

# 12115 Telecommunications Unit Asset Replacement

## Contents

|                                  | <b>Tab</b> |
|----------------------------------|------------|
| <a href="#">Inputs</a>           | I0         |
| <a href="#">Calculations</a>     | C0         |
| <a href="#">Cashflow</a>         | C1         |
| <a href="#">CBA results</a>      | R0         |
| <a href="#">Cashflow results</a> | R1         |

## Cell colour key

### Header 1

### Header 2

### Table Header

| <b>Format</b>    | <b>Example</b> |
|------------------|----------------|
| Table Row Name   | Text           |
| Input Cell       |                |
| Calculation cell |                |
| Parameter Cell   |                |
| Output Cell      |                |

## Project description

ElectraNet's transmission network is one of the most extensive regional transmission systems in Australia, extending across some 200,000 square kilometres of the State. Overlaying the transmission network is a Telecommunications Network, required to carry protection, SCADA, telephony and various other operational and business data.

The Telecommunication Asset Management Plan identified assets whose performance and maintainability is degrading to an extent that it increases the risk to the operability and stability of the transmission network.

In accordance with ElectraNet's Asset Management Plan, telecommunications assets were rated using the SCAR coding framework to determine the asset risk profile. This project is required to replace those assets that fall under the high risk category.

This project is required to be undertaken in the period 2019-2023.

## Project options

|                                                                |                                                                                                                                                                                                                                         |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Base case</b>                                               | Units are run to failure with emergency replacement of telecommunications asset as required.                                                                                                                                            |
| <b>Option 1 Install Telecommunications Assets in 2019-2023</b> | A planned replacement program is undertaken in 2019-2023.                                                                                                                                                                               |
| <b>Option 2 Undertake option 1 in next regulatory period</b>   | The planned replacement program is delayed by five years to 2024-2028. This option includes emergency replacement for the first five years and a reduction in the assets required to be replaced under the planned replacement program. |

## 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    | Detailed Costs Assessment and Telecommunication Asset management plan                              |
| Useful life                   | Length of time capital investments are expected to provide service    | Useful life estimated from original economic justification on project center                       |
| Emergency Response to failure | Annual cost of responding to unit asset failure assuming 5% will fail | Detailed Cost Assessment                                                                           |



## R0 CBA Results

Sensitivities, results and rankings

### Input Summary

#### Parameter selection for sensitivity analysis Discount rate

| Scenario parameters        | Units           | Discount rate scenario |        |       |
|----------------------------|-----------------|------------------------|--------|-------|
|                            |                 | Low                    | Medium | High  |
| Assumed scenario weighting | % weighting     | 33%                    | 33%    | 33%   |
| Discount rate              | % real, pre-tax | 4.50%                  | 6.00%  | 8.50% |
| Capital cost               | % of estimate   | 100%                   | 100%   | 100%  |

#### Cost selection for sensitivity analysis Emergency response to failure

| Scenario cost inputs          | Units         | Emergency response to failure scenario |        |        |
|-------------------------------|---------------|----------------------------------------|--------|--------|
|                               |               | Low                                    | Medium | High   |
| Emergency response to failure | % of estimate | 70.0%                                  | 100.0% | 130.0% |

### Cost Benefit Analysis Results (Quantitative)

#### Output summary Net present value of benefits

| NPV results<br>Option | Units   | Scenario  |           |           | Weighted<br>NPV |
|-----------------------|---------|-----------|-----------|-----------|-----------------|
|                       |         | Low       | Medium    | High      |                 |
| Option 1              | 2018 \$ | 1,302,379 | 1,180,037 | 1,004,650 | 1,162,355       |
| Option 2              | 2018 \$ | 382,603   | 334,233   | 267,835   | 328,224         |

#### Output summary Ranking of options

| Ranking of options<br>Option | Units   | Scenario |        |      | Weighted<br>ranking |
|------------------------------|---------|----------|--------|------|---------------------|
|                              |         | Low      | Medium | High |                     |
| Option 1                     | 2018 \$ | 1        | 1      | 1    | 1                   |
| Option 2                     | 2018 \$ | 2        | 2      | 2    | 2                   |