31 January 2023

Attachment 5.6.e: Reliability program

Ausgrid's 2024-29 Regulatory Proposal

Empowering communities for a resilient, affordable and net-zero future.

Ausgrid

Contents

1 EXECUTIVE SUMMARY

This document provides a summary of proposed reliability programs that form part of Ausgrid's overall forecast standard control capital expenditure (capex) for the 2025-29 regulatory period.

The forecast expenditure is proposed to cost effectively meet Ausgrid's regulatory obligations as well as improve reliability for localised parts of the network that deliver poor customer experience. This program is only one part of Ausgrid's overall approach to management of reliability.

Ausgrid is proposing reliability expenditure of $10.8 million, which represents a decrease from $11.7 million in the current regulatory period allowance (19-24 Regulatory Period). This compares to a projected expenditure of $10.2 million over the same timeframe during the current period.

2 RELIABILITY PROGRAMS

2.1 Purpose of this document

This document provides a summary of proposed reliability programs that form part of Ausgrid's overall forecast standard control capital expenditure (capex) for the 2025-29 regulatory period.

The forecast expenditure is proposed to cost effectively meet Ausgrid's regulatory obligations as well as improve reliability for localised parts of the network that deliver poor customer experience. This program is only one part of Ausgrid's overall approach to management of reliability.

2.2 Introduction

The reliability performance of the network is managed through capital (augmentation and replacement) and operational programs. The reliability specific programs form a small subset of the overall capital program and typically address localised parts of the network exhibiting poor reliability performance which is not reflected in overall network performance. These reliability program investments are typically initiated reactively, but occasionally systemic issues are identified that can be addressed proactively.

The reactive investments are typically initiated to address problem areas which have experienced multiple related events (e.g. vegetation, animal or asset caused interruptions on a particular section) at a higher frequency than would normally be expected. Unrelated events or reliability issues that cannot be resolved with a localised solution are excluded from consideration. Likewise, large one-off weather-related outages, and events commencing on Major Event Days (MED) are also excluded from consideration within this program.

As much of the investment is reactive, the forecast expenditures usually only contain project specific detail up to two years ahead. Forecasts beyond that point are based on expected volumes and unit rates.

Investments in this program:

- reduce the fault rate and therefore the number of outages seen by customers, for example by installation of covered conductor to reduce faults from contact with vegetation or animals; and/or
- reduce the number of customers affected by a fault, for example by installing more reclosers to break feeders into smaller sections; and/or
- reduce the length of outages experienced by affected customers, typically by creating new backup connections which provide more options to rearrange the network and restore supply to affected customers following a fault.

While providing a material improvement for the customers concerned, this program will only provide minimal and incidental improvement to overall average customer response times (CAIDI[1]), given the program's locationally targeted nature. Items such as remotely operable switches constructed under this program will also contribute to achieving the objectives of

[1] Customer Average Interruption Duration Index (**CAIDI**)

Phase 3 of the ADMS[2], specifically FLISR[3] functionality which can partially restore High Voltage (**HV**) faults faster through automatic operation of remote switches.

2.3 Reliability Forecast Expenditure

Ausgrid is proposing reliability expenditure of $13.6 million, which represents an increase from $11.7 million in the current regulatory period allowance (19-24 Regulatory Period). This compares to a projected expenditure of $16.9 million over the same timeframe during the current period.

Previous regulatory periods had four programs. The 'Feeder Category' program will no longer form part of the program due to changes in licence conditions which come into effect for the 2025-29 Regulatory Period.

Table 1. Ausgrid reliability program proposal

	Actual $m, real FY24			Proposed $m, real FY24							
Program	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	FY 25-29 Total
Feeder Category	0.11	0.17	0.35	0.15	-	no longer required					
Individual Feeder	0.28	1.83	0.34	1.11	0.54	0.71	0.71	0.71	0.71	0.71	3.54
Individual Feeder Segment	0.04	0.05	0.12	0.38	0.45	0.62	0.62	0.62	0.62	0.62	3.09
High Community Impact Assets	2.28	0.78	0.06	1.17	0.76	0.83	0.83	0.83	0.83	0.83	4.13
TOTAL	**2.60**	**2.66**	**0.52**	**2.66**	**1.75**	**2.15**	**2.15**	**2.15**	**2.15**	**2.15**	**10.76**

2.4 Key Risks

These programs address the risks of:

- Compliance with reliability licence conditions; and
- Loss of electrical supply to customers.

2.4.1 Compliance

To maintain its Distribution Licence, Ausgrid is required to comply with the NSW Ministerial Licence Conditions (the Licence Conditions)[4]. These require that certain reliability levels must be maintained and when they are not, that investigations and appropriate corrective actions initiated.

The Licence Conditions are currently under review[5] and are expected to be resolved and in effect commencing 1 July 2024. The most significant changes are:

[2] Advanced Distribution Management System (**ADMS**)
[3] Fault Location Isolation and Service Restoration (**FLISR**)
[4] https://www.ipart.nsw.gov.au/sites/default/files/documents/ausgrid-ministerial-licence-conditions-1-december-2016_0.pdf
[5] https://www.ipart.nsw.gov.au/sites/default/files/cm9_documents/Review-of-electricity-network-operators-licences--Issues-Paper-and-Draft-Report.PDF

- Removal of Schedule 2 Network Overall Reliability Standards;
- Introduction of SAPS and Microgrid standards; and
- Removal of Urban, Short Rural and Long Rural feeder standards, replacing them with standards linked to line length.

These changes are not expected to materially change the level of investment required to maintain compliance.

2.4.2 Loss of electrical supply

The value of the loss of electrical supply is calculated based on the quantum of Expected Unserved Energy (**EUE**) and the Value of Customer Reliability (**VCR**). This value is used when assessing cost effective mitigation options, and its derivation is set out in Figure 1 below.

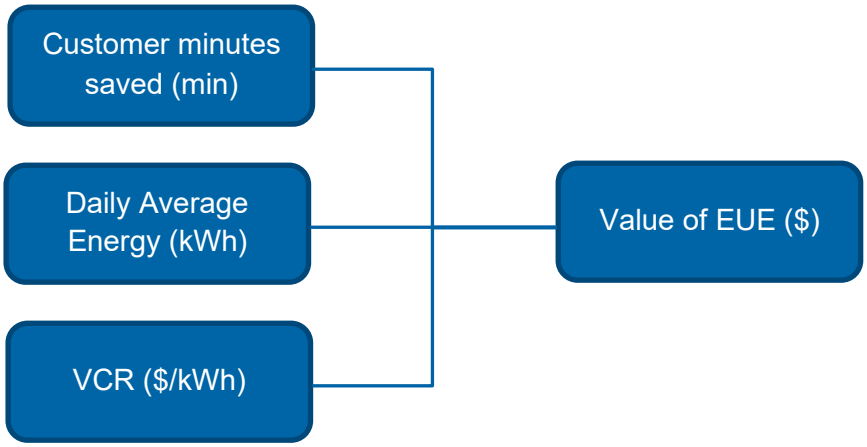


Figure 1 – Calculation of Expected Unserved Energy

Employing EUE as the basis for quantifying risk enables the costs and benefits of various projects and options to be compared on an equivalent basis.

3 CONTRIBUTING FACTORS

Every part of the network experiences a unique reliability performance that is a function of:

- Fault rate;
- Number of customers impacted; and
- Restoration time (whether by switching around the fault or by repairing the fault)

3.1.1 Fault Rate

Fault rates are a measure of the frequency of faults per unit length and / or time. Faults are typically caused by:

- Equipment failure;
- Third party damage (e.g. cable dig in, car hit pole);
- Vegetation;
- Animals;
- Lightning;
- Wind;
- Fires;
- Protection maloperation;
- Overload (not covered by this program); and
- Operator error (not covered by this program)

Alternative technology such as underground cables, HV Covered Conductors (**CC** or **CCT**) and Low Voltage (**LV**) Aerial Bundled Cables (**ABC**) typically have lower fault rates than bare overhead mains as they have less exposed parts and are therefore less sensitive to wind, vegetation and animal induced interruptions.

Aged assets may also exhibit different (higher) fault rates compared to new assets.

3.1.2 Number of customers impacted

For each fault, the number of customers impacted is defined by the size of the protection zone of the upstream device (e.g. a zone substation circuit breaker, pole mounted recloser, sectionaliser or fuse) that isolates the faulted section from the healthy network.

3.1.3 Restoration Time

Restoration time is a measure of how long it takes to restore supply to customers after the fault occurs. It is often measured using the metric CAIDI, which is informative when applied to the group of customers affected by the outage[6].

[6] CAIDI must be used with caution as a more widespread measure as it can be influenced by counterintuitive factors – for example a switching error which affected 100,000 customers but was rectified within 5 minutes is undesirable but would materially reduce average CAIDI.

Before restoration can commence, the location of the fault must be identified. This is influenced by the number of fault indication devices (either locally or remotely readable) and length of feeder that is required to be patrolled.

Once the fault location is identified, customers are restored through either switching or after equipment repairs. Switching may be done locally, remotely, or automatically through FLISR.

4 TYPICAL SOLUTIONS

Projects initiated under this program address the contributing factors to reduce the frequency and / or duration of network interruptions. The three typical types of corrective measures to improve reliability are outlined below.

4.1.1 Reduce fault rate

This area focuses on reducing the likelihood of the equipment failing. Much of this is already managed in the maintenance and replacement programs, but additional requirements are often identified through reliability investigations.

Typical solutions in this area may include:

- Targeted tree trimming / removal;
- Covering of bare mains and apparatus to protect against vegetation and animals;
- Undergrounding of overhead mains; or
- Asset replacement / removal

4.1.2 Reduce the number of customers impacted

Typical solutions to manage the number of customers impacted may include:

- Segmenting the feeder through network rearrangement with new
    - Feeders;
    - Reclosers;
    - Sectionalisers; and
    - Fuses
- Additional redundant supplies
    - Zone or Sub-transmission auto-reclosing functionality; and
    - CBD Triplex N-1 HV network
- Optimising fault rates and customers at risk by moving ‘open points’
- Altering protection settings
    - Adding reclosing functionality; and
    - Correcting protection design issues

4.1.3 Improve restoration time

This area focuses on reducing the time required to restore affected customers during an event (CAIDI).

Typical solutions in this area may include:

- Additional fault identification devices (Reclosers, EFIs[7], LFIs[8]);

[7] Earth Fault Indicators (**EFI**)
[8] Line Fault Indicators (**LFI**)

- Additional remote switches (Reclosers, DM&C[9], ELBS[10]);
- Additional backup supply capacity to reduce switching steps; and
- Move key switches away from difficult to access locations such as:
    - Customers' premises;
    - Locations requiring fall arrest equipment or asset access crews; and
    - Across gorges or river crossings.
- Implementation of FLISR.

[9] Distribution Monitoring & Control (**DM&C**)
[10] Enclosed Load Break Switch (**ELBS**)

5 FEEDER CATEGORY

5.1 Scope

In the current previous regulatory control periods, Ausgrid has had a program to meet the requirements of Schedule 2 of the NSW Licence Conditions (Network Overall Reliability Standards). IPART is removing these requirements and therefore this program has been removed from our regulatory proposal but has been included here to support transparent comparisons between past and future expenditure. A description of the licence conditions and historic performance has been included as Appendix A to support transparent comparison between past and proposed obligations and expenditure.

5.2 Proposed Investment

Table 1. Proposed investment - feeder category

	$m, nominal			$m, real FY24						
Program	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	FY 25-29 Total
Feeder Category	0.11	0.17	0.35	0.15	-	no longer required					

Ausgrid are not proposing any investment in this program for the 25-29 regulatory period due to the removal of this licence condition requirement effective 1 July 2024.

6 INDIVIDUAL FEEDER

6.1 Scope

This program enables Ausgrid to meet the requirements of Schedule 3 of the Licence Conditions (Individual Feeder Standards). Projects funded by this program are identified by a quarterly review of distribution feeders exceeding the associated reliability standard.

6.2 Background

To maintain its Distribution Licence, Ausgrid is required to comply with the Licence Conditions. Each feeder is assessed against the relevant SAIDI and SAIFI standards every quarter on a rolling 12-month basis. Feeders that exceed the standards are notified to IPART in the quarterly report. Investigations into causes and potential reliability improvements are undertaken. If cost effective solutions are identified, they are initiated under this program.

6.2.1 Existing Standards

Schedule 3, which sets out the individual feeder standards, is shown as **Figure 2** below.

SCHEDULE 3 – INDIVIDUAL FEEDER STANDARDS

1. ***SAIDI*** **Individual Feeder Average Reliability Duration Standards (Minutes per *customer*)**

SAIDI **(Minutes per *customer*)**	
AUSGRID	
Feeder Type	
CBD Sydney	100
Urban	350
Short-rural	1000
Long-rural	1400

2. ***SAIFI*** **Individual Feeder Standards Average Reliability Interruption Standards (Number per *customer*)**

SAIFI **(Number per *customer*)**	
AUSGRID	
Feeder Type	
CBD Sydney	1.4
Urban	4
Short-rural	8
Long-rural	10

Figure 2 - Extract from NSW Licence Conditions

6.2.2 Historical Performance

Ausgrid's historical performance is set out in **Figure 3** below. While the number of feeders exceeding the threshold steady improved between 2007 and 2013, it has remained more stable since then, on average, with a number of larger fluctuations.

Figure 3.1 Count of Feeders Exceeding Individual Feeder Standards

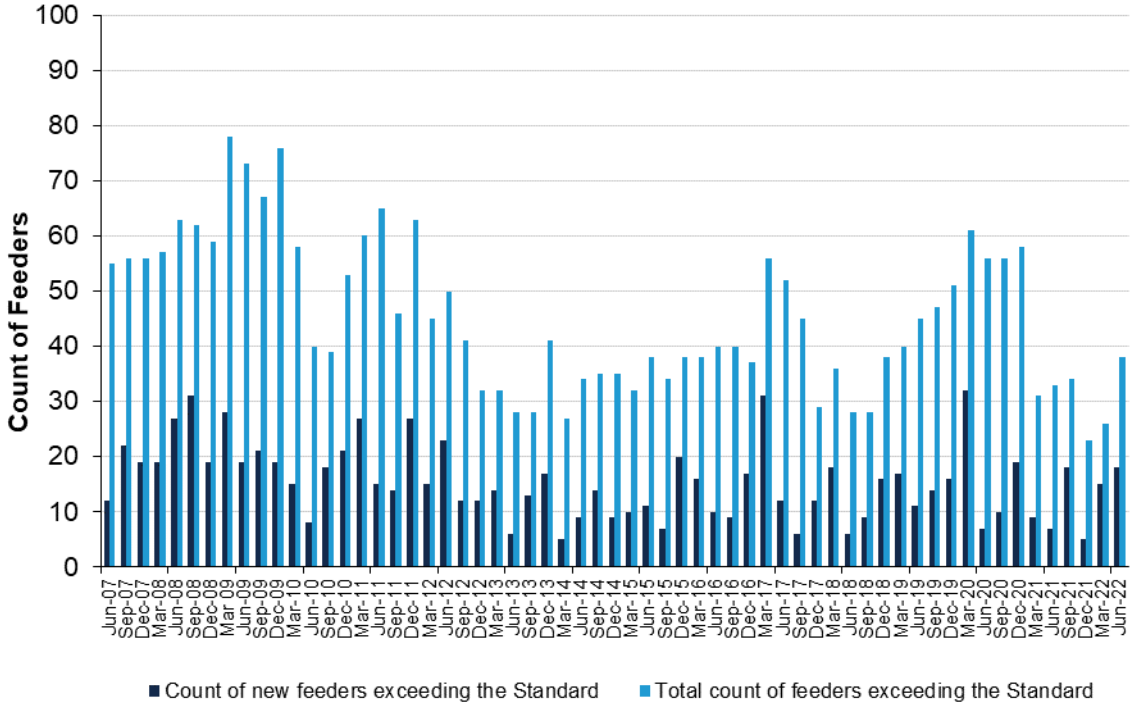


Figure 3 - Extract from Ausgrid IPART Quarterly Performance Report - June 2022

6.2.3 Proposed Standards

The proposed NSW Licence Conditions for Ausgrid from 1 July 2024 are outlined in **Figure 4**.

Feeder Category	Proposed standard
CBD	*SAIDI 100* *SAIFI 1.4*
Urban Short Rural Long Rural	$SAIDI = 262 + 108\sqrt{Length} + \text{MIN}\,(160, \frac{5500}{Length})$ $SAIFI = 3.1 + 0.44\sqrt{Length} + \text{MIN}\,(0.65, \frac{21}{Length})$

Figure 4. Proposed NSW Licence Conditions

Appendix b - Proposed Licence Condition Standards shows the proposed change in SAIDI and SAIFI standards across the existing feeder categories. The SAIDI and SAIFI standard for each feeder was compared to its existing feeder category to determine whether that feeder's standard increased or decreased.

6.2.4 Individual feeder standard change – number of feeders and % of population

Table 2 outlines how many feeders are proposed to have increased or decreased standards for each feeder category.

Table 2. Individual feeder standard change

	SAIDI		SAIFI	
FEEDER CATEGORY	RELAXED STANDARD # (%)	TIGHTENED STANDARD # (%)	RELAXED STANDARD # (%)	TIGHTENED STANDARD # (%)
CBD	no change	no change	no change	no change
Urban	1568 (100%)	0 (0%)	1552 (99%)	16 (1%)
Short rural	81 (21%)	297 (78%)	12 (3%)	366 (97%)
Long Rural	4 (100%)	0 (0%)	3 (75%)	1 (25%)

6.2.5 Individual feeders exceeding standards

To demonstrate the possible impact of the proposed licence condition SAIDI and SAIFI standard changes, the volume of feeders exceeding each standard for the 12-months up to the end of June 2022 quarter were modelled and are shown in **Table 3.**

Table 3. Individual feeders exceeding standards

	SAIDI		SAIFI	
FEEDER CATEGORY	CURRENT STANDARD	PROPOSED STANDARD	CURRENT STANDARD	PROPOSED STANDARD
CBD	1	1	0	0
Urban	29	6	6	1
Short rural	2	3	0	0
Long Rural	1	1	0	0

While the overall number of feeders exceeding the standards has decreased, some feeders that were previously compliant are now non-compliant, and vice versa.

The feeders that exceed the new standards are typically the worst performing in each category and are the ones that were most likely to receive investment. The change to the

licence condition standards has seen a relaxation of Urban feeder standards and a tightening in Short Rural standards.

Historically, short rural feeders made up the majority of projects initiated due to exceeding individual feeder standards (i.e. following investigation). Given this, it is expected that the volume of projects will not change materially. Further, while the new urban feeder standards will identify fewer feeders for investigation, it is expected that the candidate feeders which meet the criteria for investment once investigated will be similar. As such the historical volume of projects remains a robust indicator of future investment levels.

6.3 Proposed Investment

Ausgrid's proposed investment is the product of proposed volume of feeders and unit rate.

Table 4. Proposed investment – individual feeder

	$m, nominal			$m, real FY24							
Program	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	FY 25-29 Total
Individual Feeder	0.28	1.83	0.34	1.11	0.54	0.71	0.71	0.71	0.71	0.71	3.54

The cost benefit analysis of the proposed program is discussed in Section 9.

There has been an 37% decrease in this program between the 19-24 and 25-29 submissions primarily driven by cost efficiencies leading to a decrease in unit rates, and an increase in Individual Feeder Segment investment (see Section 6). This difference is highlighted in **Figure 5** below.

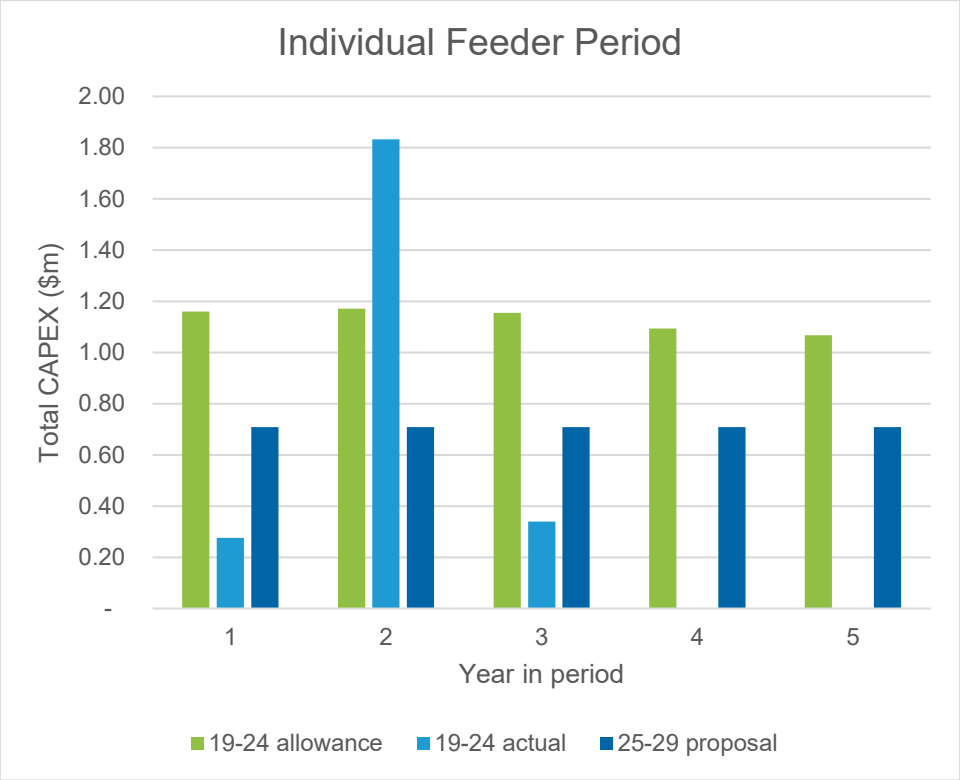


Figure 5 - Individual Feeder Program Investment

6.3.1 Proposed Volume

Applying the rationale set out in 6.2.5, that is the historical volume of projects remains a good indication of future project volumes, Ausgrid has projected an annual volume of 6 projects based on the historical average project volume of 6.

Table 5. Proposed volume – individual feeder projects

	2018	2019	2020	2021	2022	Average	Forecast
Individual Feeder Projects	2	17	9	1	1	6.0	6.0

6.3.2 Unit rate

The forecast for this program applies a unit rate of $118,139 (FY24 Real Direct) based on a weighted average cost of the expected mix of solutions.

Typical solutions include:

- Reconductoring with Covered Conductor Thick (**CCT**) to reduce the number of faults
- Installation of Reclosers to isolate faulted sections of line to reduce the impact of outages on customers upstream of faulted sections
- Installation of Line Fault Indicators (**LFIs**) to assist in locating faulted sections of line more quickly
- Installation of remotely controllable Enclosed Load Break Switches (**ELBS**) to facilitate faster switching compared to sending field operators to site, especially during weather events.

7 INDIVIDUAL FEEDER SEGMENT

7.1 Scope

This program enables Ausgrid to address feeder segments that are experiencing poor performance despite the overall feeder meeting the requirements of Schedule 3 of the Licence Conditions (Individual Feeder requirements). Projects funded by this program are identified during the quarterly review of feeders exceeding their respective feeder category standards and ad hoc network wide studies typically triggered in response to recent interruptions. With recent modelling improvements, we intend to incorporate more regular bulk network analysis to trigger detailed investigations.

7.2 Background

On feeders where there are separate protection devices (circuit breakers, reclosers, sectionalisers, or fuses), each segment can experience significantly different reliability performance. This can mean that the Individual Feeder program (which operates on average performance of a feeder) may not identify customers that are receiving unsatisfactory performance.

This program enables the poor performing feeder segments to be improved. This early intervention may prevent the entire feeder exceeding the Licence Conditions' Individual Feeder Standards.

7.3 Proposed investment

The proposed investment is the product of forecast project volumes and unit rate.

Reduction of investment in this program will have a flow on impact into more feeders exceeding the Individual Feeder Standards and a subsequent increase in expenditure in that program.

Table 6. Proposed investment

	$m, nominal			$m, real FY24							
Program	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	FY 25-29 Total
Individual Feeder Segment	0.04	0.05	0.12	0.38	0.45	0.62	0.62	0.62	0.62	0.62	3.09

The cost benefit analysis of the proposed program is discussed in Section 9.

There has been a 263% increase in this program between the 19-24 and 25-29 submissions as we focus more on the Individual Feeder Segment program which addresses the customers with the least reliable supply. This is shown in **Figure 6** - Individual Feeder Segment Program Investment.

This increase has been materially offset by decreases in the other feeder category and individual feeder programs as shown in Table 1.

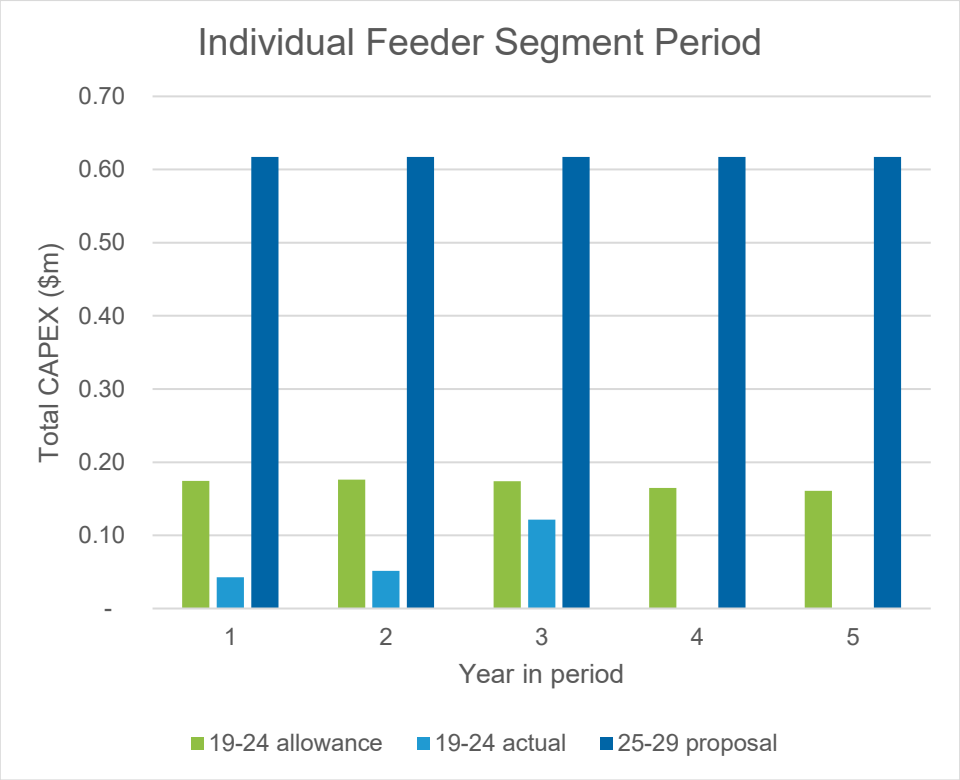


Figure 6 - Individual Feeder Segment Program Investment

7.3.1 Proposed Volume

During 2021, new modelling and EUE methodologies were developed that have identified additional opportunities to deliver cost effective improvements to customer reliability. These tools can now perform bulk run analysis to identify recloser and CCT locations for further investigation and also quantify the potential EUE improvements for proposed options. This has identified significantly more locations where we can proactively provide cost effective reliability improvements for customers instead of reacting to poor performing segments on the network. As this process is still in the early stages, we are proposing a moderate increase in the volume of projects to 6 per annum from the historical average of 2.6.

Table 7. Proposed volume - feeder section projects

	2018	2019	2020	2021	2022	Average	Forecast
Feeder Section Projects	2	0	5	3	3	2.6	6

7.3.2 Unit rate

This program forecast uses a unit rate of $102,895 (FY24 Real Direct) based on a weighted average cost of the expected mix of solutions. While the range of solutions available is similar to the Individual Feeder Category above, the mix and scope is different, leading to a lower average cost per project.

Typical solutions include:

- Reconductoring with Covered Conductor Thick (**CCT**) to reduce the number of faults;
- Installation of Reclosers to isolate faulted sections of line to reduce the impact of faults on other customers;
- Installation of Line Fault Indicators (**LFIs**) to locate faulted sections of line more quickly; and
- Installation of remotely controllable Enclosed Load Break Switches (**ELBS**) to facilitate faster switching compared to sending field operators to site, especially during weather events.

8 HIGH COMMUNITY IMPACT ASSETS

8.1 Scope

Ausgrid undertakes this program to meet the IPART imposed reliability and power quality requirements for assets supplying critical infrastructure services and assets that affect a large volume of customers such as zone substation or sub-transmission networks.

8.2 Background

IPART's Electricity Networks Reporting Manual[11] classifies major incidents as those where a reliability or power quality issue results in a disruption, for greater than 2 hours, to the normal functioning of significant community infrastructure such as:

- Peer group A1, A2, A3 and B hospitals;
- Road tunnels on motorways that have emergency evacuation systems;
- Rail and air transport systems where travel is affected;
- Events and buildings where greater than 5,000 people could be affected by an outage;
- Other community infrastructure determined by the network operator to be of National, State or Regional significance; or
- > 5,000 customers for > 4 hours.

Ausgrid maintains a list of sites that meet these criteria and annually reviews the supply arrangements to ensure that they receive acceptable performance.

All investments in this program are site specific depending on the reliability exhibited at those locations on the network.

Some examples of recent investments are:

- Augmentation of the HV network and protection systems supplying the Sydney Harbour Tunnel after an interruption in 2017;
- Protection upgrades to enable reclosing functionality on sub-transmission feeders; and
- Busbar covering at zone substations to prevent vegetation and animal contact.

8.3 Proposed investment

As investments in this program can be sporadic and the magnitude of investment required for each project unknown, we have used a representative investment of $825,000 (FY24 Real Direct) per year which is in line with recent historical spends.

[11] https://www.ipart.nsw.gov.au/sites/default/files/cm9_documents/Electricity-networks-reporting-manual-Incident-reporting-February-2022.PDF

Table 8. Proposed investment - high community impact assets

	$m, nominal			$m, real FY24							
Program	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	FY 25-29 Total
High Community Impact Assets	2.28	0.78	0.06	1.17	0.76	0.83	0.83	0.83	0.83	0.83	4.13

The cost benefit analysis of the proposed program is discussed in Section 9.

There has been a 20% decrease in this program between 19-24 and 25-29 submissions primarily driven by a change in the unit rate. This is shown in **Figure 7**Error! Reference source not found..

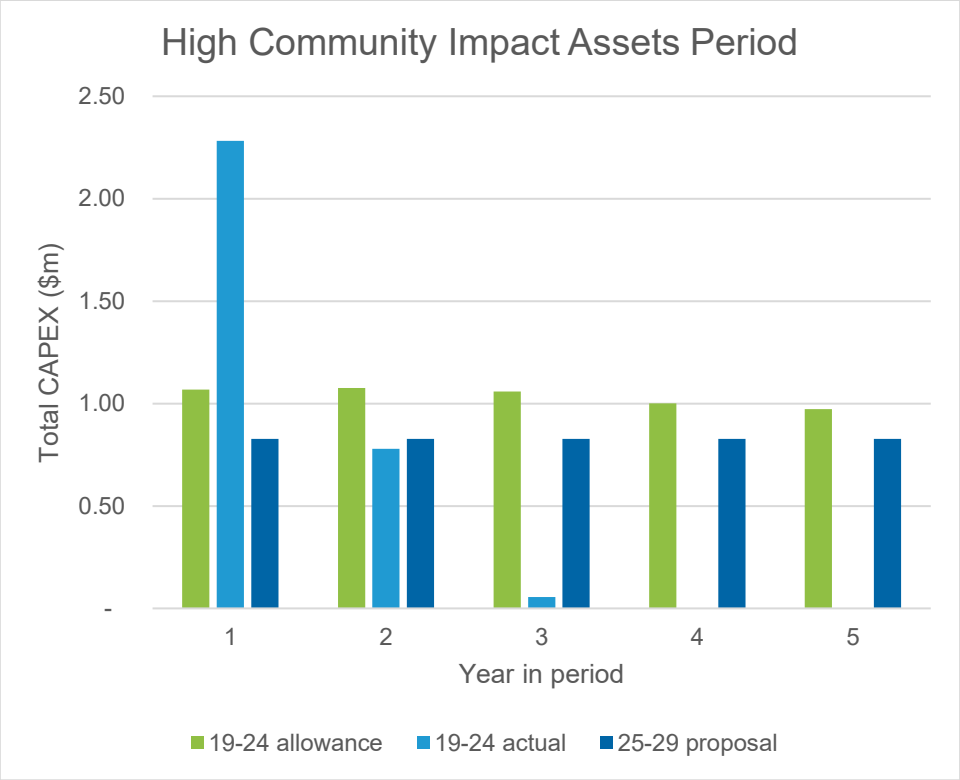


Figure 7 - High Community Impact Assets Program Investment

9 COST BENEFIT ANALYSIS

9.1 Individual Feeder

The Cost Benefit Analysis (**CBA**) for the Individual Feeder and Individual Feeder Segment programs are based on the historical costs of reliability projects and the value of the corresponding modelled reduction in EUE. These expenditure levels are then projected forward, adjusted for the expected number of feeders exceeding licence condition standards in the future.

The weighted average Benefit to Cost Ratio (**BCR**) for historic projects within the Individual Feeder and Individual Feeder Segment programs is 4.8 with the individual project BCRs ranging as per **Figure 8** below.

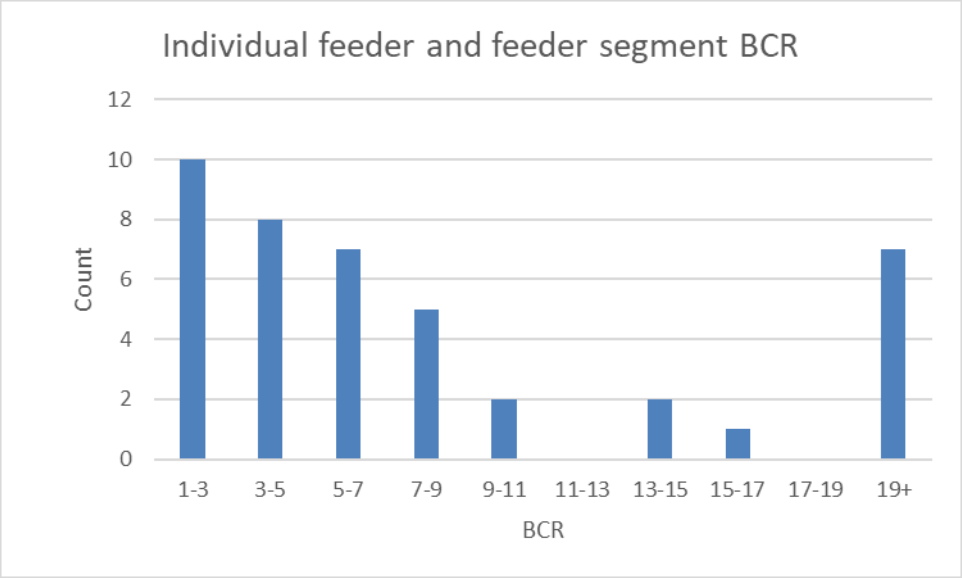


Figure 8 - Individual Feeder and Segment Benefit to Cost Ratio

9.2 Individual Feeder Segment

The CBA methodology for the forecast projects within the Individual Feeder Segment program is the same as for the Individual Feeder program.

The proposed Individual Feeder Segment program is dominated in the initial years by the HV Auto-reclosing enablement. These projects have a modelled weighted average BCR of 23.6 with the individual project BCRs ranging as per Figure 9 below.

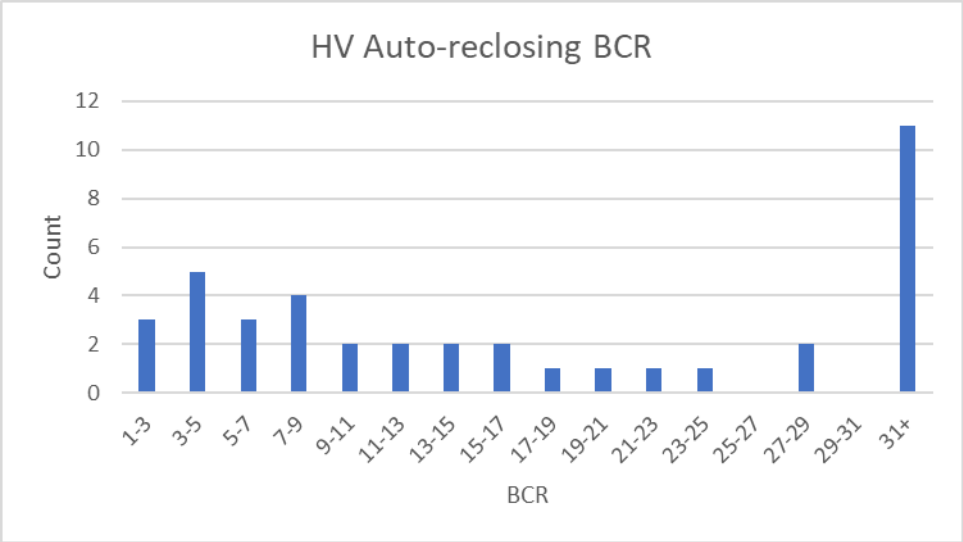


Figure 9 - HV Auto-reclosing Benefit to Cost Ratio

9.3 High Community Impact

The proposed High Community Impact program is dominated in the initial years by the sub-transmission auto-reclosing enablement. These projects have a modelled weighted average BCR of 5.5 with the individual project BCRs ranging as per **Figure 10** below.

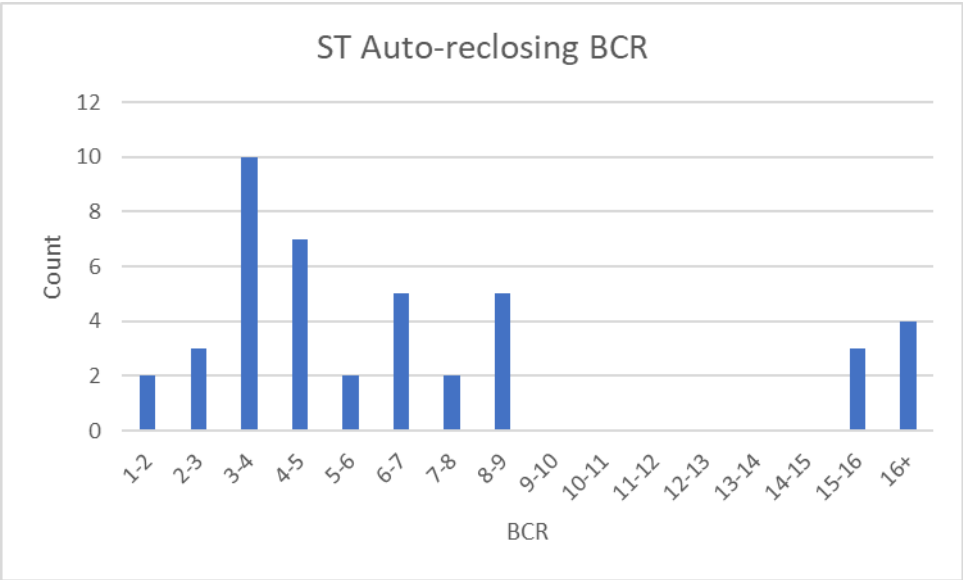


Figure 10 - Sub-transmission Auto Reclosing Benefit to Cost Ratio

10 INTERACTION WITH OTHER PROGRAMS

Interactions between the Reliability programs and other programs that impact reliability will be monitored to ensure that double counting does not occur.

Specifically, these programs primarily manage the risk of day-to-day reliability events and does not consider risks associated with climate driven major events (typically captured via Major Event Days and considered within the new Resilience program).

APPENDIX A - FEEDER CATEGORY

B.1 Scope

In previous regulatory periods, Ausgrid had a program to meet the requirements of Schedule 2 of the Licence Conditions (Network Overall Reliability Standards). IPART is removing these requirements and therefore Ausgrid has removed this program from the 25-29 regulatory proposal. An explanation has been included here to support transparent comparisons between past and future expenditure.

B.2 Background

To maintain its Distribution Licence, Ausgrid is required to comply with the Licence Conditions. The sum of all interruptions in a financial year must not exceed the feeder category standard (excluding interruptions allowed for under Schedule 4, primarily Major Event Days).

B.3 Existing Standards

SCHEDULE 2 – NETWORK OVERALL RELIABILITY STANDARDS

1. *SAIDI* Average Reliability Duration Standards (Minutes per *customer*)

***SAIDI* (Minutes per *customer*)**	
AUSGRID	
Feeder Type	
CBD Sydney	45
Urban	80
Short-rural	300
Long-rural	700

2. *SAIFI* Average Reliability Interruption Standards (Number per *customer*)

***SAIFI* (Number per *customer*)**	
AUSGRID	
Feeder Type	
CBD Sydney	0.3
Urban	1.2
Short-rural	3.2
Long-rural	6

B.4 Historical Performance

SAIDI	Standard	FY17	FY18	FY19	FY20	FY21	FY22
CBD	45.00	14.49	12.29	24.32	3.62	18.77	6.15
Urban	80.00	65.56	59.01	60.40	80.95	60.79	62.94
Short Rural	300.00	113.00	109.23	125.28	160.63	129.59	130.64
Long Rural	700.00	814.80	335.06	453.31	652.53	613.65	1,563.16

SAIFI	Standard	FY17	FY18	FY19	FY20	FY21	FY22
CBD	0.30	0.03	0.06	0.11	0.01	0.02	0.01
Urban	1.20	0.60	0.60	0.55	0.64	0.52	0.55
Short Rural	3.20	1.09	0.94	0.98	1.01	0.87	0.93
Long Rural	6.00	3.48	1.52	2.06	2.05	2.01	2.04

While these standards are exceeded on occasion, the performance is typically well within the standard except for major weather impacts which can cause fluctuations in performance.

B.5 Proposed Investment

While there has been some recent expenditure from historic projects, Ausgrid has not initiated any new projects in this program for several years as it is more prudent to invest at the individual feeder or feeder segment level which then also provides inherent benefit to the feeder category.

	$m, nominal			$m, real FY24							
Program	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	FY 25-29 Total
Feeder Category	0.11	0.17	0.35	0.15	-	no longer required					

Ausgrid are not proposing any investment in this program due to the removal of this requirement effective 1 July 2024.

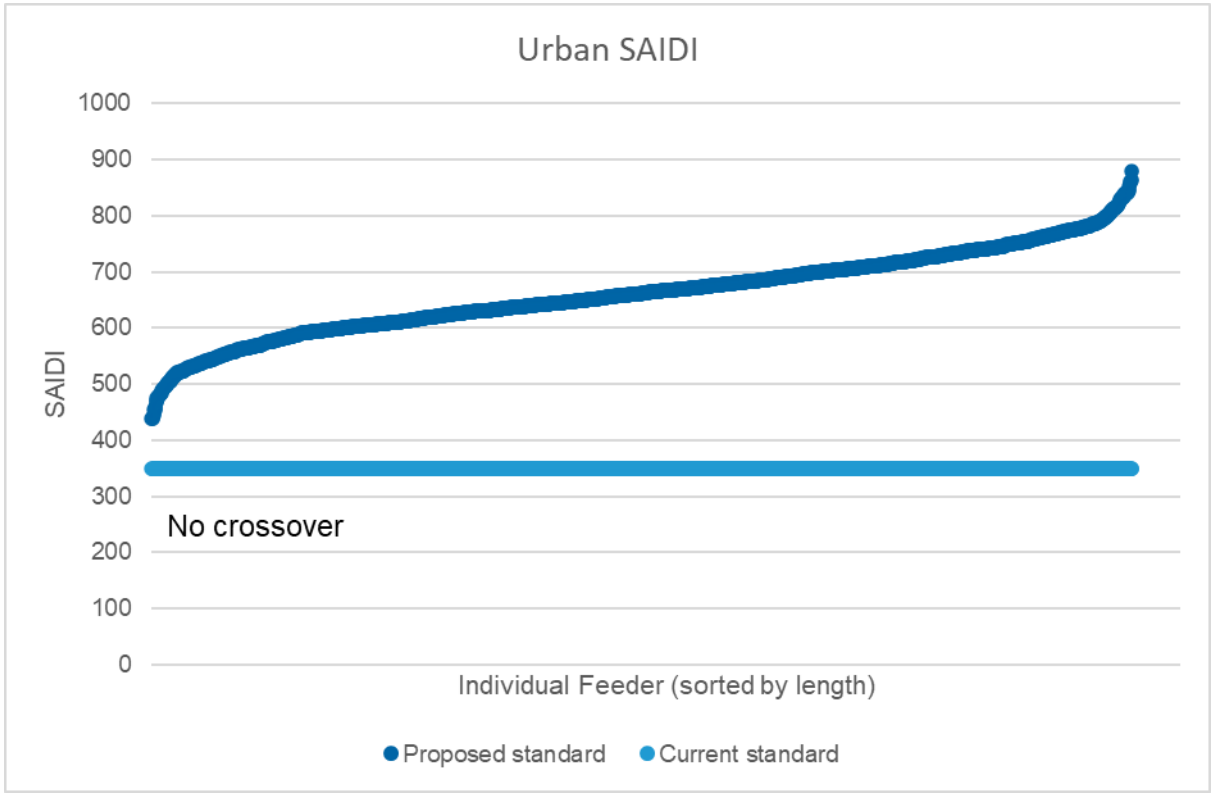
APPENDIX B - PROPOSED LICENCE CONDITION STANDARDS

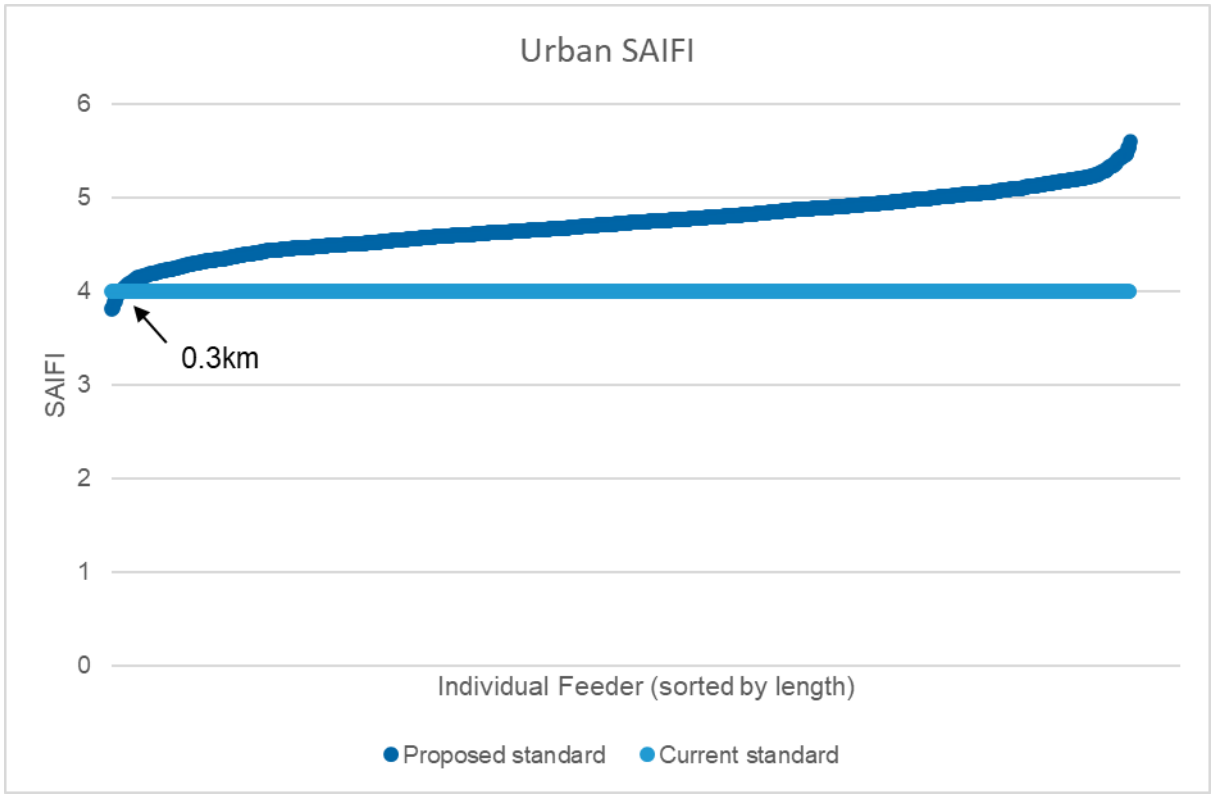
The graphs below show a comparison of the proposed individual feeder standards and the current standards based on the feeder lengths at June 2022.

B.1 CBD

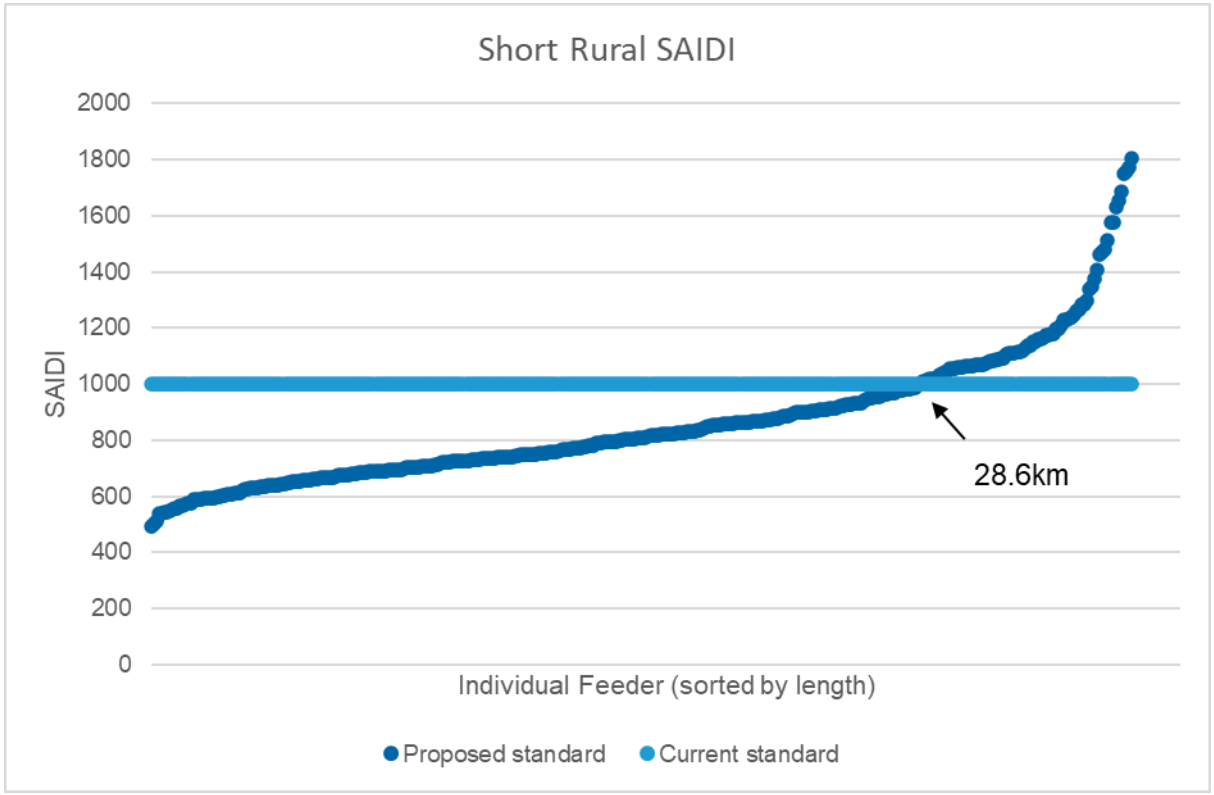
Unchanged

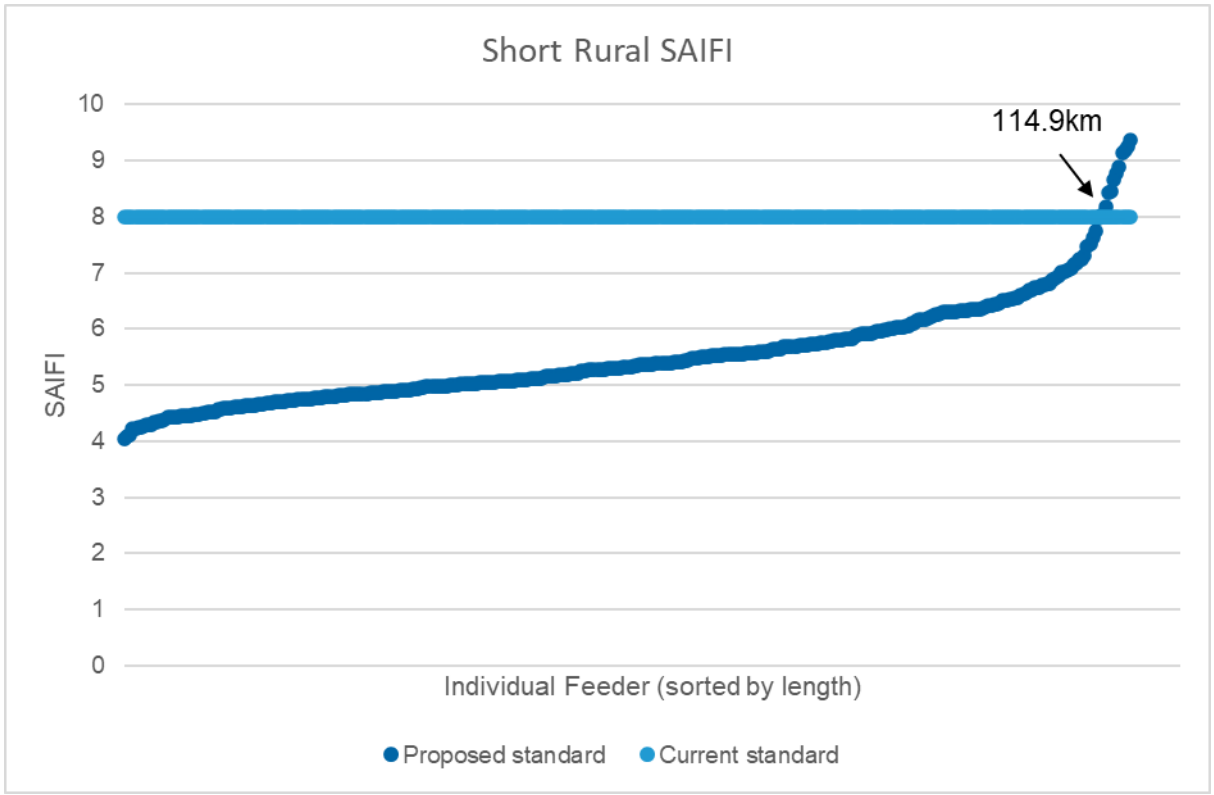
B.2 Urban





B.3 Short Rural





B.4 Long Rural