



SA Power Networks Regulatory Performance Report 2019-20

Key messages

- ▶ In 2019-20, SA Power Networks met its service standards: the eight reliability service standards as well as the customer service standards for telephone and written responsiveness.
- ▶ Although the duration and frequency of interruptions for the central business district (CBD) feeder category were above the reliability service targets, this was driven by non-systemic issues. The Commission expects SA Power Networks to demonstrate that best endeavours were used to maintain electricity distribution reliability service standards, where targets have not been achieved. The Commission will continue to evaluate trends in CBD performance, over time, to verify that service standards are met.
- ▶ 13,756 Guaranteed Service Level (GSL) payments were made, totalling \$2.55 million, which is lower than the long-term historical average. Over eighty-five percent of GSL payments were associated with the extended duration of interruptions.

The Essential Services Commission (**Commission**) regulates the customer service and reliability aspects of SA Power Networks' electricity distribution operations. SA Power Networks is the monopoly service provider of electricity distribution network services to the majority of South Australian customers.

The Commission does not regulate revenue requirements for SA Power Networks. SA Power Networks is subject to economic regulation in respect of the revenue it is permitted to earn from South Australian consumers. The Australian Energy Regulator (**AER**) is responsible for administering that regulatory regime under the National Electricity Rules. The AER takes into account the Commission's service standards when making regulatory (revenue) determinations for SA Power Networks under the National Electricity Rules.

The Commission establishes certain state-based customer service and reliability standards for SA Power Networks. Those standards are prescribed in the Commission's Electricity Distribution Code (**Code**). As a condition of its electricity distribution licence, issued by the Commission, SA Power Networks is required to comply with the service standards in the Code. The service standards and associated targets that apply to SA Power Networks are set out in Schedule 1 for reference.

The Commission monitors and publicly reports on SA Power Networks' performance against its service standards each year. This report covers the performance of SA Power Networks for the 2019-20 financial year.

How SA Power Networks responded to its customers

The Code places obligations on SA Power Networks relating to responsiveness to customer enquiries.

The two customer service standards are:

- ▶ telephone responsiveness, and
- ▶ written enquiries responsiveness.

In 2019-20, SA Power Networks received 352,430 telephone calls and 2,269 written enquiries compared to 394,810 telephone calls and 3,881 written enquiries received in 2018-19.

SA Power Networks is required to answer 85 percent of telephone calls within 30 seconds and respond to 95 percent of written enquiries within five business days.

SA Power Networks met both customer service standards (refer Table 1) in 2019-20.

Table 1: SA Power Networks' 2019-20 customer service standards performance

Standard	Target	2019-20 performance
Telephone calls answered within 30 seconds	85%	90%
Written enquiries answered within five business days	95%	96%

Reliability of SA Power Networks' electricity distribution network services

The Code sets out obligations relating to the quality, safety and reliability of the electricity distribution network (including the requirement for SA Power Networks to minimise supply interruptions and provide information to customers on planned interruptions).

The Commission has set eight reliability service standards based on the following four feeder categories of SA Power Networks' electricity distribution network.

- ▶ **Central Business District (CBD) feeders** – those supplying predominantly commercial, high-rise buildings, supplied by a predominantly underground distribution network containing significant interconnection and redundancy when compared to urban areas.
- ▶ **Urban feeders** – those with actual maximum demand greater than 0.3 megavolt amps/km of total feeder route length, over the reporting period (but which are not CBD feeders).
- ▶ **Rural short feeders** – those with a total route length less than 200 km (but which are not CBD or urban feeders). Rural short feeders may include feeders in urban areas with low load densities.
- ▶ **Rural long feeders** – those with a total route length greater than 200 km (but which are not CBD or urban feeders).

The electricity distribution network reliability service standards have been set for each of the four feeder categories using the following measures:

- ▶ **Unplanned System Average Interruption Duration Index (USAIDI)** – measuring the average annual duration (in minutes) of unplanned supply interruptions per customer. This standard is referred to as 'duration of interruptions (USAIDI)' in this report, and
- ▶ **Unplanned System Average Interruption Frequency Index (USAIFI)** – measuring the average annual number of unplanned supply interruptions per customer. This standard is referred to as 'frequency of interruptions (USAIFI)' in this report.

SA Power Networks' distribution network services were generally reliable

In 2019-20, SA Power Networks met six of the eight reliability service targets (refer Tables 2 and 3).

Under the regime, which requires SA Power Networks to use its best endeavours to meet specified targets, a failure to meet a target does not necessarily mean that the relevant standard is not met. SA Power Networks may be able to demonstrate that it has genuinely used its best endeavours in its efforts to meet the target, even though it has not ultimately been able to do so. If SA Power Network can demonstrate best endeavours, the Commission may determine that the relevant service standard has been met even if the target has not, based on its assessment of the diligence and robustness of SA Power Networks' efforts (systems, practices, processes and controls).

The Commission excludes the effects of abnormal weather events when assessing the reliability performance of SA Power Networks. Any day that is a major event day¹ (MED) is excluded from the performance assessment. All information and figures in this report are normalised in this way unless otherwise indicated. The effects of other severe weather events (that do not meet the MED classification threshold) are included in the performance assessment. Of note, the impacts of severe weather event are taken into account as part of any best endeavours assessment.

Table 2: SA Power Networks' 2019-20 normalised performance against reliability service standards (as measured by duration of interruptions (USAIDI))

Feeder category	Duration of interruptions (minutes/customer/year)	
	Target	2019-20 result
CBD ²	15	33
Urban	120	85
Rural short	220	145
Rural long	300	260

Table 3: SA Power Networks' 2019-20 normalised performance against reliability service standards (as measured by frequency of interruptions (USAIFI))

Feeder category	Frequency of interruptions (interruptions/customer/ year)	
	Target	2019-20 result
CBD	0.15	0.19
Urban	1.30	0.78
Rural short	1.85	1.17
Rural long	1.95	1.32

¹ A major event day is defined in the Institute of Electrical and Electronics Engineers (IEEE) standard 1366-2003, IEEE Guide for Electric Power Distribution Reliability Indices. The IEEE standard excludes natural events which are more than 2.5 standard deviations greater than the mean of the log normal distribution of five regulatory years' SAIDI data.

² Adelaide Central Business District

SA Power Networks' performance - CBD feeder category

SA Power Networks did not meet the service standard targets for duration and frequency of interruptions for the CBD feeder category. The normalised duration of interruptions (USAIDI) performance target for this feeder category is 15 minutes per customer per year and SA Power Networks reported 33 minutes per customer per year. The normalised frequency of interruptions (USAIFI) performance target for this feeder category is 0.15 interruptions per customer per year and SA Power Networks reported 0.19 interruptions per customer per year.

The decrease in CBD performance in 2019-20 can be attributed to three interruptions that contributed 23.1 minutes to USAIDI and 0.1 to USAIFI, discussed further below:

- ▶ On 15 October 2019, two supply interruptions occurred on the same feeder due to the failure of a modern type of cable termination. The two interruptions contributed 18.7 minutes to USAIDI and 0.07 to USAIFI. SA Power Networks investigated the interruptions and determined that both were due to faulty terminations in a switching cubicle. SA Power Networks advised that a failure of this nature is unusual as there is no systemic history of these types of cable terminations failing.
- ▶ On 1 November 2019, a supply interruption occurred that related to a cable fault on a feeder that had not experienced a cable fault in the last 10 years. This interruption contributed 4.4 minutes to USAIDI and 0.03 to USAIFI.

At the time of the interruptions, SA Power Networks informed the Commission of the actions taken to restore supply and the investigations undertaken to determine the cause of the interruptions. SA Power Networks is also trialling ultrasonic devices to determine if they provide a reliable indication of future failures of cable joints and terminations, with the aim to replace components prior to failure.

The Commission has assessed SA Power Networks' CBD feeder category performance and does not consider that these non-systemic faults indicate an overall declining trend in the performance of this feeder category. For the remainder of the year, performance in the CBD feeder category returned to that of previous years, with all normalised interruptions since then contributing a total of 4.4 minutes to USAIDI and a total of 0.05 to USAIFI.

Based on the information available, the Commission is of the view that:

- ▶ the interruptions were not systemic
- ▶ SA Power Network adopts a 'fix on fail' approach for the asset management of underground cables, and
- ▶ the response time by SA Power Network to individual outages were appropriate.

The Commission assessed that SA Power Networks demonstrated it used best endeavours to achieve the normalised duration of interruptions (USAIDI) and the normalised frequency of interruptions (USAIFI) targets and, that all eight reliability service standards were met for 2019-20. The Commission expects SA Power Networks to demonstrate that best endeavours were used to maintain electricity distribution reliability service standards, where targets have not been achieved. The Commission will continue to evaluate trends in CBD performance, over time, to verify that service standards are met.

Urban and rural feeder performance (normalised) trends are positive

Over the past 10 years, with the exception of the CBD feeder category, SA Power Networks' reliability performance has shown an overall (positive) downward trend (refer Figures 2 to 4).

Figure 1: CBD feeder category normalised USAIDI and USAIFI performance

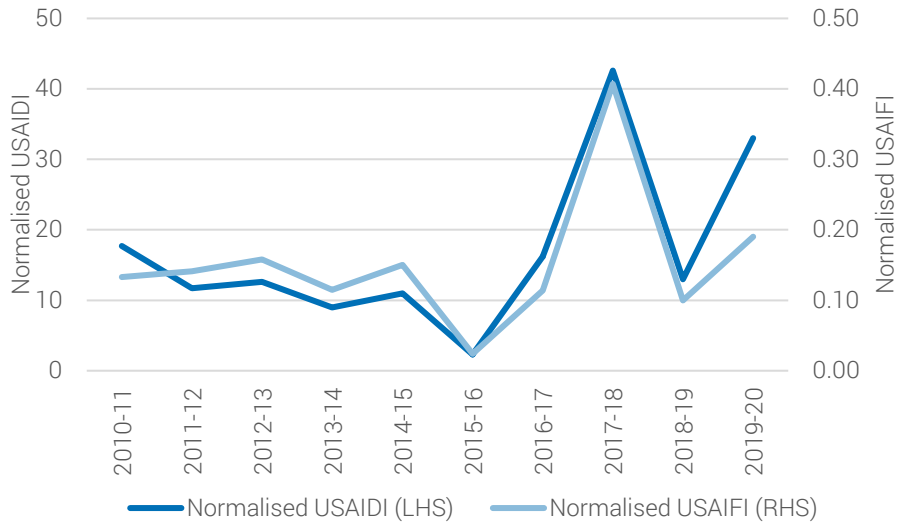


Figure 2: Urban feeder category normalised USAIDI and USAIFI performance

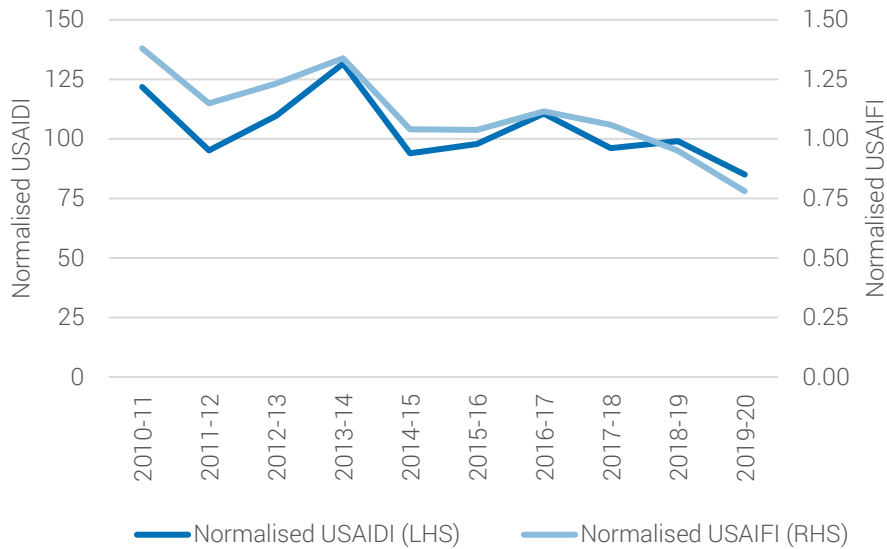


Figure 3: Rural short feeder category normalised USAIDI and USAIFI performance

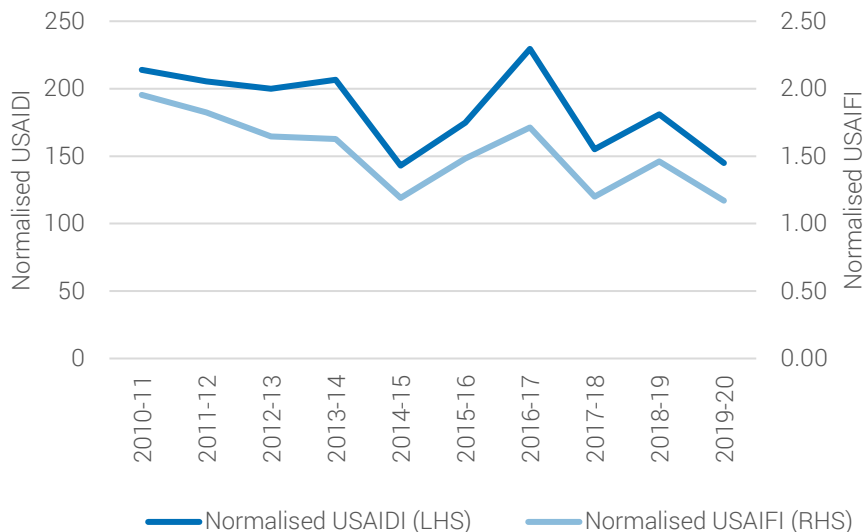
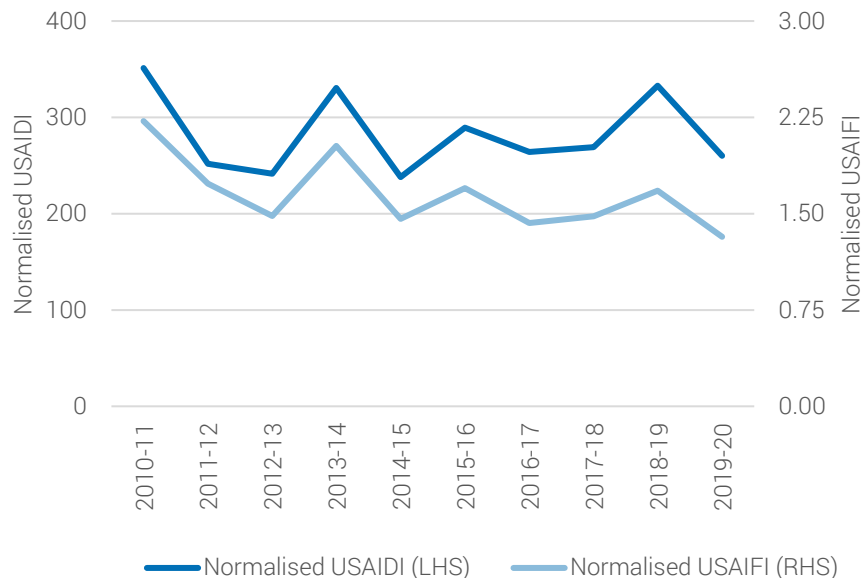


Figure 4: Rural long feeder category normalised USAIDI and USAIFI performance



Causes of interruptions

Table 4 summarises the causes of interruptions to customers in 2019-20. The impact of MEDs is excluded and therefore the table shows the underlying causes of interruptions.

Consistent with the average over the earlier five years, prior to 2019-20, planned interruptions account for the largest proportion (37 percent). The proportion of interruptions caused by weather is lower than the average for the earlier five years and the proportion of interruptions caused by equipment failure is higher than that for the earlier five years.

Table 4: Interruption causes (excluding MEDs) in 2019-20

Interruption cause	Proportion of USAIDI 2019-20	Average for earlier five years (prior to 2019-20)
Weather	14%	20%
Equipment failure	28%	21%
Planned	37%	36%
Other ³ (unplanned)	21%	23%

The number of low reliability distribution feeders decreased slightly

SA Power Networks reported a slight decrease in the number of feeders determined to be low reliability distribution feeders in 2019-20. The Commission reviews the number of Low Reliability Distribution Feeders⁴ (LRDF) and customers affected in any given year. The review process focuses on individual feeder performance (including during MEDs) in poorly served parts of the network over two or more consecutive years, to reduce the impact of individual events in any one year (for example, storms or abnormal incidents).

In 2019-20, there were 74 feeders that qualified as LRDFs affecting 11,670 customers (approximately 1.3 percent of the customer base), compared to 87 feeders affecting 19,798 customers in 2018-19 (Table 5). SA Power Networks reported that improvements implemented as part of the Reliability Management Plan contributed to the decrease in the number of LRDFs.

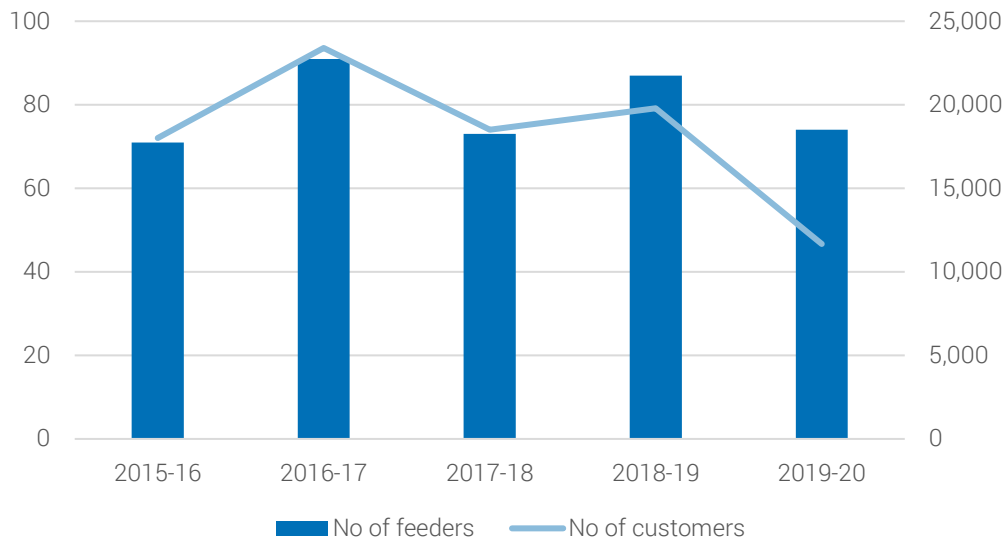
Table 5: Low reliability distribution feeders in 2018-19 and 2019-20 (by feeder category)

Feeder category	2018-19		2019-20	
	No. of feeders	No. of customers	No. of feeders	No. of customers
CBD	1	16	2	56
Urban	12	11,449	3	4,450
Rural Short	11	1,983	13	1,939
Rural Long	63	6,351	56	5,225
State-wide	87	19,798	74	11,670

³ Includes third party (for example, vegetation and animal interference) and unplanned operational causes.

⁴ A low reliability distribution feeder within a particular feeder category is defined as a feeder that has exceeded 2.0 times the normalised USAIDI Service Standard within that feeder category for two consecutive financial years.

Figure 5: Low reliability distribution feeders and customers supplied



Regional performance (normalised) for most regions is consistent with earlier years

To assist customers to better understand the reliability of SA Power Networks' network in their area, the Commission also monitors SA Power Networks' reliability performance across South Australia split into the following geographical regions:

Adelaide Business Area⁵

The Adelaide Business Area covers Adelaide CBD bordered by the parklands. It accounts for 0.6 percent of SA Power Networks' customers and comprises 0.3 percent of the distribution system by length. The Adelaide Business Area distribution network is about 97 percent underground.

Major Metropolitan Areas

The Major Metropolitan Areas region supplies 70 percent of SA Power Networks' customers and comprises 26 percent of the distribution system by length, including most of the Adelaide region and other major centres outside of the Adelaide region. Approximately 44 percent of the distribution network in this region is underground.

Central region

The Central region covers the Barossa, Mid-North, Riverland and Murraylands. The region accounts for 12 percent of SA Power Networks' customers but comprises 30.3 percent of the distribution system by length. The distribution network in this region is nine percent underground.

Eastern Hills/Fleurieu Peninsula

The Eastern Hills/Fleurieu Peninsula supplies eight percent of SA Power Networks' customers and comprises 10.6 percent of the distribution system by length. The distribution network in this region is 21 percent underground.

⁵ The Adelaide Business Area is reported on by SA Power Networks on the same basis as the CBD feeder category (see Figure 1 above).

Upper North/Eyre Peninsula

The Upper North/Eyre Peninsula region accounts for five percent of SA Power Networks' customers but comprises 19.8 percent of the distribution system by length. The distribution network in this region is only four percent underground.

South East

The South East region supplies four percent of SA Power Networks' customers but comprises 11.4 percent of the distribution system by length. The distribution network in this region is only seven percent underground.

Kangaroo Island

The Kangaroo Island network supplies 0.5 percent of SA Power Networks' customers and comprises 1.7 percent of the distribution system by length. The distribution network in this region is only seven percent underground.

Table 6 shows the reliability performance in 2019-20 for the seven geographic regions of the State covered by the reporting regime (noting that standards are not set for regions).

Table 6: Normalised USAIDI and USAIFI in 2019-20 (by geographical region)

Geographical region	USAIDI	USAIFI
Adelaide Business Area	33	0.19
Major Metropolitan Area	86	0.80
Central ⁶	151	0.98
South East	301	2.03
Eastern Hills/Fleurieu Peninsula	182	1.16
Upper North/Eyre Peninsula	197	1.03
Kangaroo Island	1299	3.28

Figures 6 to 11 illustrate the duration of interruptions (USAIDI) performance over time for the geographical regions other than the Adelaide Business Area. The Adelaide Business Area is reported on by SA Power Networks on the same basis as the CBD feeder category (see Figure 1 above).

Across the regions normalised duration reliability performance was similar to that of the earlier years, with the exception of Kangaroo Island where normalised duration reliability declined significantly in 2019-20 compared to earlier years (Figure 10). In 2019-20, Kangaroo Island was severely impacted by interruptions associated with the January bushfires, which contributed a total of 2,635 minutes to USAIDI and 804 minutes to normalised USAIDI. In addition, there were three other major interruptions on Kangaroo Island that related to non-systemic equipment failure. The reliability performance of Kangaroo Island for the last five months of 2019-20 returned to that of earlier years.

⁶ Barossa, Mid-North, Riverland and Murraylands

Figure 6: Major Metropolitan Area duration of interruptions performance (minutes)

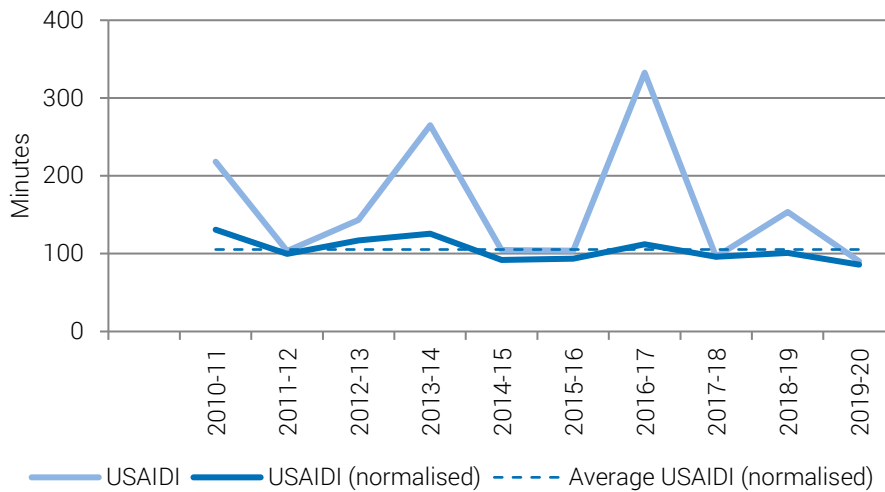


Figure 7: Central region duration of interruptions performance (minutes)

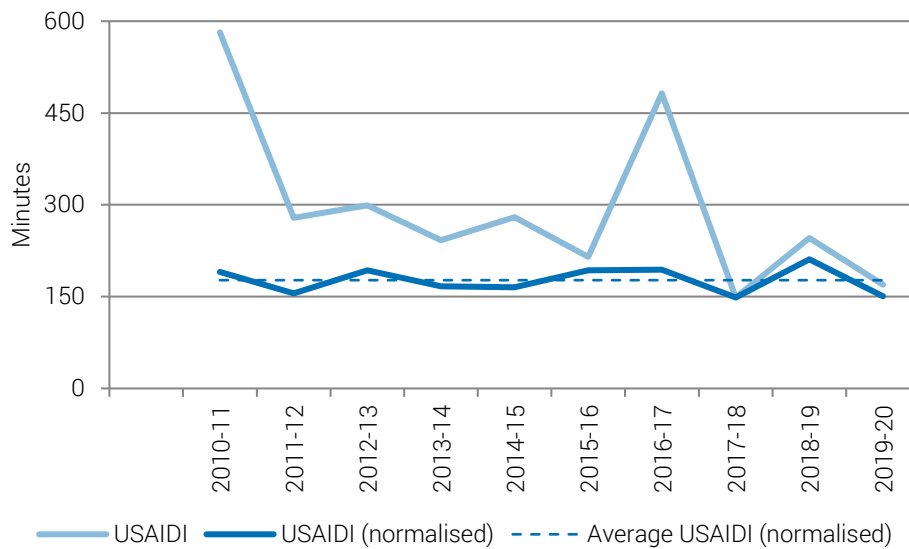


Figure 8: South East duration of interruptions performance (minutes)

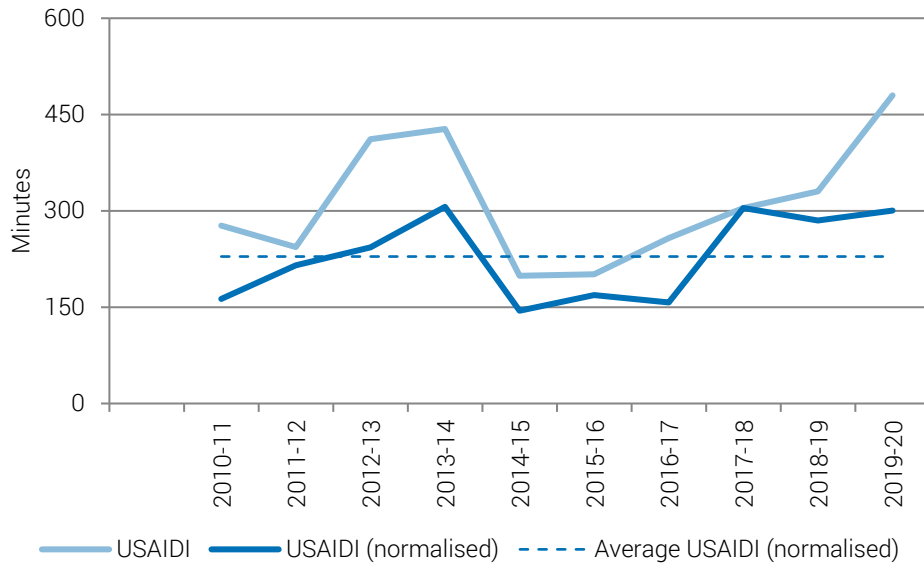


Figure 9: Eastern Hills/Fleurieu Peninsula duration of interruptions performance (minutes)

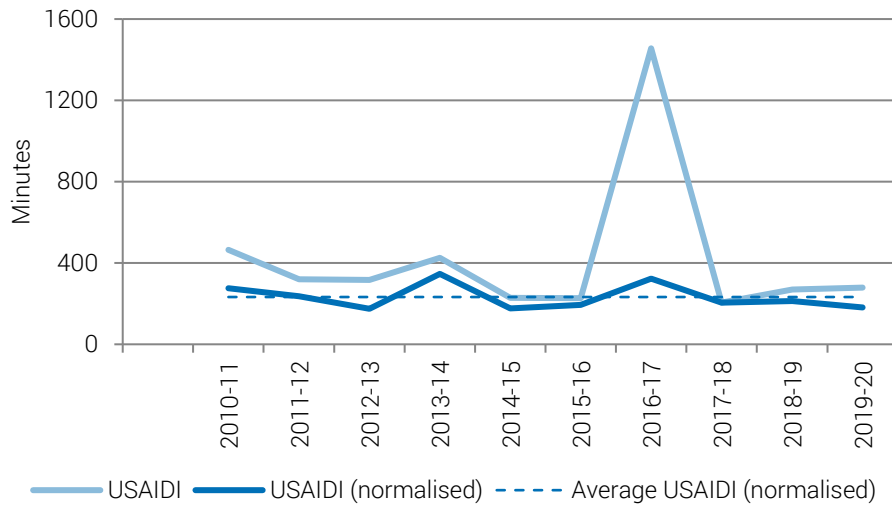


Figure 10: Upper North/Eyre Peninsula duration of interruptions performance (minutes)

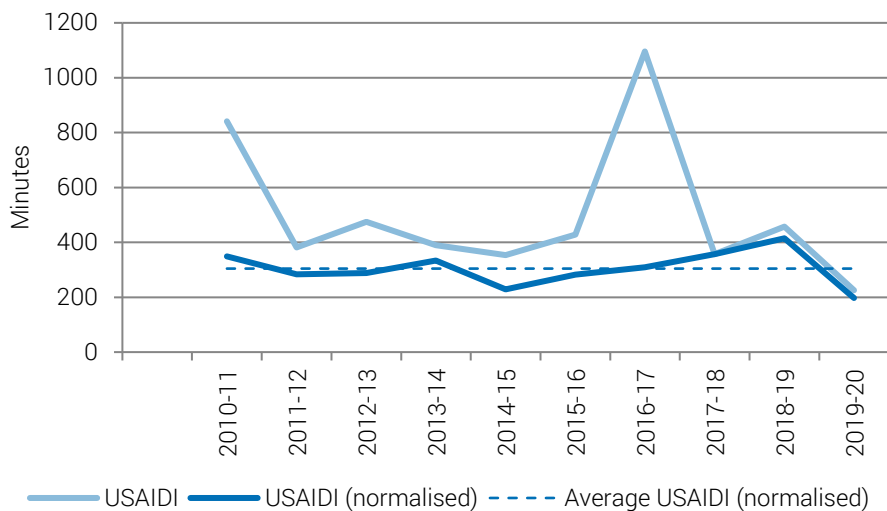
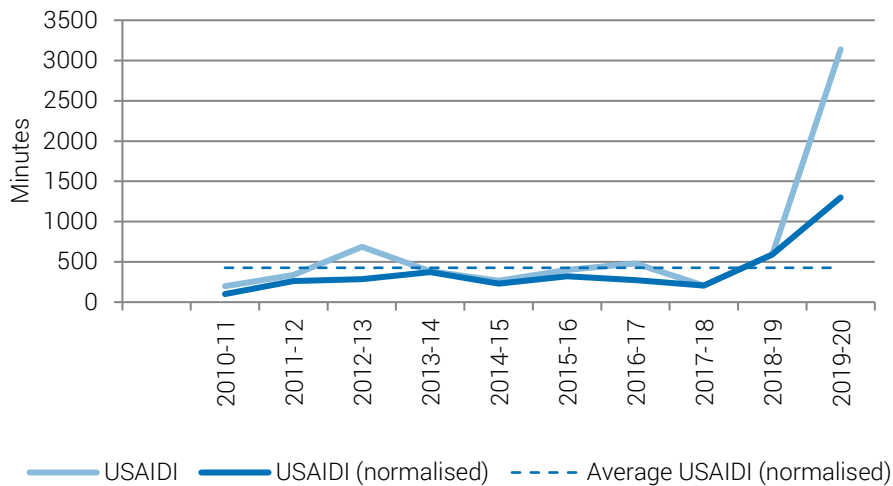


Figure 11: Kangaroo Island duration of interruptions performance (minutes)



SA Power Networks GSL payments

Under the Code, SA Power Networks is required to make Guaranteed Service Level (GSL) payments⁷ to customers who have received service that is worse than a pre-determined threshold.

GSL payments are made in recognition of the inconvenience caused to customers, rather than attempting to reflect the full (and different) costs incurred by individual customers in response to a long interruption.

SA Power Networks administers a separate customer compensation scheme for damage or losses resulting from an incident associated with its electricity distribution network, which relate to loss due to negligence or bad faith.

The categories of GSL payments are:

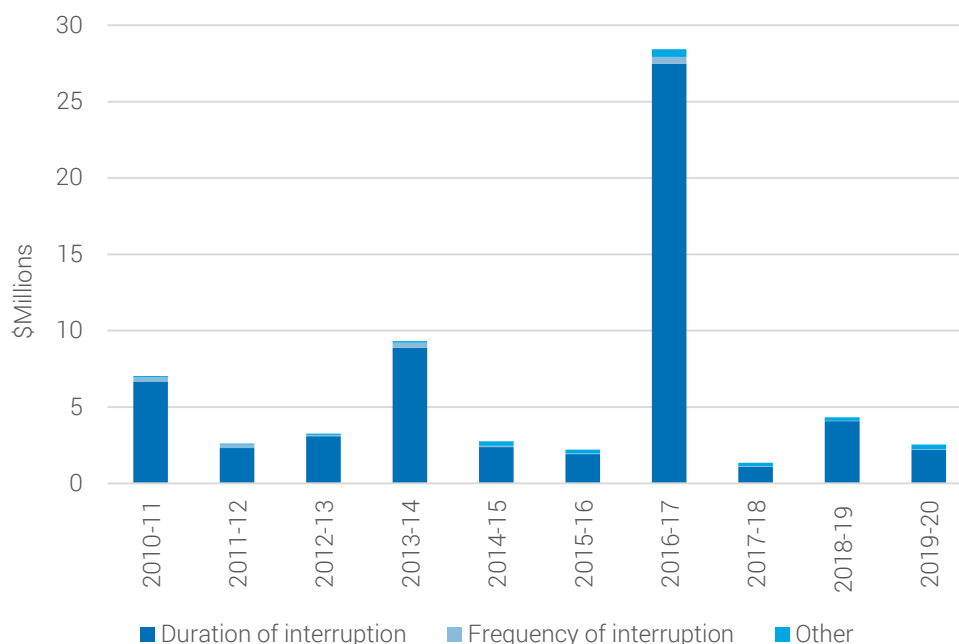
- ▶ timeliness of appointments
- ▶ promptness of new connections
- ▶ timeliness of street light repairs
- ▶ duration of supply interruption, and
- ▶ frequency of supply interruption.

In 2019-20, there were 13,756 GSL payments made totalling \$2.55 million, compared to 28,474 GSL payments totalling \$4.32 million in 2018-19. The GSL payments decreased in 2019-20 and are below the average total annual payments for the last five years (\$7.81 million).

Consistent with earlier years, the majority of GSL payments (over eighty-five percent in 2019-20) were made for duration of interruptions (Figure 12).

⁷ Further information on the GSL scheme can be found here: <https://www.escosa.sa.gov.au/ArticleDocuments/1188/20190107-Electricity-SAPN-ReliabilityStandards-GSL-Scheme-FactSheet.pdf.aspx?Embed=Y>

Figure 12: Guaranteed service level payments by category



Street light repair performance is in-line with earlier annual results in major metropolitan and regional areas

SA Power Networks is obliged to use its best endeavours to repair faulty street lights for which it is responsible. The timeframe for the repair is within five business days in major metropolitan and major regional centres and within 10 business days in regional areas. The proportion of street lights SA Power Networks repaired within these timeframes is in line with earlier annual performance, with 93 percent of street light faults in the major metropolitan and major regional centres being repaired within five working days. In regional areas, 99 percent of street light faults were repaired within 10 working days.

In 2019-20, SA Power Networks paid \$256,625 in GSL payments where it did not complete repairs within the required time. This is higher than the GSL payment in 2018-19 (\$152,385) but still within the range of payments (between \$152,000 and \$450,000) made over the earlier five-year period.

SA Power Networks' compliance with its regulatory obligations

The key objectives of the Commission's compliance framework are:

- ▶ to enable regulated entities to have a focus on high performance and provide services to consumers at the lowest sustainable price
- ▶ to enable transparent communication with the community and build trust and accountability, and
- ▶ to facilitate and enable regulated entities to maintain a strong compliance focus so that customers (and the community) can trust those entities to provide appropriate services to required levels.

The Commission uses a broad range of sources and tools to elicit information, verify whether entities are complying with their obligations and provide feedback to entities to inform future compliance and enforcement work.

The Commission monitors and reports on SA Power Networks' compliance with the requirements set out in the Code and takes enforcement action in instances of non-compliance, if necessary. During 2019-20, the Commission did not identify any material non-compliances relating to SA Power Networks' performance.

Further information

Further information on SA Power Networks' customer service-related regulatory obligations and service standards can be found here <http://bit.ly/SAPN-RegulatoryFramework-InfoSheet>.

The complete time series performance data for SA Power Networks can be found here: <https://www.escosa.sa.gov.au/industry/electricity/regulatory-reporting/regulatory-performance-reports>.

Information on the reliability standards framework that will apply to SA Power Networks from 1 July 2020 to 30 June 2025 can be found here: <https://www.escosa.sa.gov.au/projects-and-publications/projects/electricity/sa-power-networks-2020-reliability-standards-review>.

Schedule 1: Service standards applicable to SA Power Networks (from 1 July 2015 to 30 June 2020)

Service Standard	Category	#	Target
Telephone calls answered within 30 seconds	Customer Service	1	85%
Written enquiries answered within five business days	Customer Service	2	95%
Duration of interruptions (USAIDI) (minutes/customer/year)	Reliability (CBD)	3	15
	Reliability (Urban)	4	120
	Reliability (Rural short)	5	220
	Reliability (Rural long)	6	300
Frequency of interruptions (USAIFI) (number/customer/year)	Reliability (CBD)	7	0.15
	Reliability (Urban)	8	1.30
	Reliability (Rural short)	9	1.85
	Reliability (Rural long)	10	1.95

The Essential Services Commission is an independent statutory authority with functions in a range of essential services including water, sewerage, electricity, gas, rail and maritime services, and also has a general advisory function on economic matters. For more information, visit www.escosa.sa.gov.au.

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