

Investment Evaluation Summary (IES)



Project Details:

Project Name:	Install/Augment HV Feeder (TRIP-P)
Project ID:	00787
Thread:	Reliability
CAPEX/OPEX:	CAPEX
Service Classification:	Standard Control
Scope Type:	A
Work Category Code:	PRHVR
Work Category Description:	Upgrade HV Fdrs (Reliability)
Preferred Option Description:	Upgrade HV Feeder sections such that the reliability performance at a community and/or category level is improved
Preferred Option Estimate (Nominal Dollars):	\$0

	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
Unit (\$)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Volume	1	1	1	1	0	0	0	0	0	0
Estimate (\$)										
Total (\$)	\$1,852,500	\$1,990,000	\$1,921,250	\$1,921,250	\$0	\$0	\$0	\$0	\$0	\$0

Governance:

Project Initiator:	Ewan Sherman	Date:	30/03/2015
Thread Approved:	Stephen Jarvis	Date:	19/10/2015
Project Approver:	Stephen Jarvis	Date:	19/10/2015

Document Details:

Version Number:	1
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Related Documents:

Description	URL
Network Development Management Plan	-
Summary Report - Community and Feeder Reliability	-

Section 1 (Gated Investment Step 1)

1. Background

Reinforcement works on the High Voltage (HV) feeder network include elements operating at 6.6 kV, 11 kV, 22 kV, 33 kV or 44 kV (including SWER). The main components of HV network includes:

- Overhead conductor
- Underground cable
- Voltage regulators
- Overhead switchgear (Reclosers, Gas Switches, ABS, Fuses, Links)
- Ground mounted switchgear (generally components of Distribution Substations)

Planning at this level also includes network development works associated with addressing and maintaining reliability performance. This includes:

- Addressing the worst performing HV feeders;
- Addressing the poorest performing Reliability Communities.
- Maintaining Reliability Category performance at a system level.

This reliability reinforcement program includes targeted augmentation development projects to restore the performance of the poorest performing reliability communities and worst performing feeders towards the performance thresholds as described in the TEC, with the objective of meeting our Reliability Strategy.

This program will operate until 20/21 - as the TRIP-P feeder program that addresses existing poor performing communities finishes.

1.1 Investment Need

The Reliability program manages network risk associated with operational limitations of distribution elements that contribute to poor Feeder, Community (TEC) and system (STPIS) performance, as measured in terms of SAIDI, SAIFI, and GSL payment reporting.

1.2 Customer Needs or Impact

TasNetworks continues to undertake a 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); and
- Increase 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, restoration of faults/emergencies and supply reliability.

1.3 Regulatory Considerations

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

Forecast capital expenditure

1. meet or manage the expected demand for standard control services over that period;
2. comply with all applicable regulatory obligations or requirements associated with the provision of standard control services;
3. to the extent that there is no applicable regulatory obligation or requirement in relation to:
 - o the quality, reliability or security of supply of standard control services; or
 - o the reliability or security of the distribution system through the supply of standard control services, to the relevant extent:
 - o maintain the quality, reliability and security of supply of standard control services; and
 - o maintain the reliability and security of the distribution system through the supply of standard control services; and
4. maintain the safety of the distribution system through the supply of standard control services.

2. Project Objectives

To evaluate the HV distribution networks that supply those reliability communities and feeders that have been identified as non-compliant or worst performing within the planning period to 2027 in accordance with regulatory requirements.

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 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
- We will transform our business with a focus on: - an appropriate approach to the management and allocation of risk The strategic key performance indicators that will be impacted through undertaking this project are as follows:
 - o Customer engagement and service – customer net promoter score
 - o Price for customers – lowest sustainable prices
 - o Network service performance – meet network planning standards

4. Current Risk Evaluation

The current risk evaluation is Medium to High.

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
Customer	<p>Material Supply Interruption, and contribution towards:</p> <ul style="list-style-type: none"> • substandard performance (SAIFI and SAIDI) • unavailability of network services • negative impact on community values and expectations • Increased customer complaints • Reputation damage 	Possible	Moderate	Medium
Environment and Community	<p>Significant localised environmental impact with short-term effects where there is an Increased risk of conductor clashing or failure leading to interruptions and fire ignition and explosion and expulsion of oil, particular in regards to:</p> <ul style="list-style-type: none"> • High bushfire risk areas; • Area's of environmental significance 	Possible	Moderate	Medium
Financial	<p>Higher cost associated with repairing equipment under fault, compensation payments, under regulatory regime - STPIS outcomes;</p>	Possible	Minor	Low
Network Performance	<p>Running the system in an insecure state or above its capability that may lead to consequential failures</p> <p>Protection operation initiated interruptions to supply</p> <p>Rotational interruptions to supply to manage equipment loading and downed networks</p>	Possible	Moderate	Medium
Regulatory Compliance	<p>Non-compliance with obligations, resulting in:</p> <ul style="list-style-type: none"> • Minor fine, or • breach of code and standard or licence for TEC, NER, 	Possible	Minor	Low

	<p>connection agreements, legislation and regulation</p> <ul style="list-style-type: none"> • Failure of assets 			
Reputation	<p>Non-sustained state press coverage including wider social media coverage, particularly in regards to:</p> <ul style="list-style-type: none"> • High bushfire risk areas; • Area's of environmental significance 	Possible	Minor	Low
Safety and People	<p>Explosion, or decreased operating clearances resulting in:</p> <ul style="list-style-type: none"> • Increasing risk of third party contact • Electric shock or electrocution • Physical damage or harm. 	Possible	Negligible	Low

Section 1 Approvals (Gated Investment Step 1)

Project Initiator:	Ewan Sherman	Date:	30/03/2015
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:

Installation and/or augmentation of HV feeder sections including feeder trunk strategy, new feeders and feeder interconnections to maintain reliability performance at a Community or Category level in accordance with the TasNetworks Reliability Strategy and network Development Management Plan

5.1 Scope

The reliability reinforcement programs for non-compliant communities and poor performing feeders are then estimated based on a bottom up approach, and segregated across the current regulatory period, the subsequent two year and five year determinations. This approach concludes that:

- all existing worst performing feeders (worst 7) will be addressed within the 15/16, 16/17, 17/18 and 18/19 programs of work; and
- 50% of all existing non-compliant communities will be addressed within the 16/17, 17/18 and 18/19 programs of work (~20 communities);
- Remaining 50% of all existing non-compliant communities will be addressed within the 19/20 & 20/21 programs of work (~20 communities).

There are large augmentation projects proposed, These projects include:

- Wesley Vale feeder development;
- Feeder development from Palmerston Substation;
- Feeder development from Railton;
- Feeder extensions from Scottsdale;
- Rosebery 44 kV reinforcement (remote controlled ABS deployment); and
- Bruny Island standby generation.

The majority of augmentation projects are however associated with Feeder Trunk Strategies (Reinforcement of the feeder trunk section between the substation circuit breaker and first or second protection device i.e. Protection Zones 1 & 2), which include:

- Visual audit of vegetation and asset condition of the feeder trunk section
- Strategic vegetation management;
- Strategic asset replacement/relocation;
- Protection coordination review;
- Protection Zone 2 device upgrades as required.

5.2 Expected outcomes and benefits

Identified performance issue rectified such that the reliability performance at a Community and/or Category level is Improved

5.3 Regulatory Test

Not applicable.

6. Options Analysis

The following tables provide a brief summary of the options considered as part of a desk top assessment and in accordance with the Network Development Management plan

6.1 Option Summary

Option description	
Option 0	Do nothing
Option 1 (preferred)	Upgrade HV Feeder sections such that the reliability performance at a community and/or category level is improved

6.2 Summary of Drivers

Option	
Option 0	Allow community or category performance to continue to trend away from target performance levels; resulting in higher STPIS penalties and/or GSL payments
Option 1 (preferred)	Community reliability has an impact on state wide Category network performance. The preferred option (from the available options detailed in the Options Summary) will rectify the localised community reliability issue such that the reliability performance at a Community level is maintained in accordance with TasNetworks obligations under the TEC; providing some benefit on maintaining reliability performance at a state wide category level in accordance with TasNetworks Reliability Strategy.

6.3 Summary of Costs

Option	Total Cost (\$)
Option 0	\$0
Option 1 (preferred)	\$0

6.4 Summary of Risk

As a result of the program the target risk assessment will be Low.

6.5 Economic analysis

Option	Description	NPV
Option 0	Do nothing	\$0
Option 1 (preferred)	Upgrade HV Feeder sections such that the reliability performance at a community and/or category level is improved	\$0

6.5.1 Quantitative Risk Analysis

Not applicable.

6.5.2 Benchmarking

Not applicable.

6.5.3 Expert findings

Not applicable.

6.5.4 Assumptions

Not applicable.

Section 2 Approvals (Gated Investment Step 2)

Project Initiator:	Ewan Sherman	Date:	30/03/2015
Project Manager:		Date:	

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