Investment Evaluation Summary (IES)

Project Details:

Project Name:	Replace Substation Locks
Project ID:	00511
Thread:	Ground Mounted Substations
CAPEX/OPEX:	CAPEX
Service Classification:	Standard Control
Scope Type:	B
Work Category Code:	REGMQ
Work Category Description:	Replace Ground Mtd Sub
Preferred Option Description:	Replace substation locks
Preferred Option Estimate (Nominal Dollars):	$386,000

	17/18	18/19	19/20	20/21	21/22	22/23	23/24
Unit ($)	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Volume	50	50	50	50	50	50	36
Estimate ($)	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$36,000
Total ($)	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$36,000

Governance:

Project Initiator:	Jarad Hughes	**Date:**	20/03/2015
Thread Approved:	David Ellis	**Date:**	02/11/2015
Project Approver:	David Ellis	**Date:**	02/11/2015

Document Details:

Version Number:	1

Related Documents:

Description	URL
IES REGMQ Replace locking mechanism on ground mounted subs	http://projectzone.tnad.tasnetworks.com.au/business-projects/nis-program/DD17SAM/Deliverables/Ground%20Mounted%20Substations/DRAFT%20IES%20REGMQ%20Replacement%20Locking%20Mechanisms%20on%20Kiosk%20Substation%20Doors.docx

Section 1 (Gated Investment Step 1)

1. Background

Two incidents have occurred within the last two years that involved kiosk block wall type substation doors being found on the ground which resulted in energised electrical apparatus being exposed to the public. An example can be seen in Figure 1 below which occurred in Hobart's CBD, where a live front low voltage (LV) board was exposed to the public.

It is believed that both of the recent incidents were as a result of members of the public breaking into the substations. These doors have night latch style locking mechanisms which can be pried upon with simple tools. There is also the possibility of doors falling off if they are not closed properly following routine maintenance or substation inspections.

Figure 1 - Door found on ground exposing live front LV board

1.1 Investment Need

To ensure safety to the public new locking mechanisms need to be installed. It is proposed that all kiosk block wall type substation doors be fitted with dead-latches so that they cannot easily be broken into.

The unit rate of this type of lock replacement is $1000 and was determined from TasNetworks' historical spend.

1.2 Customer Needs or Impact

TasNetworks continues to undertake consumer engagement as part of business as usual and through the voice of the customer program. This engagement seeks in depth feedback on specific issues relating to:

- how it prices impact on its services
- current and future consumer energy use
- outage experiences (frequency and duration) and expectations
- communication expectations
- STPIS expectations (reliability standards and incentive payments)
- Increasing understanding of the electricity industry and TasNetworks

Consumers have identified safety, restoration of faults/emergencies and supply reliability as the highest performing services offered by TasNetworks.

Consumers also identified that into the future they believe that affordability, green, communicative, innovative, efficient and reliable services must be provided by TasNetworks.

This project specifically addresses the requirements of consumers in the areas of safety and affordability.

1.3 Regulatory Considerations

This project is required to achieve the following capital and operational expenditure objectives as described by the National Electricity Rules section 6.5.7(a).

(4) maintain the safety of the distribution system through the supply of standard control services.

2. Project Objectives

The objective of this project is to replace all locking mechanisms on kiosk block wall type substation doors with dead latches, minimising the lieklihood of exposing the public to energised electrical apparatus.

3. Strategic Alignment

3.1 Business Objectives

Strategic and operational performance objectives relevant to this project are derived from TasNetworks 2014 Corporate Plan, approved by the board in 2014. This project is relevant to the following areas of the corporate plan:

- We understand our customers by making them central to all we do.
- We enable our people to deliver value.
- We care for our assets, delivering safe and reliable networks services while transforming our business.

3.2 Business Initiatives

The business initiatives that relate to this project are as follows:

- Safety of our people and the community, while reliably providing network services, is fundamental to the TasNetworks business and remains our immediate priority
- We care for our assets to ensure they deliver safe and reliable network services

The strategic key performance indicators that will be impacted through undertaking this project are as follows:

- Price for customers – lowest sustainable prices
- Zero harm – significant and reportable incidents
- Sustainable cost reduction – efficient operating and capital expenditure

4. Current Risk Evaluation

If TasNetworks did not address the locking mechanism issue unauthorised access to energised electrical apparatus may occur. This could result in death or serious injury to a member of the public as a result of contacting energised equipment.

The business risk associated with these assets has been evaluated by using the TasNetworks Risk Framework..

The level of risk identified was such that a treatment plan is required to reduce these down to a manageable level.

4.1 5x5 Risk Matrix

TasNetworks business risks are analysed utilising the 5x5 corporate risk matrix, as outlined in TasNetworks Risk Management Framework.

Relevant strategic business risk factors that apply are follows:

Risk Category	Risk	Likelihood	Consequence	Risk Rating
Safety and People	Death or serious injury to a member of the public from contacting energised electrical equipment	Unlikely	Major	Medium

Section 1 Approvals (Gated Investment Step 1)

Project Initiator:	Jarad Hughes	**Date:**	20/03/2015
Line Manager:		**Date:**	
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:

To ensure safety to the public new locking mechanisms need to be installed. It is proposed that all kiosk block wall type substation doors be fitted with dead-latches so that they cannot easily be broken into.

5.1 Scope

As of February 2015 TasNetworks owns and maintains 336 kiosk block wall substations in Tasmania. The majority of these substations contain two doors as can be seen in the example in Figure 2 below.

The scope of work will include replacement of the existing night-latch style locks with dead-latch type locks on both the low voltage and high voltage switchgear doors.

Figure 2 - Kiosk block wall substation

5.2 Expected outcomes and benefits

Following the completion of this work it is expected that TasNetworks will not have any more incidents where kiosk block wall substation doors are found on the ground exposing energised equipment.

5.3 Regulatory Test

Not appllicable

6. Options Analysis

6.1 Option Summary

Option description	
Option 0	Do nothing
Option 1 (preferred)	Replace substation locks

6.2 Summary of Drivers

Option	
Option 0	• Does not reduce the likelihood of exposure of the public to energised electrical equipment
Option 1 (preferred)	• Costs in completing this work are sustainable • Minimises likelihood of exposure to the public

6.3 Summary of Costs

Option	Total Cost ($)
Option 0	$0
Option 1 (preferred)	$386,000

6.4 Summary of Risk

1. **Summary of Risk**

Option 0: Do Nothing

The risk of death or serious injury to a member of the public is still maintained as a medium rating if do nothing is chosen as the preferred outcome.

Option 1: Replace Locking Mechanisms [Preferred Option]

The likelihood of unauthorised access to one of these substations is largely reduced (from unlikely to rare) if the locking mechanisms are replaced with a more secure option. The risk is still maintained as a Medium, but it is believed that this option is the most prudent spend.

6.5 Economic analysis

Option	Description	NPV
Option 0	Do nothing	$0
Option 1 (preferred)	Replace substation locks	$0

6.5.1 Quantitative Risk Analysis

Not applicable

6.5.2 Benchmarking

Maintaining security to substations is considered a high priority to both TNSPs and DNSPs around Australia. Similar work is completed by other utilities to ensure no unauthorised access occurs.

6.5.3 Expert findings

Not applicable

6.5.4 Assumptions

It has been assumed that between 2014/15 and the start of the regulatory period (2017/18) none of the kiosk block wall type substations will have been replaced or removed from the system.

Section 2 Approvals (Gated Investment Step 2)

Project Initiator:	Jarad Hughes	**Date:**	20/03/2015
Project Manager:		**Date:**	

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