks will be significant. Processes will become manually intensive and overly complex.
Business strategic alignment		The business objective *'we understand our customers by making them central to all we do'* will not be fulfilled due to unpredictable pricing. The business objective, *'enable our people to deliver value'* will not be fulfilled due to potential negative business impacts. The business objectives, *'we care for our assets, delivering safe and reliable network services while transforming our business'* will not be fulfilled due to issues with compliancy, and risk.
IT strategic alignment	N/A	N/A
Project complexity	N/A	N/A
Risk profile		See chapter titled 'Current Risk Evaluation'.
Ability to achieve compliance		TasNetworks will not have met its regulatory compliance obligations of being part of NEM.
Time - ability to implement within a deadline	N/A	N/A

Option 1 – System enhancement.

EN will be implemented by making changes to a number of current vendor and in-house applications.

As this is the preferred option, the scope has already been covered in detail in the chapter titled 'Preferred Option'.

Criteria	Advantages	Disadvantages
Solution effectiveness	It will fulfil TasNetworks EN regulatory obligation.	
Cost	This option is the most cost effective option compared with option 2.	
Business impact	With regard to implementation, this option has the least impact to the business compared with option 2. It will only touch those parts of the business that EN impacts unlike option 2 which requires replacement of large systems that impact many processes.	
IT strategic alignment	TasNetworks market systems are contemporary and built for Australia's NEM. These systems will not be considered at end of life until past 2020. 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 It will be 'fit for purpose'. It will align with current IT infrastructure. It will align with other IT road map initiatives.	
Strategic alignment	It will fulfil the business objectives of *'we understand our customers by*	

	making them central to all we do', 'enable our people to deliver value', 'we care for our assets, delivering safe and reliable network services while transforming our business' detailed in the chapter titled 'Business Objectives'. It will align with the business initiatives detailed in the chapter titled 'Business Initiative Alignment'.	
Project Complexity	This option has less complexity compared with Option 2, as it will only touch those parts of the business that EN impacts unlike option 2	
Risk profile	This option has a minimal risk profile compared with Option 2.	
Ability to achieve compliance	By selecting a solution that leverages the expertise and conformity of vendor products designed for NEM market interfaces, will help ensure compliance with regulatory and industry standards. In-house components will be built to conform with regulatory and industry standards.	
Time - ability to implement within a deadline	Regulatory milestones will be put in place. This option has a shorter implementation timeframe compared with Option 2, as it will only touch those parts of the business that EN impacts unlike option 2. It has been assessed as only impacting 1% of system functions and any regulatory milestones should be achievable.	

Option 2 – System replacement.

Replace market, back office, and field systems with vendor supplied alternative that includes EN capability.

This option is not feasible or appropriate for such requirements. It is included here for informational purposes.

The scope for this option goes far beyond that described for option 1. The scope will include the total replacement of market, back office, and field systems with EN already built in. The functional requirements will be significantly greater than that for option 1 (estimated to be less than 1% of the requirements for this option).

Noting that the Australian NEM interfaces are unique and will require custom development to accommodate them, this area contains a large amount of complex protocols and carries high risk.

The implementation activities will also be more expansive. Key differences in high level activities include:

- Elicitation of the full set of requirements would need to encapsulate the entire requirements for the market, back office, and field systems. The requirements would cover a big percentage of TasNetworks overall business requirements as most parts of the business would be impacted in some way. To engage all parts of the business would be resource intensive and time consuming.
- Solution evaluation and then selection will be complex. It is very unlikely that any vendor solution would meet every requirement using a single system and that proposed solutions would involve complex integrations.
- The testing effort will enormous and larger than the organisation has ever undertaken previously. As everything will be new, testing will have to be detailed and thorough. It will also require detailed performance testing to ensure the new products works within TasNetworks infrastructure.
- Every potential user group would have to be re-trained.

Criteria	Advantages	Disadvantages
Solution effectiveness	It will fulfil TasNetworks EN regulatory obligation.	
Cost		Due to the more expansive scope, it is a higher cost option compared with option 1 (option 1 is estimated to impact less than 1% of the functionality that this option proposes).
Business impact		Due to the more expansive scope, the change impact will be high compared with option 1 (option 1 is estimated to impact less than 1% of the functionality that this option proposes). During implementation, most parts of the business will be largely impacted. The business will have to be widely and intensively engaged during requirements gathering and UAT exercises.

		Introducing a new expansive system is going to require adjustments and compromises to existing processes which may lead to backward efficiency and effectiveness outcomes.
Business strategic alignment	The business objective *'we understand our customers by making them central to all we do'* will be fulfilled.	The business objective, *'enable our people to deliver value'* will not be fulfilled due to potential negative business impacts. The business objectives, *'we care for our assets, delivering safe and reliable network services while transforming our business'* will not be fulfilled due to issues with complexity, and risk. It may not align with the business initiatives detailed in the chapter titled 'Business Initiative Alignment', in that it will not support the aims of lowest sustainable pricing.
IT strategic alignment	Solutions will be selected that leverage the expertise and conformity of vendor products designed for NEM market interfaces. Solutions will be selected that are maintainable and supported.	The reality is that no vendor solution will 100% meet the requirements and compromises might have to be made with regard works practices/processes introducing inefficiencies. On the extreme, the compromises might even mean the solution is not 'Fit For Purpose' when delivered. It may result in changes to current IT infrastructure. The enormity of the project may mean it will not sensibly align with other initiatives on the IT roadmap meaning other initiatives are delayed or cancelled.
Project complexity		The complexity of this solution will be high due to the expansive scope.
Risk profile		There is a higher chance that when the solution is implemented, it will not meet TasNetworks expectations. Processes that used to work may no longer work because of new system constraints that were only identified post implementation.
Compliance	By selecting a solution that leverages the expertise and	

	conformity of vendor products designed for NEM market interfaces will ensure compliance.	
Time - ability to implement within a deadline		Regulatory milestones will be put in place. Because of the expansive scope there is a possibility that TasNetworks will not be able to meet these regulatory milestones.

6.2 Summary of Drivers

The following table compares the options presented with regard to the criteria assessed in the previous chapter.

Criteria	Option 0	Option 1	Option 2
Solution effectiveness	N/A		
Cost			
Business Impact			
Business Strategic alignment			
IT strategic alignment	N/A		
Project complexity	N/A		
Risk profile			
Ability to achieve compliance			
Time - ability to implement within a deadline	N/A		

Key			
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
Ability to achieve compliance	Easy	Moderate	Hard
Time - ability to implement within a deadline	Easy	Moderate	Hard

6.3 Summary of Costs

Option	Total Costs ($)
0 – Do Nothing	No Capital Expenditure
1 – Modify existing systems	$3,574,320
2 – Replace market, back office, and field systems	$70,000,000

6.4 Preferred Option Cost Breakdown

	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
Estimate ($)	3.0M	0.6M								
Total ($)	$3,574,320									

6.5 Summary of Risk

The preferred option addresses Regulatory Compliance, Customer and Financial risks, as analysed utilising the corporate risk matrix, as outlined in TasNetworks Risk Management Framework.

Risk Category	Risk	Impact	Mitigation	Risk Rating
Regulatory Compliance	[redacted]	TasNetworks is noncompliant with laws and regulations.	Initiative will allow TasNetworks to maintain compliance.	Low
Financial	[redacted]	Loss of revenue.	Initiative will maintain effectiveness of billing systems.	Low
Financial	[redacted]	Loss of efficiency and potentially not meeting required timelines.	Initiative will maintain effectiveness of service order systems.	Low
Customer	[redacted]	Retailer disputes and issues.	Initiative will maintain effectiveness of billing systems.	Low
Financial	[redacted]	Higher costs to	Timing of Service	Low

	[redacted]	complete the initiative.	Order Scheduling and Field Tool initiative will need to be set to not impact this initiative.	
Safety & People	[redacted]	The CEO and other responsible staff may face jail time as result of compliance breaches.	Initiative results in compliance.	Medium

6.6 Economic analysis

Undertaking an NPV calculation of this initiative is largely unfeasible. The quantifiable benefits of keeping in line with regulatory and legislative changes are highly speculative, and rely upon some significant assumptions.

For the purposes of demonstrating the magnitude of the potential risks of not undertaking this initiative, a high-level assessment of the costs associated with not being compliant with the regulatory environment in which TasNetworks operates have been estimated in the calculations below.

Option No.	Option description	NPV	Reason got selection/rejection
0	Do Nothing	$0	Regulatory implications
1	Modify current systems	-$1,365,158	Lowest cost/greatest benefit
2	Replace market, back office, and field systems	-$54,584,964	Excessive capital expenditure

6.6.1 Quantitative Risk Analysis

N/A

6.6.2 Benchmarking

This section is not applicable as this regulatory change has not been implemented across the NEM yet. There are no DNSPs to benchmark the preferred option against.

6.6.3 Expert findings

In June 2014, as part of the report titled *Benefits and Costs of Multiple Trading Arrangements and Embedded Networks,* cost estimates were sourced from a survey undertaken by AEMO retailers, and distribution network providers.

The estimates found that the average overall cost to implement the MTR initiative for a DNSP was $1,759,833. This was attributed across the following categories:

- Registration ($469.667).
- Metering Cost ($351,833).
- Operations ($377,000).
- Billing ($385,500).
- Reporting ($175,833).

The following table is an extract from the report [3]

Exec Table- 1 Overall costs provided in survey, per market participant ($)

		MTR	EN option1	EN option2 Cost	MTREN
Implementation					
Retailer	mean	13,051,000	7,832,400	3,095,800	8,215,820
	median	15,573,000	7,228,000	1,410,000	6,915,300
	max	50,100,000	17,082,000	10,246,000	19,698,000
DNSP	mean	10,464,833	1,759,833	1,701,000	1,697,067
	median	9,891,500	353,000	227,000	25,000
	max	18,191,000	9,046,000	9,046,000	9,581,400
Ongoing costs					
Retailer	mean	7,765,400	3,555,400	2,784,400	3,384,320
	median	5,719,000	1,810,000	1,010,000	1,582,600
	max	20,100,000	11,046,000	9,846,000	9,741,800
DNSP	mean	2,738,500	980,000	946,667	245,167
	median	2,010,000	250,500	175,500	0
	max	7,537,000	4,726,000	4,726,000	1,279,100

Note: Not all respondents provided data for the MTREN scenario. For the benefit-cost analysis for that scenario, costs for these respondents were derived from their cost estimates for MTR and EN scenarios deflated by the same economies in costs recorded by those participants who did provide comparable data for all scenarios.

6.6.4 Assumptions

The following are inclusive of project and financial assumptions.

Assumption ID	Assumption Description
ITA-042	It is assumed that as part of one of the major initiatives that involves significant changes to [redacted] (e.g. CST 01, 02, 03), that it will also be used as an opportunity to perform [redacted] This will require extensive regression testing of all [redacted] functionality to ensure TasNetworks customisations have been [redacted]
ITA-055	If systems are not put in place to handle embedded networks, an extra [redacted] ould be required to handle the

[3] Jacobs SKM (2014), *Benefits and Costs of Multiple Trading Arrangements and Embedded Networks*

	billing/invoicing of the affected installations.
ITA-056	If systems are not put in place to handle multiple trading relationships, [redacted] would be required to handle the manual handling of the standing data of the affected installations.
ITA-103	If TasNetworks fail to be compliant with its Distribution Licence, the National Electricity Law, and the National Electricity Rules, it may face losing its accreditation to supply metering services, which makes up an estimated 30% of the total daily register charge. It has been assumed that under these circumstances, TasNetworks would be forced to engage an external contractor to provide these services. This is estimated to cost [redacted] per annum currently. If it were to be contracted out, it has been assumed to cost [redacted] i.e. [redacted] above what it costs internally).
ITA-109	Replacing the current MDMS would be a very large initiative. This option has been put forward as the alternative option for the Metering Contestability, Embedded Networks, and Multiple Trading Relationships initiatives. High-level estimates are that replacing MDMS would cost approximately [redacted].

Section 2 Approvals (Gated Investment Step 2)

Business Unit Review:	[redacted]	**Date**	17/06/2015
IT Project Initiator:	[redacted]	**Date**	18/05/2015
IT Thread Approved:	[redacted]	**Date**	18/05/2015
Manager (Network projects) or Group/Business Manager (Non-network projects):		**Date**	
[Send this signed and endorsed Summary to the Capital Works Program Coordinator.]			

Actions			
Submitted for CIRT review:		**Actioned by:**	
CIRT outcome:			