Business case: Maintain Underlying Reliability Performance Program

2025-30 Regulatory Proposal

Supporting document [5.9.3]

January 2024

SA Power Networks

Empowering South Australia

Contents

Glossary

Acronym / term	Definition
AER	Australian Energy Regulator
AUGEX	Augmentation expenditure
Capex	Capital expenditure
CBD	Central Business District
DEM	South Australian Department of Energy and Mining
EDC	Electricity Distribution Code of South Australia
GHFF	Grey Headed Flying Fox
MED	Major Event Day
NER	National Electricity Rules
RCP	Regulatory Control Period
SACOSS	South Australian Council of Social Service
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
STPIS	Service Target Performance Incentive Scheme
USAIDI	Unplanned System Average Interruption Duration Index

1 About this document

1.1 Purpose

This document provides a business case to support forecast expenditure for the 2025-30 Regulatory Control Period (**RCP**) on programs in the area of customer supply reliability.

1.2 Expenditure category

This expenditure comprises one input to our overall capital expenditure (**capex**) on network augmentation (**augex**).

1.3 Related documents

This document should be read in conjunction with the following documents that specifically relate to these programs, and together form a suite of supporting documents to our Regulatory Proposal for this program:

- '5.9.1 - Reliability forecasting structure – Methodology' — a structural overview of the approaches used to prepare the forecasts for the reliability improvement programs included in this business case;
- '5.9.5 - Worst Served Customers Reliability Improvement Programs - Business case' — a combined business case for three reliability improvement programs aimed at improving supply reliability for some of our worst served customers, covering (1) the Low Reliability Feeder Improvement program, (2) the Supply Restoration Improvement program, and (3) the Regional Reliability Improvement Program;
- '5.3.12 - CBD Reliability - Business case' — a combined business case for the Central Business District (**CBD**) combining cable replacement (repex) and automation (augex), in order to return the reliability performance of our CBD network up to the jurisdictional reliability standard; and
- '5.9.6 - Adelaide flying-fox population trend' - Consultant Report.

2 Executive summary

The business case for the 2025-30 Maintain Underlying Reliability Performance Program recommends an investment of $62.6 million ($2022)[1] in capital expenditure (capex) on network augmentation (augex) to maintain underlying reliability at historical levels as this will allow us to continue to meet our jurisdictional reliability requirements while also aligning with Service Target Performance Incentive Scheme (**STPIS**) targets. Customers have expressed a clear desire for us to invest sufficiently to maintain reliability. Without the program, reliability will decline materially.

Our jurisdictional reliability requirements[2] and the STPIS targets define System Average Interruption Duration Index (**SAIDI**) and System Average Interruption Frequency Index (**SAIFI**) targets separately for CBD, urban, short-rural and long-rural feeder types. Additionally, our jurisdictional reliability requirements define targets for the restoration time of an interruption for each of these feeder categories.[3] The jurisdictional reliability requirements impose a number of separate regulatory obligations on us, namely:

- to use all reasonable efforts, skills and resources, to achieve the reliability and restoration targets each regulatory year;
- to use all reasonable efforts, skills and resources to restore supply to customers as soon as reasonably practicable after there has been an interruption or limitation to supply caused (among other things) by carrying out repairs; and
- to report on how we have used all reasonable efforts, skills and resources if we fail to meet the stipulated supply restoration reporting thresholds.[4]

We operate a recurrent underlying reliability program, which is a general-purpose program aimed at managing supply reliability in relation to our jurisdictional reliability requirements and the STPIS targets. This recurrent underlying reliability program covers a broad combination of activities to address outage causes and emerging trends, reduce customer interruptions, manage supply restoration times, ensure adequate network protection is in place, improve operational practices across the network and manage day to day customer service. Importantly, this program addresses supply reliability issues that are not addressed through other routine programs such as the asset maintenance / replacement, vegetation, and augex capacity programs.

The expenditure forecast for the 2025-30 'Maintain underlying reliability performance program' is limited to the upgrade works associated with this recurrent underlying reliability program that we estimate will be necessary to maintain historical performance during the 2025-30 RCP. It is important to note that it does not allow for the additional upgrade works that would be necessary to improve reliability to worst served customers and regions, rural-long supply restoration times and the CBD network (each of which are addressed through other reliability improvement programs).

Given the recurrent nature and often piecemeal approach of this ongoing program, it is not feasible to produce a detailed bottom-up development of its expenditure forecast, as we have undertaken for the reliability improvement programs. Instead, we employ a 'top-down' approach, based on the analysis of historical reliability spend against the reliability levels and trends.

This analysis indicates that the historical level of actual expenditures for this program over the last five years with a modest uplift of $1.2m should reasonably reflect the ongoing needs for this program into the next RCP in order to maintain reliability at its average levels over the 2025-30 RCP (i.e. to maintain current performance as against our jurisdictional reliability requirements and the STPIS targets).

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1 All dollar figures throughout this document are in real June $2022 dollars

2 ESCoSA, Electricity Distribution Code, Version EDC/14, 1 July 2025.

3 ESCoSA, Electricity Distribution Code, Version EDC/14, 1 July 2025.

4 ESCoSA, Electricity Distribution Code Version EDC/13; (2020) 2.2.1 Network Reliability Standards

Consequently, the $62.6 million expenditure forecast for the 2025-30 ‘Maintain underlying reliability performance program’ has been calculated from the previous five years actual expenditure on this recurrent program (i.e. up to 2022/23).

Our proposal is preferrable to alternative options of ‘do nothing’ or reducing expenditure from the recent historical levels, as those alternatives would result in a material reduction in reliability performance contrary to customers’ expectations and desires and would increase the likelihood that our performance against jurisdictional reliability requirements will decline.

3 Background

3.1 The scope of this business case

This business case responds to the need to maintain reliability in line with historical performance in order to meet jurisdictional reliability requirements and STPIS targets relevant to the next RCP and meet customer concerns and expectations in relation to maintaining reliability performance.

This business case does not consider options to:

- improve supply reliability performance for CBD customers to comply with jurisdictional reliability requirements, which is considered in document '5.3.12 - CBD Reliability - Business case';
- improve supply reliability for worst served customers, where this would not occur through this program, which is considered in 'document 5.9.5 - Worst Served Customers Reliability Improvement Programs Business case'; nor
- replace assets to arrest the anticipated further decline in their performance due to the aging and deteriorating condition of the assets over the next RCP, which is considered in 'document 5.3.1 - Network Asset Replacement expenditure - Business case'.

3.2 Drivers of the program

3.2.1 Reliability requirements and the Maintain Underlying Reliability Performance program

We have an obligation to comply with the South Australian Electricity Distribution Code (**EDC**) as a condition of our Distribution Licence. The EDC imposes various reliability requirements that we must comply with in relation to the performance of the distribution system. These jurisdictional reliability requirements set targets and reporting thresholds for:[5]

- SAIDI and SAIFI targets separately for CBD, Urban, Rural Short and Rural Long feeder types; and
- the supply restoration time (called Network Restoration Time) for each of the four feeder categories, CBD, Urban, Rural Short and Rural Long, which are defined by the maximum percentage of that feeder category's customers that should experience an unplanned interruption exceeding a specified time in hours during each regulatory year.

The EDC also imposes an obligation to restore supply to customers as soon as reasonably practicable after there has been an interruption or limitation to supply caused by carrying out repairs (or other actions).

These jurisdictional reliability requirements require us to:

- use all reasonable efforts, skills and resources to achieve the targets each regulatory year;
- use all reasonable efforts, skills and resources to restore supply to customers as soon as reasonably practicable after there has been an interruption or limitation to supply; and
- report how we have used all reasonable efforts, skills and resources if we fail to meet the stipulated supply restoration reporting thresholds.

These jurisdictional reliability requirements are summarised further in our Reliability Forecasting Structure document, which supports this program.

Similarly, the STPIS defines SAIDI and SAIFI targets separately for CBD, Urban, Rural Short and Rural Long feeder types.

[5] ESCoSA, Electricity Distribution Code, Version EDC/14, 1 July 2025.

Both the jurisdictional requirements and the STPIS are based on the average of our historical performance.

We operate a recurrent underlying reliability program, which is a general-purpose program aimed at managing supply reliability in relation to our jurisdictional reliability requirements and the STPIS targets. This recurrent underlying reliability program covers a broad combination of activities to address outage causes and emerging trends, reduce customers interrupted, ensure adequate network protection is in place, manage supply restoration times and improve operational practices across the network and manage day to day customer service. Importantly, this program addresses supply reliability issues that are not addressed via other routine programs such as the asset maintenance / replacement, vegetation clearance and network augex capacity programs.

This Maintain Underlying Reliability Performance Program directly relates to the continuation into the next RCP of these recurrent programs, where the expenditure forecast is set to be that which is necessary to prudently and efficiently maintain reliability performance at the average performance over the last 5 years. This in turn should enable us to continue to meet our jurisdictional requirements and the STPIS targets applicable to the next RCP,[6] and thereby meet our customers' concerns and expectations in relation to maintaining reliability performance.

3.2.2 Recent reliability performance and underlying reliability expenditure

Figure 1 Annual reliability performance since the start of the previous RCP

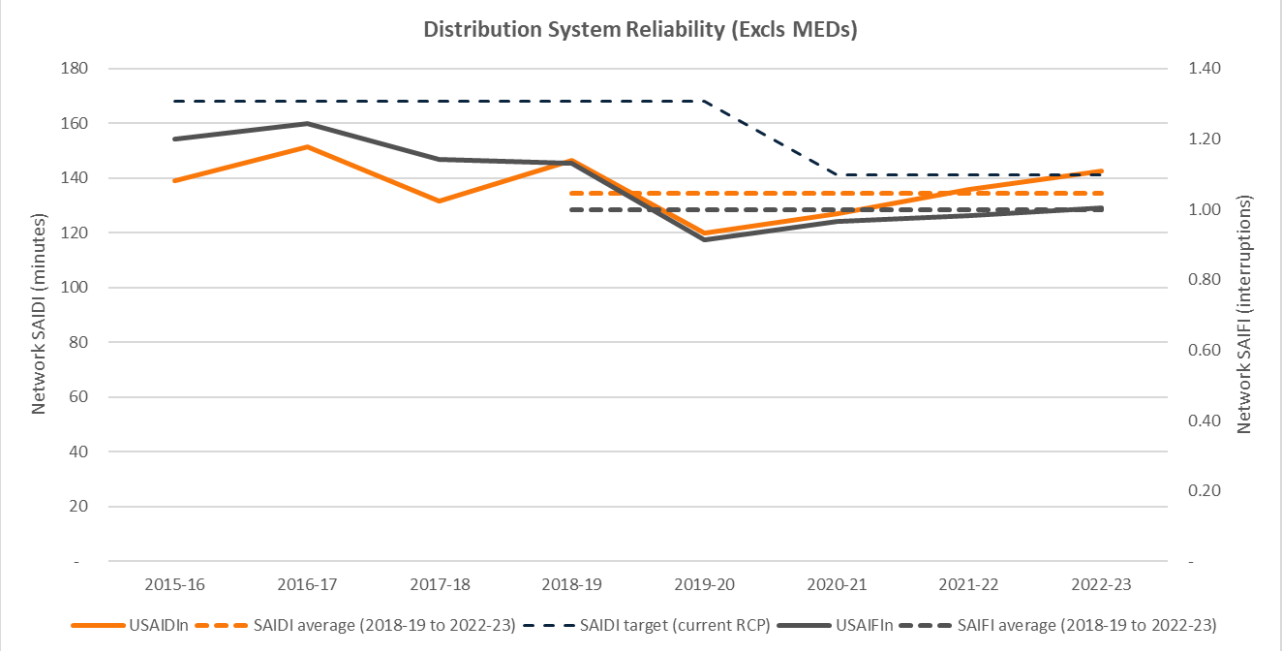


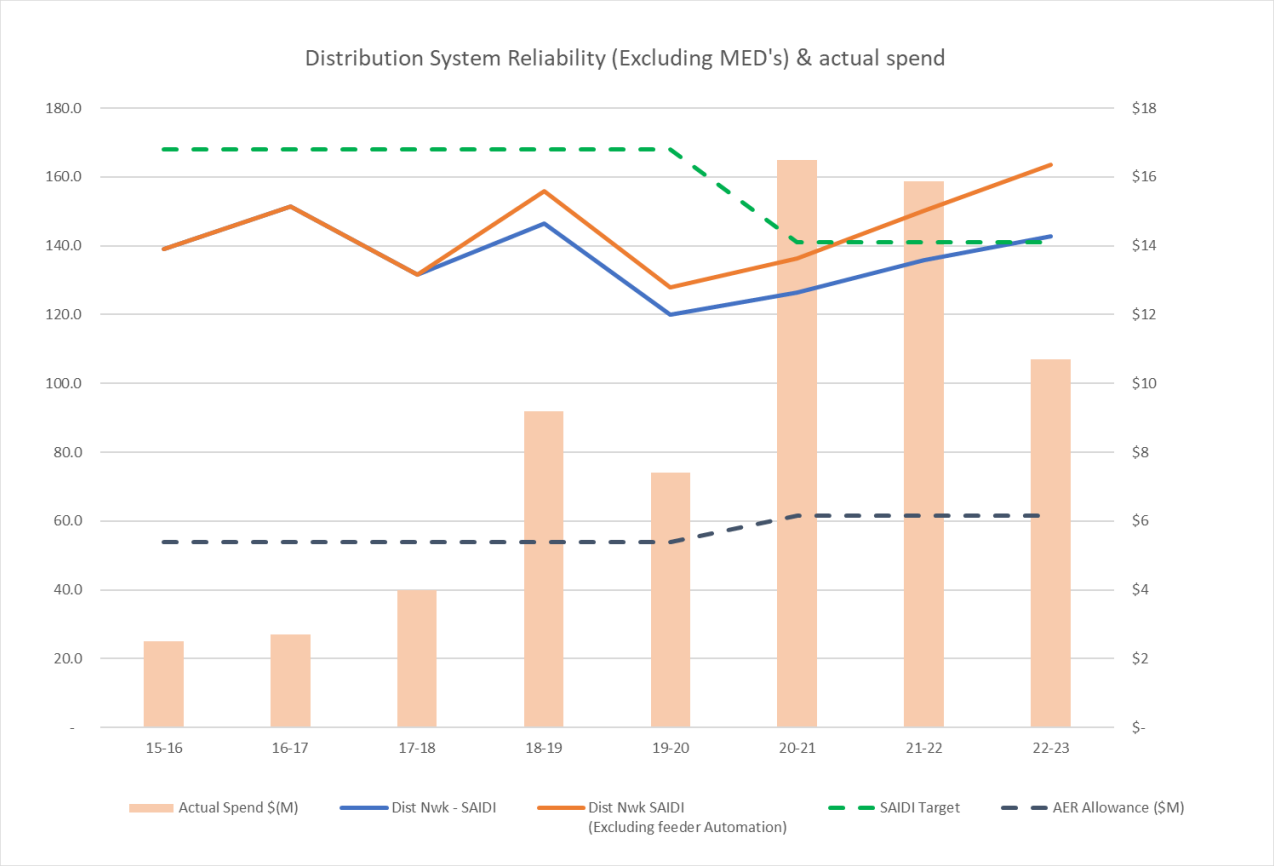
Figure 1 shows network unplanned SAIDI and SAIFI (excluding Major Event Days (**MED**)) since the beginning of the previous RCP.[7] The key points to note from this figure are:

- SAIFI improved to around 2019/20; there was a slight worsening after that, but SAIFI has been maintained over the last two years at approximately the historical 5-year average.
- SAIDI had a similar improvement to 2019/20; but since that time, it has declined materially by approximately 23 minutes. It is currently 8 minutes above the 5-year average.

[6] This assumes that other components of our expenditure forecasts necessary to maintain the performance of our network are allowed for (eg the repex forecast).

[7] The values for 2022/23 are an estimate, based on the actual performance to April and the historical average performance for the remaining months.

Figure 2 Annual reliability performance versus the actual spend on the underlying reliability program.



To show the relationship between the Maintain Underlying Reliability Performance Program and SAIDI performance, Figure 2 shows actual spend on our program[8] and the Australian Energy Regulator (**AER**) forecast / allowance[9] (right hand axis) and the network SAIDI target (left hand axis). Note that the SAIDI target in figure 2 is an implied total system STPIS target.[10]

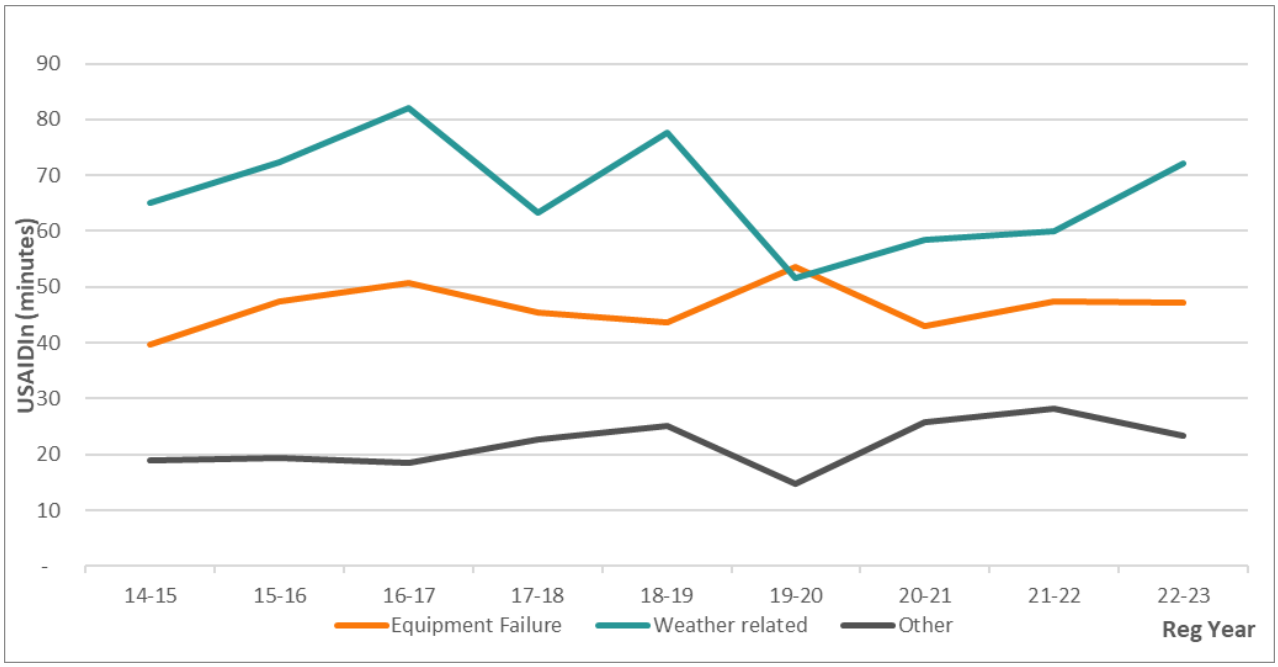
This figure shows that expenditure on the program has been rising significantly since the beginning of the previous RCP. It was below the AER allowance in the first three years of the previous RCP (i.e. 2015-20) but has exceeded the AER allowance since that time, including in all years of the current RCP. Importantly, although the increase in expenditure in the previous RCP saw an improvement in SAIDI, the more significant increase in expenditure in the current RCP has coincided with a worsening in SAIDI.

8 Note, this excludes spend on special-purpose improvement programs, which include a Network Hardening program in the previous RCP and a Low Reliability Feeder Improvement program in the current RCP.

9 This is the inferred allowance based on the AER's determinations for the previous and current RCPs.

10 The implied total system target is calculated using an weighted aggregation all of the individual feeder category targets upon which the STPIS is set.

Figure 3 Annual reliability performance by main outage causes



To understand the causes of the improving and then worsening pattern of SAIDI, Figure 3 shows network SAIDI broken down by the three main outage cause categories: weather-related (eg wind, lightning), equipment failure (ie age / condition driven asset failures), and other (eg animal related, third party, operational issues[11]).

The weather-related and other outage causes are typically addressed through the augex reliability programs, whereas the asset failure causes are typically addressed through the asset replacement and maintenance programs. Therefore, the important points to note from this figure in the context of the Maintain Underlying Reliability Performance Program are as follows:

- Weather-related causes saw an improvement to 2019/20, largely driven by a special purpose 'Network Hardening' program that was implemented in the previous RCP.

  The Network Hardening program targeted feeders that had a history of outages due to lightning, by upgrading insulators. However, since 2019/20 weather-related SAIDI has worsened materially by approximately 17 minutes.

  This has been driven by more frequent and severe weather-related events where vegetation from outside the legislated clearance zone has damaged our equipment, which could at least in part relate to climate change. Therefore, there is a reasonable possibility to assume that the pattern will continue into the next RCP.

- The 'other' cause has seen a worsening trend since around 2016/17, which has been driven by an increase in the grey-headed flying fox (**GHFF** or Fruit Bats) population, which at this stage, mainly affects Urban feeders.

  We have been implementing a small program, within our maintain underlying reliability expenditure, to install animal guards on our network to reduce the instances of flying foxes causing network outages.

  We recently commissioned a review of the grey-headed flying fox (GHFF) colonies and their likely changing nature and size into the future. A key finding from this review is that:

  "The grey-headed flying-fox population has dramatically increased in SA, and specifically Adelaide".

[11] Operations issues refer to outages due to issues such as switching errors or forced interruptions for safe switching

"The consistent large number of GHFF roosting in Adelaide over the past five years suggests that foraging resources in the region are abundant, and likely to be able to support a larger number of GHFF than have been recorded to date. The electrocution of GHFF is expected to continue in association with the consistent large number of GHFF roosting and breeding in Adelaide. Based on the pattern observed in the Sydney and Melbourne regions, it is likely that the GHFF population and number of roosts will increase in the Adelaide region."[12]

Given the increasing impact on network reliability and the review findings, we expect that animal-related outages and deaths will continue to rise, and we therefore need to increase our animal-guard installation program into the next RCP to reduce the escalation of GHFF interruptions and deaths and the associated impact on our underlying network performance.

The changing pattern in feeder category reliability is further shown in Figures 4 to 9, which show SAIDI and SAIFI for the three network feeder categories, Urban, Rural Short and Rural Long, and the breakdown of USAIDI in each of these network categories into the same asset failure, weather-related and other outage causes (as used in Figure 3 above).

These charts show that the recent worsening USAIDI in each of the three network categories is driven by the following:

- Urban feeders - 'other' outage causes, largely driven by the flying fox issue discussed above, and weather-relates outages;
- Rural Short feeders – weather-related and asset failures outage causes; and
- Rural Long feeders – asset failure and 'other' outage causes.

These trends demonstrate that the recent increase in expenditure on the Maintain Underlying Reliability Performance Program has not resulted in a consistent improving trend in reliability. We therefore consider it reasonable to assume that the current Program will need to be continued into the next RCP at levels, at least, consistent with recent actual expenditure levels if reliability performance is to be maintained at historical levels (and, in fact, not decline). We have omitted the CBD feeder category here as we have a special-purpose program aimed at improving the reliability of the CBD network.[13]

12 Ecosure, *Adelaide flying fox population trend*, May 2023, Section 4 and 5.

13 See business case '5.9.4 - CBD Reliability Improvement to meet EDC Targets'.

Figure 4 annual reliability performance – Urban feeder category

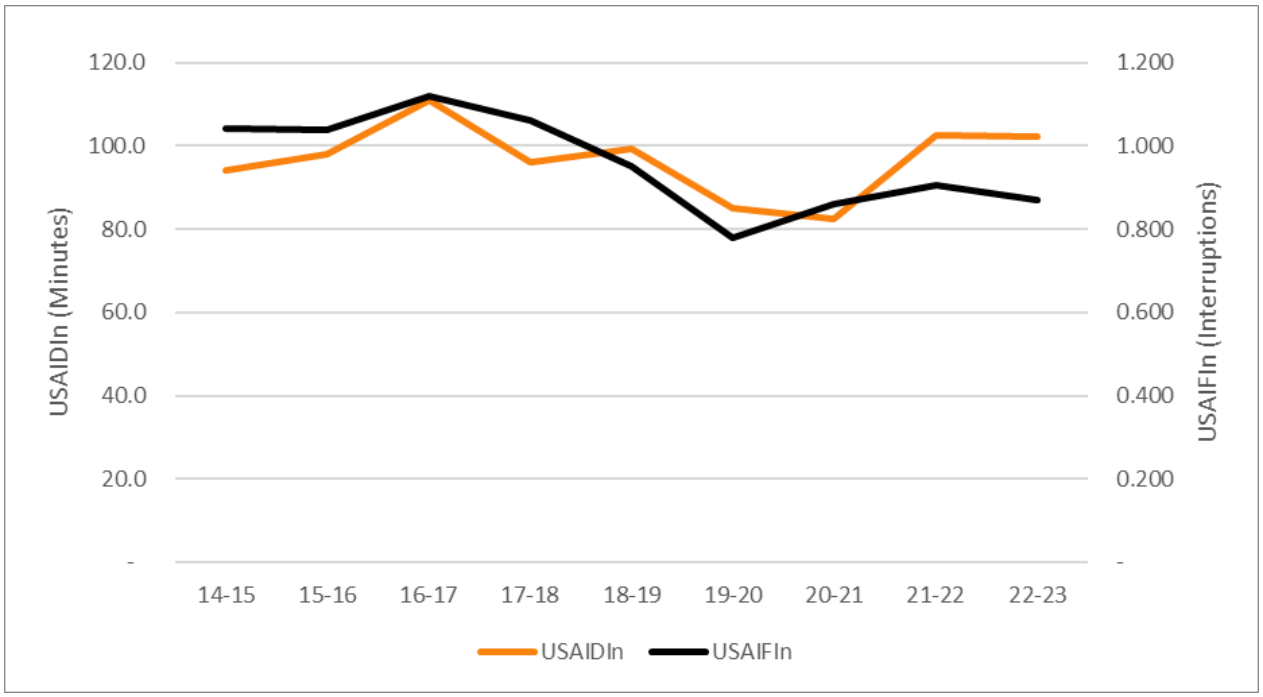


Figure 5 annual reliability performance by outage cause - Urban feeder category

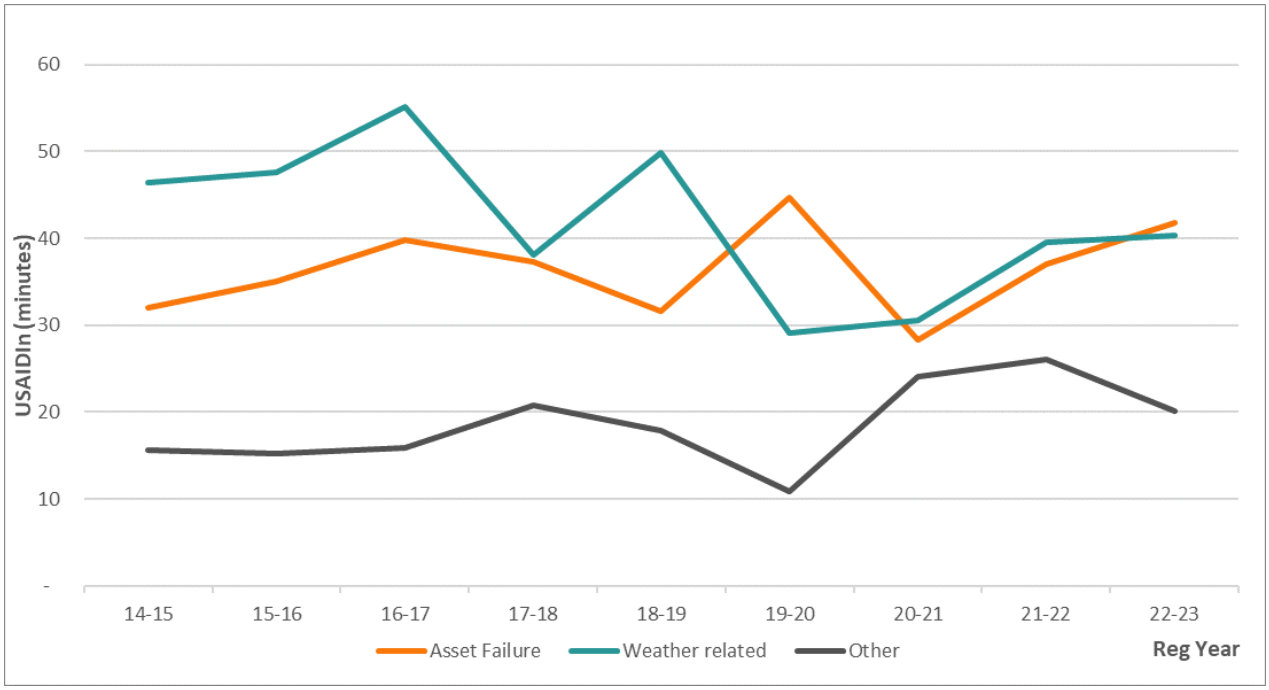


Figure 6 Annual reliability performance - Rural Short feeder category

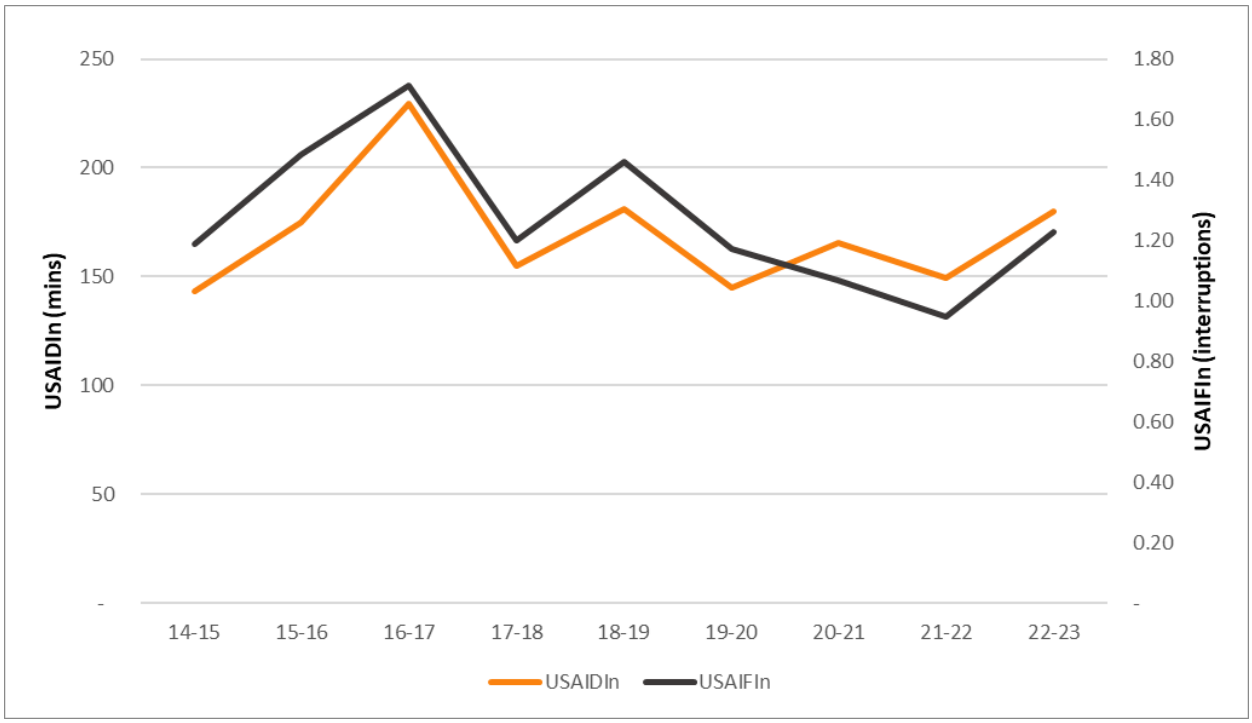


Figure 7 Annual reliability performance by outage cause – Rural Short feeder category

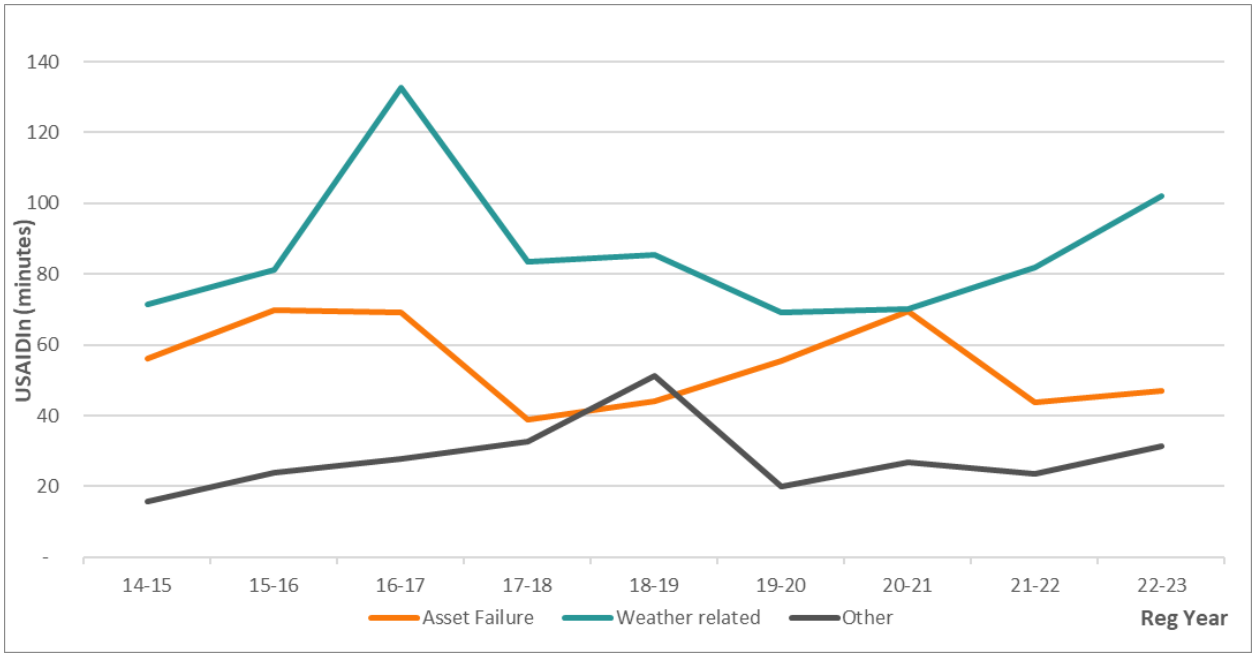


Figure 8 Annual reliability performance – Rural Long Feeder Category

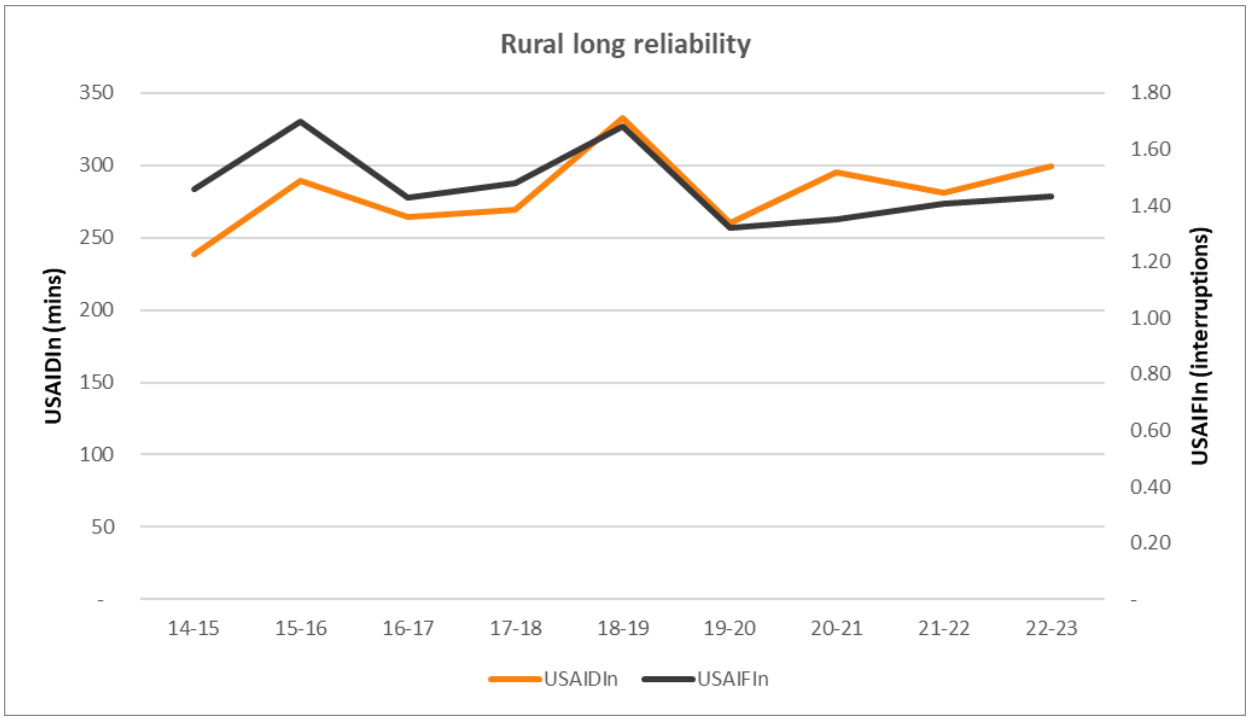
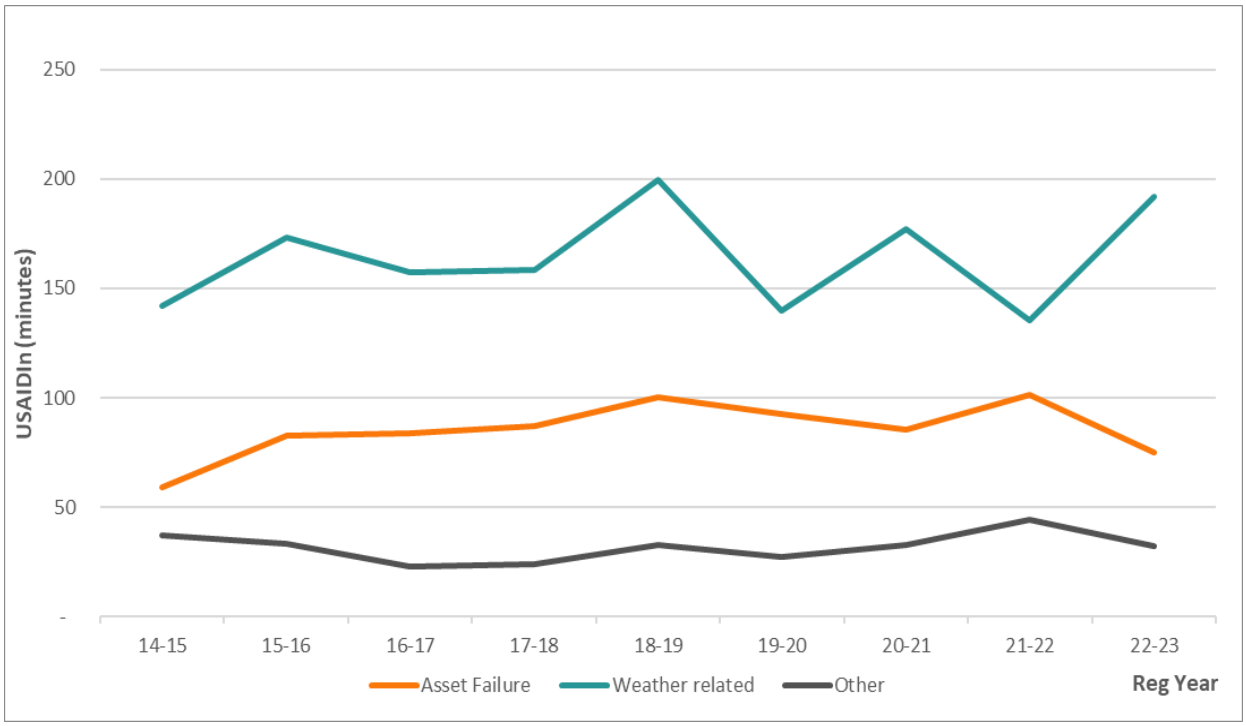


Figure 9 Annual reliability performance by outage cause - Rural Long Feeder category



3.3 Industry practice

We have business-as-usual practices to monitor and report the reliability performance of our network. These practices include identifying and investigating major outages and recurrent outage causes and upgrading the network if appropriate.

We consider these practices are in line with good industry practice and align with the practices of other electricity distribution businesses in Australia and internationally. Similarly, we consider that our range of approaches to address different outage causes within the underlying reliability program are typical industry approaches for similar circumstances.

4 The identified need

4.1 The NER expenditure objectives and STPIS settings

The expenditure forecast for the Maintain Underlying Reliability Performance program is a key component of our overall capex forecast in our Regulatory Proposal for 2025-30. We have considered the regulatory framework under the National Electricity Rules (**NER**) and the National Electricity Law (NEL) and, in particular, how the proposed capex is required to achieve the capex objectives and reasonably reflects the capex criteria, having regard to relevant capex factors. We have also considered our applicable regulatory obligations and requirements. As a result of these considerations, the identified need is to:

- prudently and efficiently comply with our jurisdictional reliability requirements (i.e. to use all reasonable efforts, skills and resources to achieve the reliability and restoration targets each regulatory year) whilst also aligning with STPIS targets, and to otherwise maintain the reliability of supply in line with historical performance; and
- address the concerns and preferences of our customers expressed through our engagement process, that we should invest sufficiently in order to maintain reliability.[14]

4.2 Our jurisdictional reliability requirements that underpin our Maintain Underlying Reliability Performance Program

The EDC sets reliability and restoration targets and reporting thresholds regarding unplanned SAIDI and SAIFI, separately defined for the four feeder categories (CBD, Urban, Rural Short and Rural Long). We are required by our Distribution Licence to use all reasonable efforts, skills, and resources to achieve the reliability and restoration targets in the EDC each regulatory year. In addition, the EDC imposes an obligation to use all reasonable efforts, skills and resources to restore supply to customers as soon as reasonably practicable after there has been an interruption or limitation to supply caused by carrying out repairs (or other actions).

We consider that these requirements, together with the preference of our customers that we invest sufficiently to maintain (i.e. not see a decline in) reliability, oblige us to take action to maintain reliability performance at historical levels, where there is a reasonable likelihood that we will not achieve the stipulated target(s) and where that action is economically efficient.

An important objective of the Maintain Underlying Reliability Performance Program is to ensure that we will continue to comply with and achieve our jurisdictional requirements in the next RCP and not have customers experience a reduction in reliability.

4.3 Net-benefits to SA Power Networks' consumers

A further objective of the Maintain Underlying Reliability Performance Program is maintaining the net-benefit to consumers by addressing areas where performance has declined, in line with the targets set by the STPIS.

4.4 Mitigating persistent and escalating causes contributing to poor reliability

The primary objective of this program does not include making the network more resilient to extreme weather events and the effects of future climate change on the frequency and severity of these events. We have not allowed for the effects of future climate change in the program forecast. Nonetheless, an overarching objective of the program is to mitigate persistent issues and escalating causes that contribute to the poor reliability experienced by customers, some of which are due to weather. As such, this program is necessary to maintain the resilience of supply services to our customers.

[14] This is pursuant to clause 6.5.7(e)(5A) of the NER.

5 Comparison of options

Forecasting expenditure for the Maintain Underlying Reliability Performance program does not lend itself to a bottom-up build as many network upgrades undertaken within this program will be in response to emerging issues that are unknown at this time and our analysis of the issues and upgrades are assessed through the STPIS during the next RCP. Accordingly, like other distributors, we have used a top-down approach to prepare the forecast for this program, based on our recent historical expenditure on the program and the historical reliability performance.

There is confidence that our recent historical expenditure on the program reflects least-cost upgrade solutions providing a net-benefit for customers because most specific upgrades that occur via this program are tested by our analysis of the STPIS impact.[15] That is, upgrade options considered through this program are developed from a detailed technical review of actual network outages and their reliability impact, and an upgrade is only undertaken if the STPIS incentive expected to be achieved by the upgrade outweighs the cost of the upgrade. Given the STPIS incentive is set to reflect the reliability benefit, the upgrade should provide a net-benefit in terms of its effect on reliability and its cost. Furthermore, once implemented, we routinely monitor upgrades to ensure they are effective in achieving the anticipated reliability benefit.

Given the pattern of recent reliability expenditure and reliability performance discussed in Section 3, we consider that the current levels of expenditure preceding 2022-23 with a modest uplift of 1.2m is necessary to at least maintain reliability efficiently in the next RCP in line with our most recent 5-year average performance. Given the recent worsening trend in SAIDI and the expert advice that flying fox numbers and colonies will not reduce (and are in fact likely to grow), there is a risk that underlying reliability could worsen without further increases in expenditure. Therefore, our forecast is actually conservative.

Using this methodology, we estimate the capex forecast for the Maintain Underlying Reliability Performance Program to be $53.8 million over the next RCP. This level of expenditure should allow us to continue to implement the piecemeal upgrades necessary to maintain customer reliability efficiently by addressing specific causes of poor reliability and emerging issues and continue the animal guard installation program, the network automation program and vegetation outage mitigation program into the next RCP.

We considered various solution types to provide long-term sustainable underlying reliability performance mitigation. These solutions reflect methods we have applied historically, providing confidence in the scale of reliability performance that should be realized through these approaches. The solutions are tailored to address specific recurrent causes of network outages that we can identify in our historical outage data for each feeder. The solution types and the primary outage cause(s) they address are summarised below.

Table 1 Mitigation solutions – solutions vs outage causes and effects

Upgrade solution type	Primary outage causes addressed and effect
Re-insulation of lightning prone poor performing line sections with lightning resilient insulators	Reduces outages caused by lightning damaging insulators, and so reduces the likelihood of future outages and resulting customer interruptions.
Installation of covered conductor or undergrounding of bare overhead line sections prone to outages caused by vegetation from outside the prescribed clearance zone	Reduces outages caused by falling vegetation and other wind-blown debris coming into contact with our exposed live equipment, reducing the likelihood of future outages and resulting customer interruptions.

[15] The only exception to this STPIS test are minor upgrade works that we may do to address specific customer and public concerns, where there is little reliability improvement benefit. For example, this could be installing animal guards on low voltage (LV) equipment to reduce animal deaths on a pole outside a customer's home. These upgrades typically account for less than 5% of the expenditure under this program.

Upgrade solution type	Primary outage causes addressed and effect
Installation of remotely monitored and controlled switches and feeder automation	Does not reduce the outage causes but reduces the number of customers & line sections that will experience a sustained interruption following a network fault and reduces supply restoration times.
Installing animal guards	Reduces outages caused by animals (eg bats, possums, birds, etc.) by creating a barrier between live and earthed equipment, reducing animals shorting out across equipment, causing animal deaths and customer interruptions.
Management of protection systems and settings	Reduces the number of customers affected by network faults by conducting proactive and post-event protection audits and reviews and physically adjusting protection settings and systems in the field to enable adequate protection selectivity and sectionalisation on the network, limiting outage duration and severity to customers.

As a counterfactual, if we pursued a 'do-nothing' option in the next RCP (i.e. without this Maintain Underlying Reliability Performance Program), we estimate that the network SAIDI would decline by 30 minutes over the next RCP, representing a 21% worsening of SAIDI.[16] Using the recent AER published Value of Customer Reliability (VCR), we estimate that the cost to customers of this decline in reliability and the associated unserved energy, would be approximately $20 to $25 million per annum.[17] Consequently, the Maintain Underlying Reliability Performance Program is clearly economic, that is, it is efficient for customers.

Table 2 compares the cost of the Maintain Underlying Reliability Performance program against the 'do nothing' option, and highlights that the lowest cost to customers is to implement the program.

Table 1 Maintain Underlying Reliability Performance program costs and economic benefit

Option	($ millions)		
	capex	Unserved Energy Costs (life)[a]	Total Costs (life)[a]
Do nothing	$0	$225 to $280	$225 to $280
Maintain Underlying program	$62.6m	$0	$50

a – Cost is provided over the life of the upgrades (assuming 15 year life on average) for comparison with program capex. Upgrade operating expenditure is assumed to be immaterial for overall net-benefit estimate.

It is important to highlight that without the implementation of this program, a higher number of customers could potentially face (adverse) network reliability performance similar to that currently experienced by the network's worst served customers.

There are also likely to be other consequences of such a decline in reliability which are not considered as part of the cost estimate above. For example, and most materially, such a decline could result in non-compliance with our jurisdictional reliability requirements under the EDC, as we may be considered to have not used all reasonable efforts, skills and resources to achieve the jurisdictional reliability and restoration targets.

16 This estimate is based on our recent experience of it costing around $1.5 million to $2.0 million to mitigate approximately 1 SAIDI minute.

17 Note, change in SAIDI and the value of this change is a high-level estimate for demonstration purposes; hence a range is provided. In line with our expenditure forecasting methodology, this estimate has not been developed from at bottom-up analysis of customer interruptions that the program will avoid.

6 Deliverability of recommended option

We have developed a plan to ensure that it can deliver this Maintain Underlying Reliability Performance Program together among all the increased volume of work reflected in the programs that comprise our total network expenditure forecast in our Regulatory Proposal. This plan considers the detailed implications of our proposed overall uplift in total network expenditure for our required workforce and supporting internal services of information technology, feet, property and human resources.

We consider that our plan is realistic and achievable over the 2025-30 RCP. The details of our approach are set out in our accompanying document, *'5.2.5: Resourcing Plan for Delivering the Network Program'*.

7 How the recommended option aligns with our consumer and stakeholder engagement.

The service outcome that is enabled by the expenditure and program proposed in this business case, is aligned to achieve outcomes that were directly supported by our customers as ultimately reflected in the recommendations of the People's Panel. This is noting that:

- the topic of service reliability was a key focus of our consumer and stakeholder engagement program. One of the four key themes that have framed our engagement under a desire to 'focus on what matters' to our customers has been the theme of 'a reliable, resilient, and safe electricity network';
- in engaging on this theme, and under the specific topic of 'reliability and bushfire safety' we undertook a series of deep-dive workshops called 'Focused Conversations' with a broad range of consumer, industry, government and regulatory body representatives. In these Focused Conversations we sought recommendations on the service outcomes that customers prefer and expect;[18]
- with particular regard to the 'maintain underlying reliability performance program' covered in this business case, we engaged on the identified need by outlining data on our reliability performance, our expenditure in this area and reasons explaining this performance and risks forecast over the 2025-30 RCP. We then posed three scenarios of how we could respond to the need, and the expected outcomes for customers in relation to service, expenditure and price – (1) doing nothing (2) spending to maintain underlying reliability (3) improving reliability for worst served regions and customers;[19]
- while our customers and stakeholders were consistently mindful of energy affordability concerns, the Focused Conversation arrived at a clear consensus recommendation to the People's Panel as the next stage in our engagement program, that we should invest sufficiently in order to maintain reliability and that we should also seek to improve reliability for worst served regions and customers - the latter outcomes being the subject of our 'Reliability Worst Served Customers Improvement Programs' business case; and
- ultimately, the People's Panel deliberated on and affirmed the results of the Focused Conversations in their formal recommendation,[20] and we committed to taking this recommendation forward as reflected in this business case.

Since conducting the People's Panel process, we published a Draft Proposal to play back how we have given effect to customer recommendations and to confirm that those recommendations remain valid given continued cost of living pressures and to obtain further input to refine our Regulatory Proposal. Submissions received on our Draft Proposal suggest that the recommendations of the People's Panel remain valid with respect to this Maintain Underlying Reliability Performance Program, noting that:

- members of the People's Panel affirmed that their recommendations, including in respect of property expenditure as set out in this business case, remain current;[21]

[18] This was covered in workshops 1, 3 and 4 for the Reliability and bushfire safety Focused Conversation. Materials presented at the Focused Conversations are available on our TalkingPower website under the page titled 'focused conversations'. [https://www.talkingpower.com.au].

[19] The recommendations of the Focused Conversation are contained in documents published on our TalkingPower website under the page titled 'focused conversations'. SAPN, *final outputs and recommendations to the People's Panel for Reliability and Bushfire Safety*, October, 2023. Accessible on: [https://www.talkingpower.com.au].

[20] The recommendations of the People's Panel are contained in documents published on our TalkingPower website under the page titled 'people's panel'. SAPN, *SA Power Networks People's Panel Final Report – Balancing service and price*, March 2023.

[21] DemocracyCo, *Submission: SA Power Networks Draft Regulatory Proposal 2025-30*, 30 August 2023.

- some parties such as the South Australian Council of Social Service (**SACOSS**)[22] and the South Australian Government Department of Energy and Mining (**DEM**) [23] generally urged further consideraiton of the overall magnitude of our forecast capital expenditure across in totality. However, at the same time SACOSS noted that it supports maintaining current reliability levels, and DEM specifically noted that it supports expenditure on this Maintaining Underlying Reliability Performance program;[24]
- the Small Business Commissioner of South Australia supported the key projects and projects outlined in our Draft Proposal which includes this Maintaining Underlying Reliability Performance program, noting the importance of reliable service outcomes for small businesses and their customers;[25] and
- the Energy and Water Ombudsman of South Australia supported our proposed service levels and expenditure to support a reliability, resilience and safe distribution network, which include this Maintaining Underlying Reliability Program, as being in the best interests of the South Australian community.[26]

[22] SACOSS, *South Australian Council of Social Service Submission on SA Power Networks' 2025-30 Draft Regulatory Proposal*, September 2023.

[23] DEM, *South Australian Department of Energy and Mining* – Submission, October 2023.

[24] DEM, *South Australian Department of Energy and Mining – Submission*, October 2023.

[25] SMCSA, *Small Business Commissioner of South Australia – Consultation on SA Power Networks 2025-30 Draft Regulatory Proposal,* 1 September 2023.

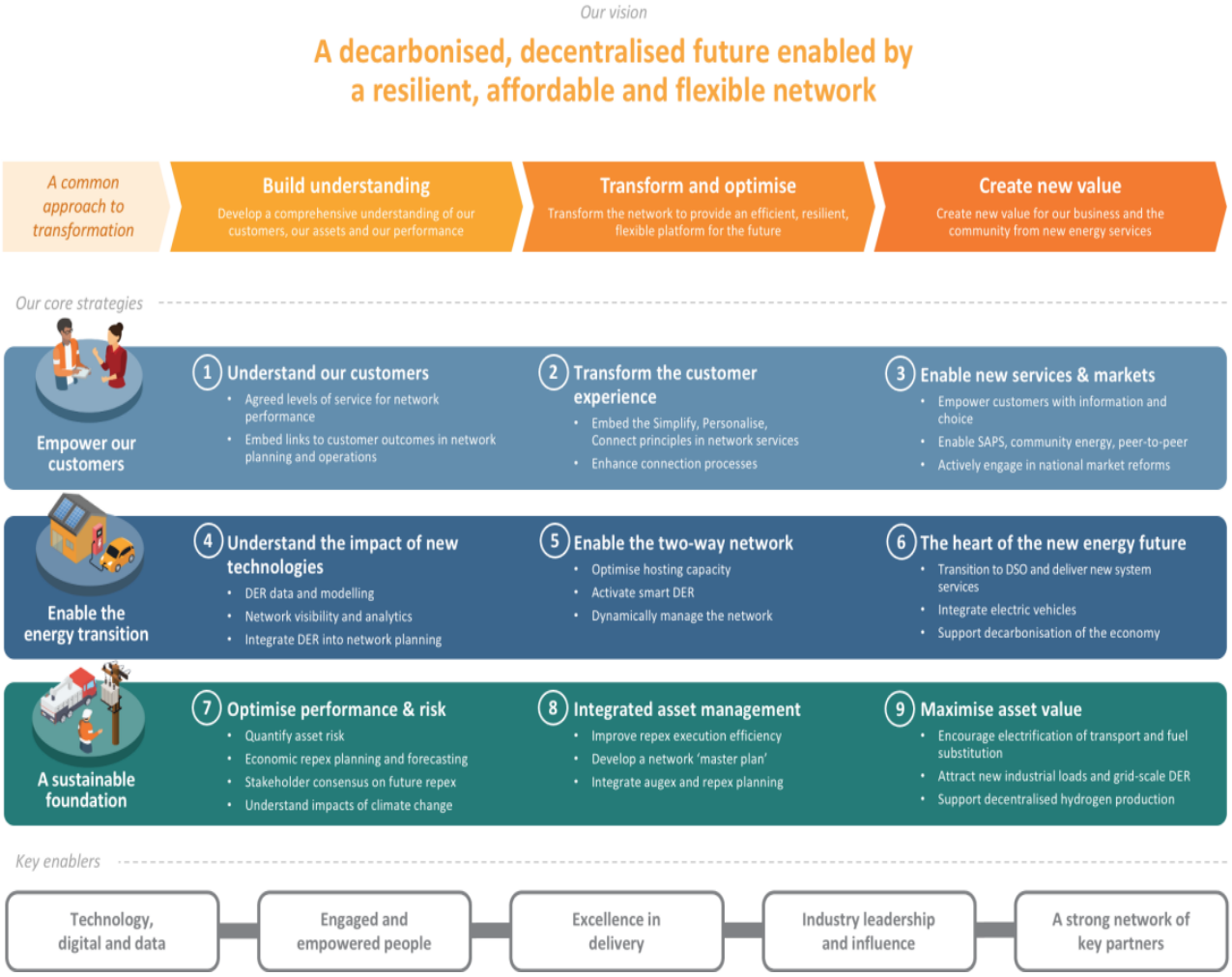
[26] EWOSA, *Energy and Water Ombudsman of South Australia – Submission to SA Power Networks: Draft Regulatory Proposal 2025-30*, 29 August 2023.

8 Alignment with our vision and strategy

This business case which proposes expenditure to allow us to achieve an overall service outcome of maintaining underlying reliability performance for our customers, is aligned to progress our overall company 'Network Strategy' and our vision within this strategy, displayed in Figure 10 below. This is noting that the program recommended in this business is aligned to several of the core strategies within the Network Strategy, as follows:

- 'empower our customers' – the program arises from a comprehensive, multi-staged consumer engagement program that saw us iterating our expenditure forecasts with our customers over five iterations to identify and align our expenditure to achieve the service level and price outcomes that our customers expect and prefer being mindful of alternatives and tradeoffs;
- 'a sustainable foundation' – the program provides an outcome for customers that is not only efficient but also ensures a stable future foundation in light of increasing electrification and potential emerging effects of climate change, by having involved an assessment of customer benefits and risk (where the program to not proceed) and by seeing to ensure that underlying reliability performance does not deteriorate and is maintained. The program has also been considered as part of a holistic approach of considering the role of our network repex versus augex solutions to achieve target service level outcomes.

Figure 10 SA Power Networks' Network Strategy on a page



9 Reasonableness of cost and benefit estimates

We believe that our assumptions are reasonable, and our cost-benefit analysis methodology used for the ongoing assessment for underlying reliability improvements aligns with AER statements on its expectation for formal quantitative risk assessments and cost-benefit analysis.

Key features of our approach demonstrate the appropriateness of our assumptions and analysis, and are as follows:

- we undertake a thorough technical review of outages targeted for mitigation to identify the most feasible improvement solutions tailored to mitigate outages targeted and to estimate the expected improvement in reliability achieved by each solution;
- we have a schedule of solution-type unit costs to estimate the cost of each individual feasible solution developed through the above review. Solution types reflect upgrade approaches we are applying during the current RCP, and therefore, unit costs are calculated from actual costs and work volumes;
- for each solution we apply the expected improvement in supply reliability by the solution (i.e. solution effectiveness), based on independent statistical analysis that we have previously commissioned, which has calculated the expected improvement rates of the various options from the improvements achieved by our historical reliability programs and solutions;
- to estimate reliability benefits, we calculate the STPIS benefit for each solution, using current AER published STPIS rates and our data on the customer volumes by feeder category.
- we undertake cost-benefit analysis for each individual solution to implement the optimal solution that provide the most positive net benefit; and
- once implemented, we routinely monitor solutions to ensure they are effective in achieving the anticipated reliability benefit.