

Record number: D2022/505476
Container number: F2021/3234

Lyndon Rowe
Utilities Commissioner
Utilities Commission
GPO Box 915
DARWIN NT 0801

Dear Mr Rowe *Lyndon*

RE: POWER AND WATER PROPOSED NETWORK TARGET STANDARDS SUBMISSION

Power and Water Corporation (PWC) thanks the Commission for its letter dated 1 September 2022 concerning the requirements and expectations for submission of PWC's proposed network target standards. Accordingly, PWC is pleased to present its proposed Network Target Standards for the 2024-29 regulatory period in line with clause 3.1.1 of the Electricity Industry Performance (EIP) Code.

The proposed targets for the 2024-29 regulatory period, shown in table 1, are based on the average performance of the past five years and have been developed for each of the four feeder categories, namely CBD, Urban, Rural Short and Rural Long. The following information has been used to determine the targets:

- The preferences of our customers based on feedback from the customer engagement program
- Historical performance of feeder categories
- Historical expenditure to maintain the reliability level
- Benchmarking our performance against other utilities

Further, PWC consider this to be an appropriate method for forecasting on the basis that:

- This approach has been taken in previous submissions
- Customers are happy with the recent performance of the network and do not want increased investment to achieve improvements
- Historical performance has been reasonably consistent for the past five years with only 3 breaches of the SAIDI target and 4 of the SAIFI target. Historical performance is also in line with comparable distributors.
- Expenditure at a similar magnitude as the historical expenditure is expected to result in consistent performance going forward

Table 1: Proposed network reliability standards to be applied to Power and Water for the 2024-29 regulatory period

Feeder Category	Index	Previous Target	5-Year Average	Proposed Target	Change	% Change
CBD	SAIDI	4	5.4	4	0	0%
	SAIFI	0.1	0.1	0.1	0	0%
Rural Long	SAIDI	1500	1265.1	1260	240 ↓	16%
	SAIFI	19	16.3	15	4 ↓	21%
Rural Short	SAIDI	190	247.0	190	0	0%
	SAIFI	3	3.6	3	0	0%
Urban	SAIDI	140	80.9	80	60 ↓	43%
	SAIFI	2	1.4	1.4	0.6 ↓	30%

Please see *attachment 1 - Review of the network reliability standards for the 2024-29 regulatory period* for full details of the proposed submission.

Should you require any further information in relation to this submission, please do not hesitate to contact Stuart Easie, Senior Manager Asset Management, by email at Stuart.Easie@powerwater.com.au.



Djuna Pollard
Chief Executive Officer

20 December 2022

Review of the network reliability standards for the 2024-29 regulatory period

This document proposes revised reliability standards to be applied to Power and Water Corporation (PWC) for the 2024-29 regulatory period. Standards have been developed for each of the four feeder categories, namely CBD, Urban, Rural Short and Rural Long. The following information has been used to determine the targets:

- The preferences of our customers based on feedback from the customer engagement program
- Historical performance of feeder categories
- Historical expenditure to maintain the reliability level
- Benchmarking our performance against other utilities

Customer Engagement Program

PWC has undertaken an extensive customer engagement program in 2022, with multiple sessions held with representatives from all three regulated network regions. The feedback from this engagement indicated that customers were reasonably happy with the current network reliability and not willing to accept deterioration in reliability performance. They also endorsed the idea of equity among customers and funding being targeted at poorly served customers. However the panel also indicated that customers want to avoid paying increased prices for reliability improvements.

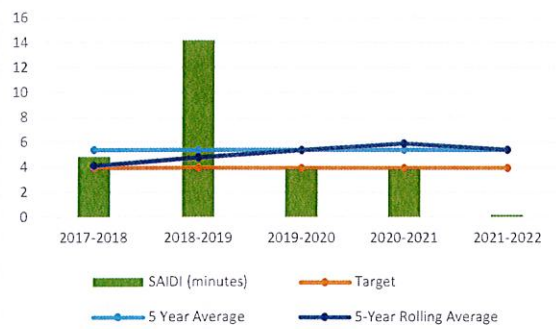
Therefore the key reliability outcomes of the customer engagement program are to:

1. Maintain network reliability performance at the current levels
2. Avoid increase in expenditure on reliability programs
3. Continue to target reliability improvements to poorly-served customers

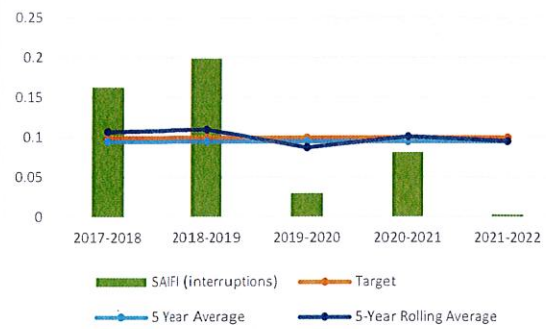
Historical Performance

The System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) performance of feeder categories over the last five years has been measured against the approved targets in place for the 2019-24 period.

Figure 1 shows CBD feeder category performance. While there were SAIDI and SAIFI target breaches in 2017-18 and 2018-19, these were due to human error and not from systemic issues that warranted additional investment. In all subsequent years, performance has returned to levels within set targets.



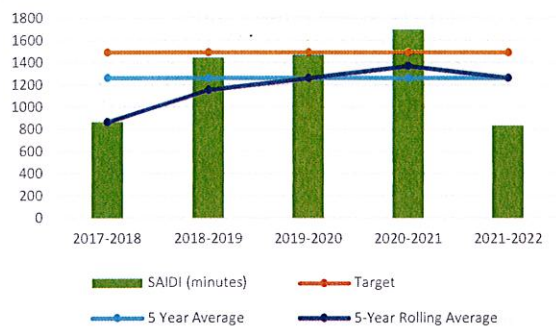
(a) Feeder Category SAIDI



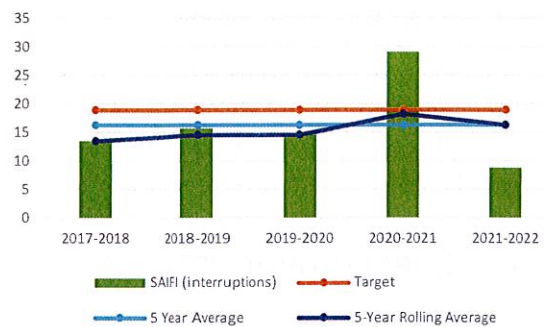
(b) Feeder Category SAIFI

Figure 1. Performance of CBD Feeders

The performance of Rural Long feeders against target level is illustrated in Figure 2. There has only been one breach, which occurred in 2020-21 and, was caused by significant animal activity on the Dundee Feeder.



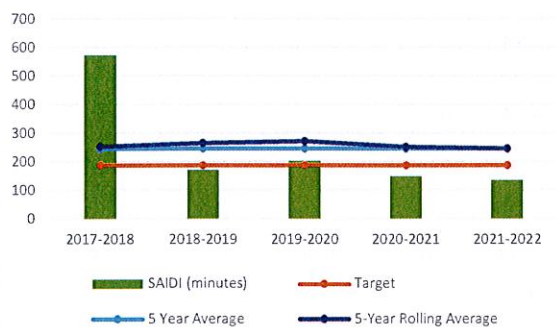
(a) Feeder Category SAIDI



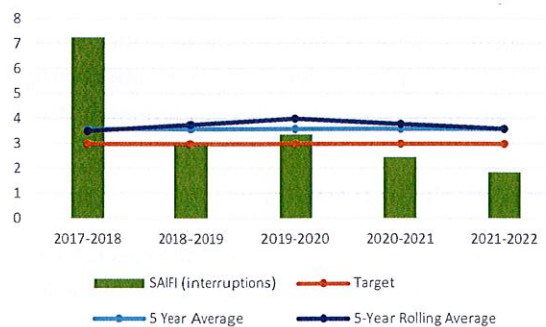
(b) Feeder Category SAIFI

Figure 2. Performance of Rural Long Feeders

The SAIDI and SAIFI performance of Rural Short feeders, as shown in Figure 3, have mostly been within target. There were two breaches in 2017-18 and 2019-20, mainly due to vegetation, weather conditions and asset failures. Since then the performance has remained consistently below the targets.



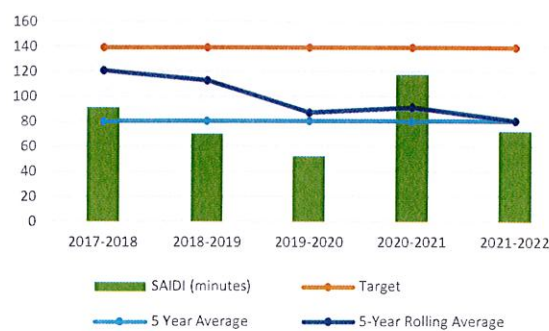
(a) Feeder Category SAIDI



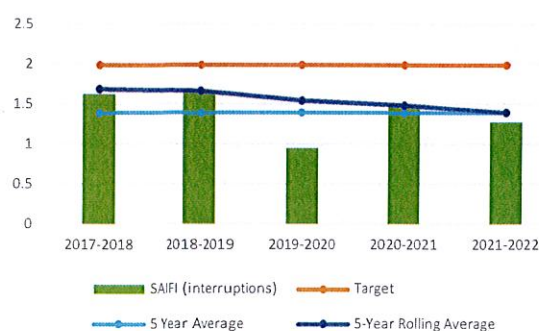
(b) Feeder Category SAIFI

Figure 3. Performance of Rural Short Feeders

Figure 4 shows the performance of Urban feeders. They have achieved both SAIDI and SAIFI performance outcomes well within the targets during the past five years. Additionally, the performance have improved over time as noted from the five year rolling average.



(a) Feeder Category SAIDI



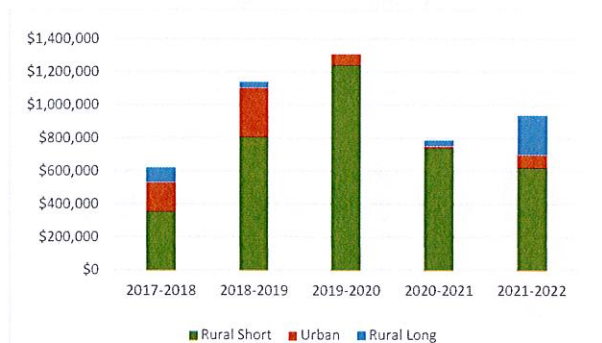
(b) Feeder Category SAIFI

Figure 4. Performance of Urban Feeders

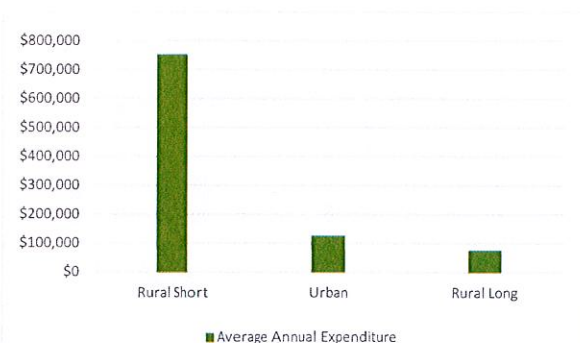
Cost of maintaining current levels of reliability

Significant capital investment has been undertaken in order to achieve the network performance observed during the past five years. PWC has a feeder improvement program which was approved as part of our 2019-24 submission to the Australian Energy Regulator (AER). The program funds targeted improvements to feeder reliability in order to meet the requirements of the Electricity Industry Performance Code, including maintaining performance within SAIDI and SAIFI targets and addressing poorly performing feeders.

Figure 5(a) shows the total capital expenditure by feeder category during each of the past five financial years. Similarly, Figure 5(b) shows the average annual expenditure by feeder category.



(a) Total expenditure by feeder category



(b) Feeder Category SAIFI

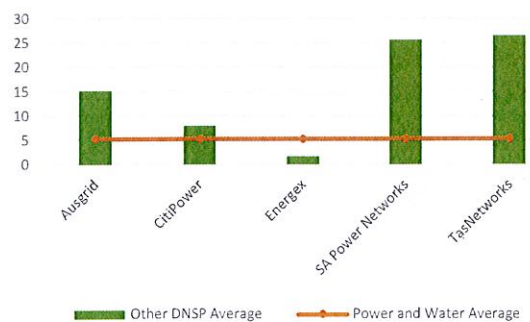
Figure 5. Expenditure on the feeder reliability improvement program

In the last five years, approximately \$960,000 has been invested per year on the feeder reliability improvement program. The majority of expenditure in all years has been allocated to the Rural Short feeder category, largely because Rural Short feeders supply the majority of customers supplied from overhead lines. However, significant investment has been made in Rural Long feeders following the breach of the target in 2020-21, with works including installation of animal protection and an additional recloser on the Dundee Feeder, and the installation of fuse savers, a recloser and animal protection on the Mataranka Feeder.

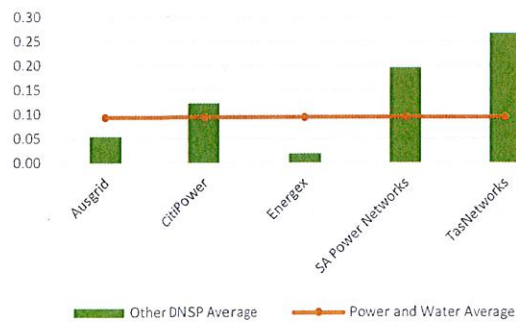
Benchmarking our performance against other utilities

Figure 7 shows the comparison of network performance between PWC and other utilities. While PWC performance lags other distributors in the Rural Long feeder category, in comparison to similar distributors (SA Power Networks, Powercor, Ergon, AusNet Services and TasNetworks)¹, PWC has performed reasonably well in the CBD, Rural Short and Urban categories.

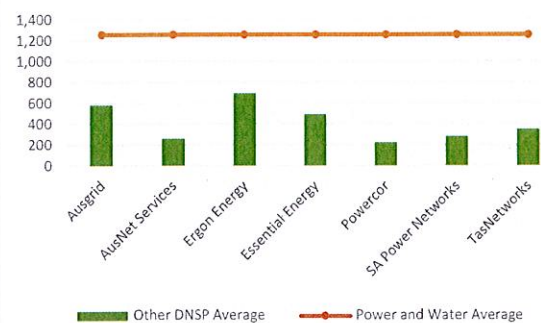
¹ Similar distributors are identified based on the customer density (Number of customers per kilometres of line)



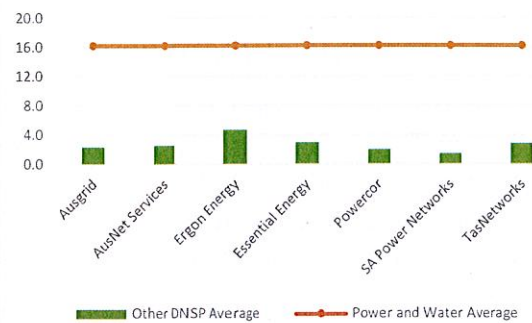
(a) SAIDI - CBD



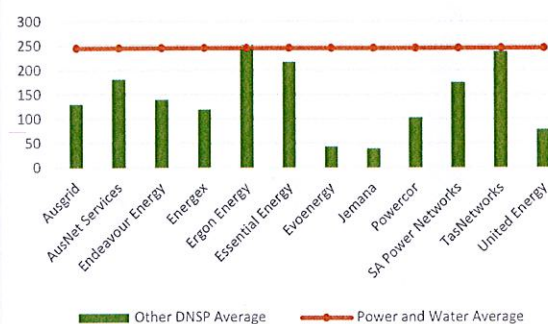
(b) SAIFI - CBD



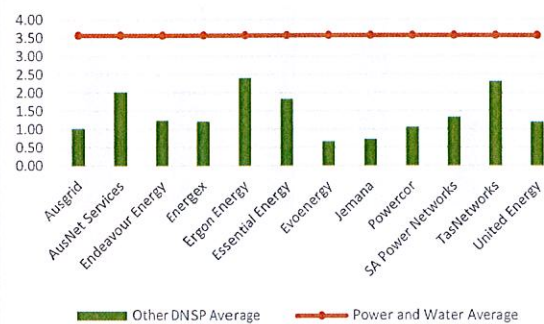
(c) SAIDI - Rural Long



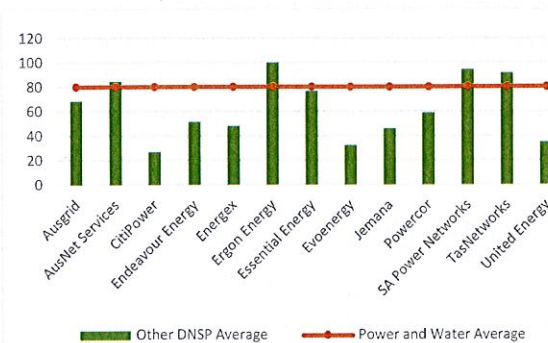
(d) SAIFI - Rural Long



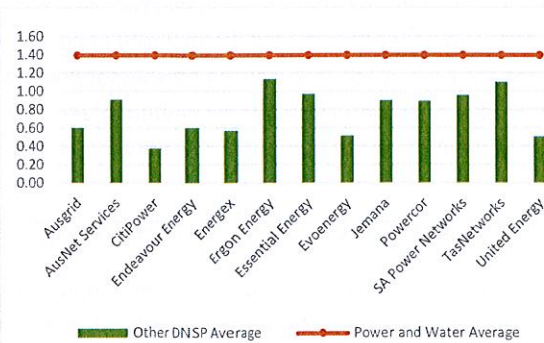
(a) SAIDI - Rural Short



(b) SAIFI - Rural Short



(a) SAIDI - Urban



(b) SAIFI - Urban

Figure 7. Benchmarking Power and Water feeder category SAIDI/SAIFI performance with other DNSPs

Proposed Targets

The proposed targets for the 2024-29 regulatory period are based on the average performance of the past five years. We consider this to be an appropriate method for forecasting on the basis that:

- This approach has been taken in previous submissions
- Customers are happy with the recent performance of the network and do not want increased investment to achieve improvements
- Historical performance has been reasonably consistent for the past five years with only 3 breaches of the SAIDI target and 4 of the SAIFI target. Historical performance is also in line with comparable distributors.
- Expenditure at a similar magnitude as the historical expenditure is expected to result in consistent performance going forward

The proposed targets are shown in the Table 1.

Table 1: Proposed network reliability standards to be applied to Power and Water for the 2024-29 regulatory period

Feeder Category	Index	Previous Target	5-Year Average	Proposed Target	Change	% Change
CBD	SAIDI	4	5.4	4	0	0%
	SAIFI	0.1	0.1	0.1	0	0%
Rural Long	SAIDI	1500	1265.1	1260	240 ↓	16%
	SAIFI	19	16.3	15	4 ↓	21%
Rural Short	SAIDI	190	247.0	190	0	0%
	SAIFI	3	3.6	3	0	0%
Urban	SAIDI	140	80.9	80	60 ↓	43%
	SAIFI	2	1.4	1.4	0.6 ↓	30%

CBD feeders

The targets for both SAIDI and SAIFI in the CBD category are proposed remain at their current levels for the 2024-29 period as they are still reflective of recent performance.

Rural Long feeders

The relatively poor reliability performance of this feeder category is due to its radial nature, longer response times and limited access during the wet season. Furthermore, with only three rural long feeders on the network, the normal volatility in performance in feeders due to weather and external factors is not smoothed out like on urban or rural short feeders. Also, the radial nature of networks also makes it expensive to build in redundancies to improve the reliability of feeders.

Although it is challenging to improve reliability in the Rural Long feeders, based on the recent and proposed capital investments, it is expected that both SAIDI and SAIFI performance of Rural Long Feeder category will trend within the average performance during the 2024-29 period. Therefore it is proposed to reduce the targets for SAIDI and SAIFI to the five year average.

Rural Short feeders

The five year average for Rural Short feeders is higher than the existing targets for SAIDI and SAIFI, largely due to an unusually poor performance in 2017-18. The performance in subsequent years has been in line with the existing targets, so it is proposed that the targets for SAIDI and SAIFI remain at their current levels for the 2024-29 period.

Urban feeders

It is proposed to reduce the targets for both SAIDI and SAIFI in the Urban feeder category to reflect the five year average performance. Normally such a significant reduction would require significant investment to remain compliant. However there are several targeted replacement programs in addition to the feeder improvement program, such as replacing aged HV cables in Northern Suburbs of Darwin and targeted replacement of poles in Alice Springs, which are expected to support achievement of the reduced target.