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Project description

Condition assessment reports identified issues with the selected assets. Significant consequences of failure to personel and network exist in the event of insulator failure, if it were not replaced. Primarily the consequences relate to network availability and safety, but also include: reputation, environment and financial. This project is required to refurbish insulator systems on selected lines to achieve a life extension of the overall asset. The project is to be completed in the 2018-23 regulatory period. The feeder identified for insulator replacement is F1940 PARAFIELD GARDENS WEST - PARA 275kV Line - 54 structures.

Project options

Base case	Business as usual with no capital expenditure.
Option 1	Replacement in 2018-2023
Option 2	Replacement in 2023-2028

Key modelling assumptions

Financial year runs from 1 July to 30 June.

Real 2018 \$ are used for all monetary values unless otherwise stated.

Inputs to the model

Parameter/Input	Description	Source
Discount rate	Real pre-tax discount rate	ElectraNet estimate
Current financial year	Year to start analysis	When the capital investment is due to occur for the project
Time horizon	Length of time under consideration	Total project life including useful life and if the project occurred in the next regulatory period
Capital costs	Amount of capital investment in real terms for each project option	Estimated capital costs in the estimate from project center
Useful life	Length of time capital investments are expected to provide service	Useful life estimated from orginal economic justification on project center
Routine maintenance	Annual amount of estimated routine maintenance in real terms	See Detailed Opex Assessment
Corrective maintenance	Annual amount of estimated corrective maintenance in real terms	See Detailed Opex Assessment
Risk	Annual cost of risk if the unit is not replaced	See Detailed Risk Assessment

R0 CBA Results

Sensitivities, results and rankings

Input Summary

Parameter selection for sensitivity analysis

Capital cost

Scenario parameters		Capital cost scenario		
	Units	Low	Medium	High
Assumed scenario weighting	% weighting	33%	33%	33%
Discount rate	% real, pre-tax	6.00%	6.00%	6.00%
Capital cost	% of estimate	70%	100%	130%

Cost selection for sensitivity analysis

Routine Maintenance

Scenario cost inputs		Routine Maintenance scenario		
	Units	Low	Medium	High
Routine Maintenance	% of estimate	70.0%	100.0%	130.0%

Benefit selection for sensitivity analysis

Risk Cost Reduction

Scenario benefit inputs		Risk Cost Reduction scenario		
	Units	Low	Medium	High
Risk Cost Reduction	% of estimate	50.0%	80.0%	100.0%

Cost Benefit Analysis Results (Quantitative)

Output summary

Net present value of benefits

NPV results		Scenario			Weighted
Option	Units	Low	Medium	High	NPV
Option 1	2018 \$	29,321,737	46,952,757	58,675,122	44,983,205
Option 2	2018 \$	19,298,099	30,908,077	38,622,130	29,609,435

Output summary

Ranking of options

Ranking of options		Scenario			Weighted
Option	Units	Low	Medium	High	ranking
Option 1	2018 \$	1	1	1	1
Option 2	2018 \$	2	2	2	2