Attachment G.8

SAPN_Reliabiity_Poorly served communities

03 July, 2015

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1. Executive Summary

The purpose of this business case is to seek approval for $2.4 (June 2015, $ million) to implement initiatives to address the unacceptable reliability performance of SA Power Networks' poorly served remote communities (Hawker and Elliston), over the 2015-20 Regulatory Control Period (**RCP**).

In our Original Proposal, SA Power Networks proposed a specific program to remediate the distribution feeders supplying the townships of Hawker in the Flinders Ranges and Elliston on the Eyre Peninsula. The reliability performance of these feeders consistently and significantly exceeds the reliability targets for those regions.

Hawker experiences an average annual SAIDI of 1,339 minutes compared to the current target in the Electricity Distribution Code (**EDC**) for its geographical area of 425 minutes. Similarly, the average annual SAIDI for Elliston has been 1,512 minutes compared to the current target in the EDC for its geographical area of 425 minutes. These feeders have not been included in the 31 low reliability feeders identified in the low reliability feeder program discussed above.

The Hawker and Elliston program was developed as a direct result of customers' concerns raised in our CEP workshops held in regional locations. These workshops reaffirmed the requirement for a reliable supply comparable with other townships within their region.

This project aims to reduce average recorded SAIDI for both communities by at least 400 minutes per annum. With this said, although our underlying reliability performance on the Network may demonstrate a better than the NEM average, this average tends to mask the actual performance experienced by some customers as demonstrated above.

SA Power Networks undertook a comprehensive Customer Engagement Program (**CEP**) prior to preparing its Original Proposal. Throughout our CEP, customers and stakeholders expressed support for programs aimed at:

- further protecting some parts of the network, particularly in regional areas which are more susceptible to damage from storms, especially lightning strikes; and

- upgrading and reinforcing the network where the network supply configuration to an area is susceptible to failure (eg single radial supply lines in rural and remote areas).

In particular during our CEP the communities of Elliston on the Eyre Peninsula and Hawker in the Finders Rangers (two communities which have a significant history of very poor performance influenced by their location) reaffirmed their need for a robust network supplying their communities.

In accordance with the National Electricity Rules in 6.5.7 (e), this business case seeks to address the specific concerns of electricity customers by remediating the upstream network supplying these two poorly served communities, while understanding that it would be difficult and extremely expensive to re-design a full network to withstand all causes of poor reliability.

This proposal is based on targeted cost effective reliability solutions that aim to mitigate the impact on these two poorly served communities. The net STPIS impact has been calculated (+$132k p.a.) and SA Power Networks won't materially benefit financially from this program as the small modelled benefit will be largely offset by the equivalently modelled STPIS penalties expected under the separate 'hardening the network' program.

From a customer perspective, the poorly served communities program has a net customer VCR benefit of the order of $0.22m p.a. and therefore a net present benefit of $0.5m (NPV = +$0.5m over 35 years), using VCR as an indicator of the value of reliability to customers.

A positive NPV in this case indicates that the value to customers is greater than the cost of the improvements and therefore would be in the long term interests of customers.

2. Rule requirement

Clause 6.5.7(a) of the National Electricity Rules (**NER**) provides that SA Power Networks must submit a building block proposal that includes a forecast of the capital expenditure required to meet the capital expenditure objectives for the 2015-20 RCP. This includes capital expenditure required to comply with all applicable regulatory obligations or requirements associated with the provision of Standard Control Services (**SCS**) and to maintain the reliability of SA Power Networks' SCS.

The AER must accept the proposed capital expenditure forecast that SA Power Networks includes in its building block proposal if the AER is satisfied the forecast capital expenditure for the 2015–20 RCP reasonably reflects the capital expenditure criteria. In making this assessment the AER must have regard to the capital expenditure factors.

In particular, in assessing the expenditure required to comply with all of these obligations, SA Power Networks is required to have regard to *'the extent to which the forecast includes expenditure to address the concerns of electricity consumers identified by the DNSP in the course of its engagement with electricity consumers'* [1](**Consumer Engagement Factor**).

Reliability capital expenditure is required in order for us to maintain our reliability performance and comply with the ESCoSA service standards for reliability set out in the South Australian Electricity Distribution Code (**EDC**). Compliance with the EDC is a condition of our Distribution Licence.

[1] NER clause 6.5.6(e)(5A).

3. Background

3.1 Historical Performance

Hawker is located in the Flinders Ranges and Elliston is located on the Eyre Peninsula (supplying approximately 349 and 481 customers respectively). The distribution networks supplying both Hawker and Elliston are long, radial power lines in areas that are prone to lightning strikes. Both towns are situated at the end of the network that supplies them, therefore any fault on the upstream network will interrupt their town's supply.

The reasonable criteria used to identify poorly served communities are based on:

- poor historical reliability performance, with average feeder SAIDI of greater than 720 minutes;
- communities of more than 300 customers;
- identified community concerns, as raised during the Talking Power stakeholder workshops during 2013 and 2014, and by ESCoSA during the previous regulatory period; and
- the community is a local economic or tourism hub.

Hawker and Elliston meet all of the above criteria.

Hawker experiences an average annual SAIDI of 1,339 minutes compared to the current target in the EDC for its geographical area of 425 minutes. Similarly, the average annual SAIDI for Elliston has been 1,512 minutes compared to the current target in the EDC for its geographical area of 425 minutes.

SA Power Networks considers the poor network performance experienced by these communities is unacceptable and needs to be addressed in line with ESCoSA's expectations that our overall reliability performance will not further decline but instead will be improved over time, in accordance with the expectations of the South Australian service standard framework.

Our underlying reliability performance is in line with ESCoSA's standards and our legal requirement is that our network's reliability performance is no worse than at the time the assets were leased from the South Australian Government. However our underlying reliability performance tends to mask the actual performance experienced by some communities as explained above.

This project aims to reduce average recorded SAIDI for both communities by at least 400 minutes per annum.

3.2 Customer Consultation

Commencing in November 2012, SA Power Networks undertook a comprehensive CEP leading up to our 2015-20 reset submission in October 2014. The results of this process were progressively published including in the consultation document 'The South Australian Distribution Network: Directions and Priorities 2015 to 2020' which is available from the consultation website 'talkingpower.com.au'.

During the research stage of our Talking Power CEP we provided relevant information on key topics and asked our customers and stakeholders what they expected from SA Power Networks over the next five years and beyond. This was undertaken in the context that any investments and operating costs would be managed within a 'no more than CPI' increase in their network charges.

Specifically, with respect to 'responding to severe weather events' the Talking Power consultation program confirmed that:

- 88% of customers support further protecting the network to harden against lightning and storms;
- customers in poorly-served/low reliability network areas understand the causes of the level of reliability that they receive e.g. due to the long radial feeders in remote locations;
- 89% of customers surveyed supported upgrading and reinforcing areas of the network that are impacted by local demand, the environment, and the type of supply to the area;
- customers supported our efforts to identify emerging issues early and prioritise preventative maintenance to mitigate risk; and
- rural customers and stakeholders would like to see a more robust network supplying their communities to ensure our network services support the development of their communities.

This consultation highlighted a number of issues which concerned SA Power Networks' customers. Included in the insights developed by the CEP is the fact that SA Power Networks' customers want SA Power Networks to:

- Harden the network against lightning and storms (being the third highest community safety and reliability initiative indicated by customers); and
- Continue managing assets and investment to drive reliability, manage risk and support economic growth. Customers rank any asset management initiatives with a direct impact on reliability and/or preventing potential safety hazards as most important.

Customer surveys indicated that customers are generally satisfied with current levels of network reliability. However, there exist pockets of customers who experience very poor levels of reliability performance. The ESCoSA consumer preferences survey (2002) that established the form of the current service standards framework determined that customers were willing to fund improvements in reliability to those customers who had poor performance. This finding was reinforced by SA Power Networks' CEP which indicated that 88% of customers support further protecting the network to harden against lightning and storms. In accordance with the NER Rules (6.5.7 (e)), this business case is consistent with the need to address the reliability concerns expressed by consumers, with regard to the performance of the network for certain poorly served remote communities.

In particular during our CEP the communities of Elliston on the Eyre Peninsula and Hawker in the Finders Rangers (two communities which have a significant history of very poor performance influenced by their location) reaffirmed their need for a robust network supplying their communities.

4. Business Case Objectives

4.1 Objectives

The business case objectives are as follows:

- In accordance with the NER 6.5.7 (e), this business case seeks to address the concerns of electricity consumers for poorly served communities in circumstances where no STPIS incentive exists (due to the low number of customers and significant rectification costs); and

- Manage / reinforce reliability performance of these two poorly served remote communities, by partly restoring the network performance closer to the average regional service standards.

The Hawker and Elliston program has been developed as a direct result of our customers' concerns raised in our CEP workshops regarding Hawker and Elliston. These workshops have reaffirmed the requirement for a reliable supply comparable with other townships within their region.

This business case has also been developed in line with our Corporate Policy for Asset Management authorised by General Manager Network Management and our Asset Management Plan (Manual 15).

4.2 Relationship to Business Strategies and Programs

The project contributes to achievement of strategic objectives as described below.

Table 1 - Contribution to corporate strategic objectives

Corporate Strategic Objective	Contribution
Delivering on the needs of our shareholders, by achieving our target returns, maintaining the business' risk profile, and protecting the long term value of the business	This program is expected to maintain SA Power Networks' risk profile.
Providing customers with safe, reliable, value for money electricity distribution services, and information that meets their needs	This program is expected to manage / reinforce reliability performance of the targeted poorly served communities and is the least cost means of arresting the continued poor network performance experienced by those communities.
Maintaining our business standing in the community as an exemplary corporate citizen of South Australia.	This program is expected to support SA Power Networks standing in the affected communities by helping to return the reliability performance of the specific feeders supplying those communities, closer to the average regional service standards.
Ensuring that our workforce is safe, skilled and committed, and that our resourcing arrangements can meet our work program needs	This program will reduce the frequency that our employees operate in relatively hostile and difficult working conditions.

Corporate Strategic Objective	Contribution
Maintenance and development of key capabilities that will help sustain our success into the future	Not applicable.

Table 2 - Contribution to corporate core areas of focus

Corporate Core Areas of Focus	Contribution
Energised and responsive customer service	Positive.
Excellence in asset management and delivery of service	Positive.
Growth through leveraging our capabilities	Not applicable.
Investing in our people, assets and systems	Not applicable.

4.3 Relationship to National Electricity Rules Expenditure Objectives

Table 3 - Contribution to the National Electricity Rules expenditure objectives

National Expenditure Objectives	Contribution
Meet or manage expected demand over the period	Not applicable.
Comply with regulatory obligations	In submitting its regulatory proposal, SA Power Networks must satisfy the AER of the extent to which the capital expenditure forecast includes expenditure to address the concerns of electricity consumers as identified in the course of engagement with electricity consumers. This program seeks to directly address this requirement and also manage the reliability performance of the network supplying those poorly served remote communities.
Maintain the quality, reliability and security of supply of services provided by SA Power Networks	This program will manage/reinforce the reliability performance of those poorly served remote communities.
Maintain the reliability and security of the distribution system i.e. the electricity networks	Not applicable

4.4 Meeting the National Electricity Rules Expenditure Criteria

The costs estimated to achieve this project represent efficient and prudent expenditure as detailed below.

Table 4 Activities to Meet the National Electricity Rules expenditure objectives

National Expenditure Criteria	Activity
Efficient cost of achieving the objective(s)	All estimated costs have been calculated based on actual historic costs. Where possible competitive prices have been obtained. Costs are considered to be efficient based on historical expenditure.
Cost of a prudent operator	The planned scope of works incorporates a set of highly targeted and prioritised strategies from which optimised cost effective solutions are selected. SA Power Networks' personnel also have regard to industry developments to ensure our practices are in line with good industry practice.
Realistic expectation of forecast and cost inputs	Forecast reliability outcomes and benefits have been estimated by analysing our reliability performance since 2009/10 using the standard IEEE MED exclusion method (not the superseded Box-Cox method) and assessing the improvement that would have occurred if the proposed programs had been in place across this period.

5. Project Scope

The scope of the poorly served communities program is to manage and reinforce the reliability performance of the remote communities; Hawker and Elliston. This expenditure is required to better meet community expectations by partly addressing the poor reliability performance these towns are experiencing by implementing targeted cost effective hardening solutions.

This will be achieved by a combination of strategies including:

- re-insulating vulnerable sections of overhead 11 kV lines with polymeric insulators to minimise the possibility of insulator failures due to lightning;
- upgrade earthing systems in vulnerable locations;
- installation of overvoltage protection at vulnerable locations;
- installation of fuse saver devices to reduce storm related transient faults leading to permanent interruptions; and
- installation of automatic circuit reclosers.

Sections of the feeders to be reinforced were selected based on the recorded historical fault locations.

The net annual STPIS impact has been calculated (+0.02% of revenue or approximately +$132k p.a.) and indicates that SA Power Networks won't materially benefit financially from this program, further any expected benefits will be largely offset by the STPIS penalties expected with the 'hardening the network' program, as explained in Appendix A.

6. Business Case Options

The two options considered were:

1. Do Nothing. The reliability performance of these poorly served communities would be expected to continue to fail to meet the average regional service standards;

2. Invest to manage / reinforce the reliability performance of these poorly served communities, to:

    - partly restore their reliability performance to bring it closer to the average regional service standards, in line with community expectations;

    - to improve the experience of some of our consistently worst served customers; and

    - endeavour to meet customer and ESCoSA expectations.

It is recommended Option 2 – reinforce poorly served communities be approved for the amount of $2.4 (June 2015, $ million) to implement initiatives to reinforce the reliability performance of these two poorly served communities over the 2015-20 RCP.

6.1 Option 1 – Do Nothing

6.1.1 Delivery Costs

Not Applicable as option one is to do nothing.

6.1.2 Expected Benefits

No benefits are expected for this option.

6.1.3 Expected Disbenefits

Table 5 - Expected disbenefits

Disbenefit	Consequence outcome (Value, Measure)
Reliability performance of these low reliability feeders will continue at historical levels Customer preferences as revealed through our CEP will not be met	Possible adverse consequences include: • Poor customer service • Potential intervention by the technical regulator • Adverse publicity from customers, media and industry.

6.1.4 Timescale

Not applicable as option 1 is to do nothing.

6.1.5 Major Business Risks

Major business risks of not proceeding with this project are as follows.

Table 6 - Major business risks of not proceeding with the project

Risk ID	Risk Description (Risk Line Item)	Consequence Description	Inherent Likelihood	Inherent Consequences	Risk Rating
1.1	Reliability performance not meeting EDC targets	• Poor customer service • Regulatory intervention • Customer complaints • Media attention	Likely	Minor	Medium
1.2	Detriment to customer service reputation	Negative focus on and additional scrutiny of SA Power Networks' performance	Likely	Minor	Medium

6.2 Option 2

6.2.1 Delivery Costs

The table below is a summary of the program delivery costs. Please refer to the capital evaluation in Appendix B for a detailed view of these costs.

To achieve the specified objectives, a budget of $2.4 (June 2015, $ million) has been estimated over the 2015-20 RCP to reinforce the power lines supplying Hawker and Elliston. The total is comprised as follows:

Table 7 - Delivery costs

Reliability improvement	2015/16	2016/17	2017/18	2018/19	2019/20	Total
Remote communities (Hawker and Elliston)	0.5	1.2	0.7	0.0	0.0	**2.4**

6.2.2 Delivery Cost Assumptions

The estimated cost of delivery of this program has been estimated based on historical costs of doing similar work in the recent past.

Other assumptions include:

- Levels of expenditure between mitigation categories may vary from year to year based on an annual review of performance trends; and
- Cost estimates are derived using a zero based approach from unit costs for each mitigation solution to determine the overall cost and number of projects.

6.2.3 Expected Benefits

The following benefits are expected:

Table 8 - Expected benefits

Benefit Type	Benefit Effect	Benefit	Measure	Date Benefit Expected	Value
Reliability Customer Benefit (VCR)	Address the reliability concerns expressed by consumers throughout our Customer Engagement Program	Customers experience improves	Customer VCR benefit	Progressively from 1/1/2016	Estimated at $222k p.a.

Reliability Benefit (STPIS)	Fewer supply interruptions on some non-MED valued by increased STPIS benefit	STPIS benefit based on reduced impact of supply interruptions	Using normal reliability reporting systems based on the estimated number of supply interruptions mitigated compared to actual performance between 2009/10 and 2013/14 using the standard IEEE MED exclusion method (not the superseded Box-Cox method)	Progressively from 1/7/2016	Estimated at $132k p.a. (+0.02% p.a.)

Based on financial modelling, it is not economic for SA Power Networks to invest in this program of works as the NPV cost is $1.7 million (i.e. the benefit is -$1.7 June 2015, $ million). However, this program is considered necessary to address the concerns of electricity customers as identified by SA Power Networks in the course of our CEP (in accordance with the National Electricity Rules in 6.5.7 (e)).

The assessment suggests that this project is likely to deliver on average an overall SAIDI improvement of 0.4 minutes p.a. The net result in underlying SAIDI (i.e. excludes MEDs) is a slight improvement of 0.3 minutes p.a. (i.e. decrease in SAIDI) and a slight improvement in SAIFI of 0.001 interruptions p.a. The overall result is a small STPIS benefit of approximately +$132k p.a. (+0.02%).

Detailed analysis has been undertaken to determine the likely effect of the proposed remediation works on the networks supplying Hawker and Elliston. The analysis was based on forecasting the proposed SAIDI and SAIFI changes on those feeders selected and subtracting this from the actual performance over the period 2009/10 – 2013/14 and then assessing the reliability / STPIS impact (using the standard IEEE MED exclusion method (not the superseded Box-Cox method)). The results of this analysis are summarised in Table 9.

Table 9 - Analysis of impacts of the remote communities program

	Do nothing	Post program	Impact
Overall Av. SAIDI (incl. MEDs) (minutes)	231.5	231.1	0.4
Underlying Av. SAIDI (excl. MEDs) (minutes)	161.1	160.8	0.3
Overall Av. SAIFI (incl. MEDs) (number)	1.718	1.717	0.001
Underlying Av. SAIFI (excl. MEDs) (number)	1.477	1.476	0.001

Based on our modelling using the standard IEEE exclusion method (not the superseded Box-Cox method), it is forecast that SA Power Networks will marginally benefit from the STPIS with an annual revenue increase of +0.02% p.a. However, this would be offset by the financial penalties from the hardening the network program. The impact on reliability from all improvement programs is discussed further in Appendix A - Combined impact of reliability improvement programs.

In its Preliminary Determination, the AER highlighted that SA Power Networks did not provide a cost benefit analysis for this program. We have undertaken a cost benefit analysis which indicates that, assuming benefits to SA Power Networks are progressively realised over the 2015-20 RCP and based on the latest AMEO VCR values, the NPV is -$1.7 million. The present value of the capital investment required to implement the program exceeds the present value of the expected benefits by $1.7 million. It is therefore not financially viable for SA Power Networks to fund this capital investment through traditional capital expenditure mechanisms. However, the NPV of the benefits less the costs to customers over a 35 year timeframe is positive at $0.5 million.

The reason why the VCR benefit is not positive is because of the small number of customers being targeted and the radial nature of their supply. SA Power Networks is of the view that it is unacceptable for Hawker and Elliston, two tourism hubs, to be disadvantaged with electricity supply reliability levels that are significantly below regional targets. This is consistent with the findings of our CEP and ESCoSA's expectation that our performance during MEDs and severe weather events will not decline but rather improve in order to meet mandated regional targets in the 2015-20 RCP.

6.2.4 Timescale

The program is planned to be undertaken over the entire 2015-20 RCP. Its benefits will be felt progressively as each part of the program is delivered.

Table 10 - Project timescale

Timescale Activity	Start Date	End Date
Start and end dates of the project	1/01/2016	30/6/2020
Period/Date when business can first expect to accrue the benefits	1/07/2016	Ongoing

6.2.5 Major Business Risks

The risidual business risks of this option are as follows.

Table 11 - Major business risks associated with Option 2

Risk ID	Risk Description (Risk Line Item)	Consequence Description	Inherent Likelihood	Inherent Consequences	Risk Rating
2.1	Detriment to customer service and reputation caused by poor reliability performance	Partly return / restore performance closer to average reliability levels and minimise the likelihood of customer complaints	Unlikely	Minor	Low
2.2	Safety of field crews responding to outages, often in adverse weather conditions, and safety of the public	Fewer outages reduce the safety risk to crews and the public (e.g. by reducing the number of wires down)	Possible	Minor	Low

7. Investment Appraisal

The investment analysis is summarised in the Table 12 below.

Table 12 – Investment appraisal

	Poorly Served Communities
CAPEX (5 year) ($million)	$2.4
Overall SAIDI improvement (mins.) p.a.	0.4
Overall SAIFI improvement (int.) p.a.	0.001
Underlying SAIDI improvement (mins.) p.a.	0.3
Underlying SAIFI improvement (int.) p.a.	0.001
STPIS Benefit ($M) p.a.	+$0.13 (+0.02%)
VCR Benefit to Customers ($M) p.a.	+$0.22
NPV (SAPN perspective) ($M)	-$1.7
NPV (Customer perspective) ($M)	+$0.5

8. Recommendation

It is recommended that funding be endorsed for Option 2, with an allocation of $2.4 (June 2015, $ million) in capital expenditure over the 2015-20 RCP to reinforce the networks' supplying Hawker and Elliston.

Appendix A - Combined impact of reliability improvement programs

In its Preliminary Determination, the AER requested further information on whether SA Power Networks' cost-benefit analysis of the hardening the network program takes into account the new definition of MEDs.

SA Power Networks confirms the standard IEEE exclusion method was used to calculate MEDs, not the superseded Box-Cox method.

Table 13 provides forecasts of the average annual overall impact on SAIDI and SAIFI, and the impact on SAIDI and SAIFI excluding MEDs, as a combined result of our proposed reliability programs (including the hardening the network, low reliability feeders, Hawker-Elliston and micro-grid trial programs).

Table 13 - Combined reliability programs impact on SAIDI and SAIFI

Reliability improvement pa	Hardening the network	Low reliability feeders	Remote communities	Micro-grid	Total
Overall SAIDI (minutes)	16.89	0.94	0.35	0.12	**18.31**
Overall SAIFI (number)	0.074	0.003	0.001	0.001	**0.079**
Underlying SAIDI (excl MEDs) (minutes)	(1.48)	0.68	0.32	0.12	**(0.36)**
Underlying SAIFI (excl MEDs) (number)	0.004	0.003	0.001	0.001	**0.008**

If these programs had been implemented for the entirety of the 2010-15 RCP, our analysis indicates the average overall annual SAIDI (including MEDs), would have been 18.3 minutes lower (being a better outcome for customers). This is less than one third of the average 60 minute increase that all customers have experienced in the 2010-15 RCP.

Further, we note that 15.2 minutes of those 18.3 minutes would have been associated with MEDs. Our analysis demonstrates that four MEDs in the analysed period would no longer be classified as MEDs if these reliability programs had been implemented. The average impact of these four days no longer being classified as MEDs would slightly increase (worsen) the underlying SAIDI (excluding MEDs) performance by 3.5 minutes.

However, combining the 3.1 minute improvement (18.3 minus 15.2 minutes) with the 3.5 minute decline, results in an overall decline[2] in our underlying reliability performance of 0.4 minutes per year.

[2] The decline in underlying SAIDI is because four days which were previously classified as MEDs would not have been classified as MEDs and consequently the interruptions that would still occur on those days that were previously excluded, would now be included in the underlying reliability.

That is, based on our analysis, the combined programs will improve the experience of some of our worst served customers, in line with their preferences, but there will be no benefit to SA Power Networks because there will be no improvement in the underlying reliability performance.

Overall, the proposed expenditure for the hardening the network, low reliability feeders and Hawker-Elliston programs has a net present value over a 35 year period to customers of $54 million, using the latest VCR values from AEMO.

The overall STPIS outcome from implementing the three proposed expenditure programs is neutral with potential for a slight positive outcome of about 0.02% of revenue. (If all programs had been in place for the full 2010-15 RCP, the overall impact on the STPIS is a marginal increase of 0.02% of revenue per annum. This is equivalent to $0.182 million per year for the 2015-20 RCP.)

The overall STPIS outcome, shown in Table 14, is the result of four days previously classified as MEDs no longer being classified as MEDs.

Table 14 - Annual average reliability impacts from four programs of works

	Urban		Rural Short		Rural long		Dist System	
	SAIDI	SAIFI	SAIDI	SAIFI	SAIDI	SAIFI	SAIDI	SAIFI
Hardening the Network	(1.00)	0.007	(1.42)	(0.003)	(3.75)	(0.002)	(1.48)	0.004
Low reliability	0.00	0.000	2.48	0.013	2.02	0.006	0.68	0.003
Remote communities	-	-	0.53	0.002	1.51	0.003	0.32	0.001
Micro Grid	-	-	-	-	0.74	0.006	0.12	0.001
Total	(1.00)	0.007	1.60	0.012	0.52	0.012	(0.36)	0.008

Appendix B – Capital evaluation

CAPITAL EVALUATION - SA Power Networks' perspective

Project Name Poorly served communities (Hawker and Elliston)

Evaluation Factors

Discount Rate (Real Pre-Tax) 7.09% Policy rate for investment in core business assets

Base Year Ending 30 June 2015 Specify Date

Financial Analysis	0	1	2	3	4	5	6	7	8
Year ended 31/12:	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**
Costs:									
Poorly served communities (Hawker and	500	1,200	700	0	0	0	0	0	0
Total Capital	500	1,200	700	0	0	0	0	0	0
		0	0	0	0	0	0	0	0
Total operating	0	0	0	0	0	0	0	0	0
Total Costs	**500**	**1,200**	**700**	**0**	**0**	**0**	**0**	**0**	**0**
Benefits:									
VCR benefit	0	66	132	132	132	132	66	0	0
Total Benefits	**0**	**66**	**132**	**132**	**132**	**132**	**66**	**0**	**0**
Net Cash Flow	**-500**	**-1,134**	**-568**	**132**	**132**	**132**	**66**	**0**	**0**

Pre Tax:	
Net Present Value	**-$1,709**

CAPITAL EVALUATION - Customer perspective

Project Name Poorly served communities (Hawker and Elliston)

Evaluation Factors

Discount Rate (Real Pre-Tax) 7.09% Policy rate for investment in core business assets

Base Year Ending 30 June 2015 Specify Date

Financial Analysis	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Year ended 31/12:	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**2024/25**	**2025/26**	**2026/27**	**2027/28**	**2028/29**	**2029/30**	**2030/31**	**2031/32**	**2032/33**	**2033/34**	**2034/35**	**2035/36**	**2036/37**	**2037/38**	**2038/39**	**2039/40**	**2040/41**	**2041/42**	**2042/43**	**2043/44**	**2044/45**	**2045/46**	**2046/47**	**2047/48**	**2048/49**	**2049/50**	**2050/51**
Costs:																																				
Poorly served communities (Hawker and	500	1,200	700	0	0	0	0	0	0	0	0																									
Total Capital	500	1,200	700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total operating	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Costs	**500**	**1,200**	**700**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Benefits:																																				
VCR benefit	0	111	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222
Total Benefits	**0**	**111**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**
Net Cash Flow	**-500**	**-1,089**	**-478**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**	**222**

Pre Tax:	
Net Present Value	**$512**