



Energy Businesses Regulatory Performance Report 2014-15

Network, LPG and off-grid energy businesses

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The Essential Services Commission of South Australia 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, please visit <u>www.escosa.sa.gov.au</u>.

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Glossary of terms

Term	Description
AEMA	Australian Energy Market Agreement
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AGN	Australian Gas Networks
Commission	The Essential Services Commission of South Australia
Electricity Act	Electricity Act 1996
ESC Act	Essential Services Commission Act 2002
Gas Act	Gas Act 1997
GSL	Guaranteed Service Level
KPa	Kilopascal (1,000 newtons per square metre) – a measure of pressure
LPG	Liquefied Petroleum Gas
LRDF	Low Reliability Distribution Feeders
NEM	National Electricity Market
NER	National Electricity Rules
SMOS	System Minutes Off Supply
SRMTMP	Safety, Reliability, Maintenance and Technical Management Plan
TJ	Terajoules (joules x 10 ¹²)
UAFG	Unaccounted for Gas

Best endeavours
Service standard met.
Service standard not met.

Executive summary

The Essential Services Commission (**Commission**) of South Australia reports annually on the performance of regulated energy businesses in delivering essential services to South Australian residential and business consumers. This is the Commission's 16th annual report on the performance of regulated energy businesses against customer service and reliability service standards and the consumer protection framework.

The Commission has functions under the Electricity Act 1996 (**Electricity Act**) and the Gas Act 1997 (**Gas Act**) for licensing and monitoring the performance of businesses in the electricity and gas supply industries. Businesses that engage in generation of electricity, operation of a transmission or distribution network, power system control or retailing of energy (off-grid energy retailers only)¹ fall under the Commission's licensing and monitoring regime.

The Commission's role encompasses the regulation of service reliability standards for SA Power Networks (electricity distribution), ElectraNet (electricity transmission) and Australian Gas Networks (gas distribution). These service standards are set out in Industry Codes administered by the Commission. The Australian Energy Regulator (**AER**), with reference to the Commission's service reliability standards, sets the efficient level of expenditure for network operators to provide the required distribution or transmission services at the specified standards.

The licensing and monitoring regime also extends to regional areas of South Australia. Communities that are not connected to the national electricity grid are provided with electricity by off-grid generators, distributors and retailers. Similarly, some communities not connected to Australian Gas Networks' natural gas distribution network, are provided with a reticulated gas service by distributors and retailers of Liquefied Petroleum Gas (LPG). Distribution and retail licences issued by the Commission authorise these activities and set out conditions for operating in the industry.

The 2014-15 Energy Businesses Regulatory Performance Report covers the three energy network businesses, as well as off-grid and LPG distributors and retailers. An accompanying fact sheet, summarising key aspects of this report, and time series data for SA Power Networks, ElectraNet and Australian Gas Networks is available on the Commission's website.

The Commission's key observations in 2014-15 are set out below.

SA Power Networks

- Met all customer responsiveness service standards.
- Met network reliability service standards for all regions.
- Statewide distribution network reliability performance improved compared to 2013-14, largely as a result of the lower impact of severe weather on customer supply (which was the lowest since 2011-12).
- Customers experienced the lowest average duration of supply interruptions (152 minutes per customer) since 2007-08.

¹ The AER is now responsible for customer protection and performance monitoring in the national electricity and gas retail markets, i.e. on-grid energy retailers.

ElectraNet

- Transmission outages contributed only one per cent to the duration of outages experienced by customers.
- The number of transmission supply interruptions (and duration of these interruptions) were low compared to the historical average.

Australian Gas Networks

- The amount of gas lost from the gas distribution network reduced in 2014-15 (to approximately four per cent of gas entering the distribution system), continuing the downward trend of the past five years.
- Nearly 10,000 customers in Port Pirie and Whyalla were without gas supply for up to eight days in April 2015 after a rupture of Epic Energy's transmission pipeline, which Australian Gas Networks depends on to distribute gas supplies to the networks of both regional centres.

Off-grid and LPG retailers and distributors

 Approximately 6,000 customers receive either electricity or LPG through off-grid distribution networks.

These businesses are complying with their customer service and network reliability obligations, as set out in their licences.

1 Introduction

The Commission is a statutory authority established as an independent economic regulator and advisory body under the Essential Services Commission Act 2002 (ESC Act).

The Commission has economic regulatory responsibility in the water and sewerage, electricity, gas, maritime and rail industries, conducts formal public inquiries and provides advice to Government on economic and regulatory matters. The ESC Act, together with various industry Acts, provide the Commission with those regulatory and advisory powers and functions.

Under the ESC Act the Commission has the primary objective of:

"...protection of the long term interests of South Australian consumers with respect to the price, quality and reliability of essential services".

The ESC Act, the Electricity Act and the Gas Act (and the regulations under those Acts) establish the Commission's regulatory powers and functions in relation to energy businesses.

The Commission's role includes the licensing of energy businesses (generation, transmission, distribution, power system control and off-grid suppliers), making industry codes (including setting service standards), enforcing compliance with licensees' regulatory obligations and performance monitoring and reporting.

1.1 Purpose

The Commission publishes annual regulatory performance reports for licensed energy businesses operating in South Australia. The provision of information to the general public on the performance of regulated businesses promotes the Commission's primary objective by ensuring that those businesses are accountable for their performance.

This 2014-15 regulatory performance report covers the following energy businesses:

- SA Power Networks (electricity distribution)
- ElectraNet (electricity transmission)
- Australian Gas Networks (gas distribution)
- Off-grid electricity retailers and distributors
- ▶ LPG retailers and distributors.

1.2 Regulation of energy businesses

The Commission is responsible, under the Electricity Act and the Gas Act, for licensing and monitoring businesses in the electricity and gas supply industries. Businesses that engage in generation of electricity, operation of a transmission or distribution network, power system control or retailing of energy (off-grid energy retailers only) fall under the Commission's licensing and performance monitoring regime.

Table 1 summarises the Commission's functions under the Electricity and Gas Acts.

Legislation	Regulatory functions
	Electricity generation, transmission, distribution and off-grid suppliers:licensing
	network service/reliability standard setting
	performance monitoring and reporting.
Electricity Act 1996	Electricity retail operations:
	 determination of the retailer solar photovoltaic Feed-in Tariff
	 preparation and publication of Ministerial Energy Retail Pricing reports
	 Retailer Energy Efficiency Scheme administration.
	Gas retail operations:
	 preparation and publication of Ministerial Energy Retail Pricing reports
Gas Act 1997	 Retailer Energy Efficiency Scheme administration.
	Licensing of retail and distribution LPG gas operations.
	Licensing of natural gas network operations, standard setting, performance monitoring and reporting.

Table 1: Commission's regulatory functions in the electricity and gas industries

1.2.1 Energy network businesses

The Commission's role encompasses the regulation of reliability service standards for SA Power Networks (electricity distribution), ElectraNet (electricity transmission) and Australian Gas Networks (gas distribution), in accordance with the Australian Energy Market Agreement (AEMA). The AEMA provides for State and Territory Governments to have responsibility for developing service reliability standards for those network businesses. These service standards are set out in Industry Codes administered by the Commission. The AER, with reference to the Commission's customer service and reliability service standards, sets the efficient revenue requirement for network operators to provide the required distribution or transmission services at the specified standards.

The Commission monitors network businesses' performance against those service reliability standards and other key metrics that impact on services to South Australian customers.

1.2.2 Off-grid and LPG networks businesses

The licensing and monitoring regime also extends to regional areas of South Australia. Communities that are not connected to the national electricity grid are provided with electricity by off-grid generators, distributors and retailers. Similarly, some communities not connected to Australian Gas Networks' gas distribution network, are provided with a reticulated gas service by distributors and retailers of LPG. Distribution and retail licences issued by the Commission authorise these activities and set out conditions for operating in the industry.

The Commission monitors certain customer service and network reliability metrics for these off-grid and LPG distributors and retailers to ensure customers are receiving an appropriate level of service.

2 Electricity distribution

2.1 South Australian electricity distribution network

SA Power Networks operates the major South Australian electricity distribution network which connects each of its customers to the national electricity grid.

The SA Power Networks distribution network covers an area of about 178,200 square km, along a coastline of over 5,000 km. The network extends to over 85,000 km of which approximately 18 per cent is underground. SA Power Networks serves over 850,000 customers. Approximately 70 per cent of customers reside in the Greater Metropolitan Area of Adelaide, but 70 per cent of the network infrastructure is required to deliver energy to the remaining 30 per cent of customers. Compared with other Australian jurisdictions, the average customer density across South Australia is low.

2.2 Regulatory regime

The Commission's powers and functions in relation to SA Power Networks are contained in the Electricity Act and the ESC Act, and its regulatory requirements for SA Power Networks are set out in the terms and conditions of its electricity distribution licence, the Electricity Distribution Code and Electricity Industry Guideline No. 1 - Distribution.

As a monopoly service provider, SA Power Networks is subject to economic regulation in respect of the revenues it is permitted to earn from South Australian consumers. The AER is responsible for administering that regulatory regime under the National Electricity Rules (**NER**). 2014-15 was the last year of the current five year regulatory determination period 2010-2015.

2.3 Customer service

2.3.1 Performance against customer service standards

SA Power Networks is required to use best endeavours to achieve customer service standards, as contained in the Electricity Distribution Code. SA Power Networks received approximately 475,000 telephone calls and 2,700 written enquiries in 2014-15. It met both its customer service standards in 2014-15 (Table 2).

Standard	Five year average performance	2014-15 Performance
Eighty five per cent of telephone calls answered within 30 seconds	89%	91%
Ninety five per cent of written enquiries answered within five business days	98%	98%

Table 2: SA Power Networks Performance against Customer Service Standards

2.4 Network reliability

2.4.1 How performance is measured

2.4.1.1 Network reliability service standards

For the 2010 to 2015 regulatory period, annual network reliability service standards were established under the Electricity Distribution Code to promote network reliability outcomes, as measured by the duration and frequency of unplanned supply interruptions to customers connected to the network in seven geographic regions (Figure 1) - Adelaide Business Area, Major Metropolitan Areas, Central, Eastern Hills/Fleurieu Peninsula, Upper North/Eyre Peninsula, South East and Kangaroo Island.



Figure 1 - South Australian electricity reliability performance regions

The duration of interruptions is the average duration (in minutes) of supply interruptions per customer per year. The frequency of interruption is the average number of supply interruptions per customer per year.

The duration and frequency service standards for unplanned interruptions were established using SA Power Networks' 2005 to 2010 performance data for each region. The service standards include the impact of severe weather events during that period. By excluding severe weather events² from the unplanned interruption data, normalised network reliability is derived, which indicates the consistency of underlying network performance. Normalised network reliability is the performance of the network under normal conditions (not during severe weather events).

² A Severe Weather Event is defined as a weather related event where the contribution to the regional duration of interruptions was the greater of three minutes, or three per cent of the regional duration of interruptions standard in clause 1.2.3.1 of the Electricity Distribution Code.

Network reliability standards are 'best endeavours' average annual service standards. They require SA Power Networks to use its best endeavours to meet specified average service level targets each year. Where a target is not met, this does not necessarily mean the standard is not met. The standard may still be met if SA Power Networks can demonstrate that it has used best endeavours in trying to meet the target.

The Commission considers several factors in assessing whether or not SA Power Networks has used its best endeavours to meet a network reliability standard. These include normalised performance, performance of SA Power Networks' restoration of supply following severe weather events, preparation for imminent severe weather events, and other impacts on the network that may have affected performance during the year. As network performance can vary considerably from year to year, the Commission also considers whether there is any evidence of a deteriorating long-term trend in performance.

The Electricity Distribution Code also requires SA Power Networks to use its best endeavours to minimise interruptions or limitations to supply caused by planned interruptions, such as carrying out maintenance or repair to the distribution network, connecting a new supply address to the distribution network and carrying out augmentations or extensions to the distribution network.

2.4.1.2 Other network reliability metrics

The Commission also assesses performance of Low Reliability Distribution Feeders (LRDF), which are the parts of the network that experience frequent and protracted outages. This element of performance reporting provides some assurance that SA Power Networks is giving due consideration to poorly performing parts of its network.

A LRDF within a particular region is defined as a feeder that exceeds greater than 2.15 times the interruption duration target of that region during the year.³ LRDFs are often located in rural or remote parts of the network where restoration activities following a fault can often be influenced by difficult terrain or long distances that need to be patrolled to locate and repair the fault.

Remediation of LRDFs is dependent, to a degree, on the extent of the benefit gained relative to the cost of the work. Understandably, there will be situations where the cost far outweigh the benefits. There will remain parts of the network with lower reliability and the Commission will continue to report on performance of those over time. To some extent, GSL payments serve to balance the impact of lower reliability performance for the affected customers.

³ Refer p. 16 <u>http://www.escosa.sa.gov.au/library/100617-ServiceStandards2010-2015-FinalDecision.pdf</u>

2.4.2 Network performance in 2014-15

2.4.2.1 Summary of performance

Region	Duration of interruptions		Region Durati		Freque	ency of interru	ptions
	Target (minutes)	2014-15 result	Service standard met	Target (frequency)	2014-15 result	Service standard met	
Adelaide Business Area	25	11		0.25	0.15		
Major Metropolitan Areas	130	105		1.45	1.12		
Central	260	280		1.80	1.36		
Eastern Hills/Fleurieu Peninsula	295	229		2.80	1.58		
Upper North/Eyre Peninsula	425	354		2.30	1.43		
South East	295	199		2.50	1.67		
Kangaroo Island	450	266		N/A	3.18		
Statewide (implied target)	179	152		1.68	1.23		

Table 3: SA Power Networks Performance against interruption service standards

In 2014-15, SA Power Networks met all supply interruption service standards (Table 3) in the seven regions. It did not meet the duration of interruptions target in the Central region, but has been assessed as meeting the best endeavours standard (section 2.4.2.3.3). In 2013-14, SA Power Networks also met all regional supply interruption service standards.

2.4.2.2 Causes of interruptions

Figure 2 summarises the cause of interruptions to customers, as reported by SA Power Networks. As noted above, the service standards for duration and frequency of interruptions are for unplanned interruptions only.⁴

⁴ The Electricity Distribution Code also requires SA Power Networks to use its best endeavours to minimise interruptions or limitations to supply caused by planned interruptions.



Figure 2: Interruption causes contribution to statewide duration of interruptions

SA Power Networks reported that, during 2014-15, weather was responsible for a significantly lower contribution to the average duration of interruptions than in 2013-14, reflecting the lower number of severe weather events in 2014-15. It is expected that there will be some variability in non-weather impacted performance from year to year, and the best endeavours framework allows individual events and circumstances to be analysed when assessing whether or not service standards have been met.

2.4.2.3 Long term normalised and non-normalised performance

Figure 3 shows that overall and normalised statewide average duration of interruptions in 2014-15 were low compared to prior years. Statewide average frequency of interruptions was also low in 2014-15.



Figure 3 - Graph of statewide duration of interruptions performance over the last nine years⁵

⁵ 2006-07 to 2009-10 duration of interruptions are for the high voltage network only. 2010-11 onwards includes duration of interruptions on the low voltage network.

The impact of weather has been the major cause of supply interruptions to customers over the last 10 years. Severe weather events can vary significantly in their strength and can have differing effects on the distribution network, depending on their location and their duration. Though not evident during 2014-15, the increasing impact of severe weather events on the network over time appears to be caused by a combination of greater severity and greater asset damage resulting from each event.

SA Power Networks reports that restoration of supply times for major weather events (averaged over the State) appear to have remained relatively consistent over the last 10 years.⁶

2.4.2.4 Severe weather impacts in 2014-15

In 2014-15 there were three major severe weather events, compared to seven in 2013-14. There has been an annual average of 5.5 events over the last 10 years. The impact of severe weather events on customers was also significantly lower in 2014-15. On average, each customer experienced 33 minutes without supply due to severe weather during 2014-15 compared with 132 minutes in 2013-14, and an average of 87 minutes over the last 5 years. This was the lowest contribution to interruptions from severe weather events since 2011-12.

SA Power Networks reported that customer restoration times during severe weather events in 2014-15 were consistent with previous years.⁷

2.4.2.5 Adelaide Business Area

The Adelaide Business Area covers Adelaide Central Business District bordered within the parklands. The region accounts for 0.6 per cent of SA Power Networks' customers and comprises 0.4 per cent of the distribution system. The distribution network is about 90 per cent underground and is therefore not normally affected by severe weather.

Table 4 shows that SA Power Networks met both service standards for the Adelaide Business Area in 2014-15.

Standard	Target	2014-15 result	Service standard met
Duration of interruptions (minutes per customer per year)	25	11	
Frequency of interruptions (number per customer per year)	0.25	0.15	

Table 4: Adelaide Business Area region performance 2014-15

Duration interruption performance in the Adelaide Business Area has remained consistently high and better than target over the last nine years as shown in Figure 4.

⁶ SA Power Networks ranks its major events into four categories from least (Category 1) to greatest severity (Category 4). Average annual response times to Category 1 events between 2006 and 2015 have ranged between 130 and 195 minutes, averaging about 173 minutes and not demonstrating an upwards trend.

⁷ Response times for the single Category 1 event was 178 minutes, compared to an average of 173 minutes for Category 1 events between 2006 and 2014.



Figure 4 - Adelaide Business Area duration of interruptions performance (minutes)

2.4.2.6 Major Metropolitan Areas

The Major Metropolitan Areas region supplies 71 per cent of SA Power Networks' customers and comprises 31 per cent of the distribution system, including most of the Adelaide region and other major centres outside of the Adelaide region. Approximately 40 per cent of the distribution network in this region is underground.

Table 5 shows that SA Power Networks met both service standards for the Major Metropolitan Areas region in 2014-15.

Standard	Target	2014-15 result	Service standard met
Duration of interruptions (minutes per customer per year)	130	105	
Frequency of interruptions (number per customer per year)	1.45	1.12	

Table 5: Major Metropolitan Areas region performance 2014-15

Figure 5 below shows that the average duration of interruptions in 2014-15 was lower than in any of the last nine years. Performance in the region was not adversely affected by severe weather events in 2014-15.



Figure 5 - Major Metropolitan Areas duration of interruptions performance (minutes)

2.4.2.7 Central region

The Central region covers the Barossa, Mid-North, Riverland and Murraylands. The region accounts for 12 per cent of SA Power Networks' customers but comprises 29 per cent of the distribution system. The distribution network in the Central region is nine per cent underground.

Table 6 shows that SA Power Networks met both service standards for the Central region in 2014-15. In doing so, it did not meet the duration of interruptions target, but has been assessed as meeting the best endeavours standard (see below for best endeavours assessment).

Table 6: Centra	l region performa	ance 2014-15	
			Γ

Standard	Target	2014-15 result	Service standard met
Duration of interruptions (minutes per customer per year)	260	280	
Frequency of interruptions (number per customer per year)	1.80	1.36	

Network performance in the Central region was comparable with previous years. The region was moderately affected by severe weather events in 2014-15, similar to 2011-12 and 2012-13. Figure 6 shows duration interruption performance over the last nine years.



Figure 6 – Central region duration of interruptions performance (minutes)

Best endeavours assessment - Duration of interruptions, Central region

The duration of interruptions target for the Central region was exceeded by eight per cent (twenty minutes).

The Commission has considered the circumstances causing SA Power Networks to miss the target and the information provided by SA Power Networks and has assessed that SA Power Networks **has used its best endeavours to meet the standard** for the following reasons:

- The network in the region was affected by four severe weather events in 2014-15, accounting for 43 per cent (121 minutes) of the duration of interruptions result.
- The two most disruptive events, which occurred on 22 November 2014 and 7-8 January 2015, accounted for 33 per cent (93 minutes) of the duration of interruptions result. SA Power Networks convened its Emergency Response Team to coordinate their response to both of these events. The time taken to restore customer supply following these two severe weather events (319 minutes) was similar to that historically achieved by SA Power Networks for comparable intensity severe weather events (the average response times for Category 2 events (as defined by SA Power Networks) between 2006 and 2014 was 309 minutes).
- Figure 6 shows that the average normalised duration of interruptions in 2014-15 was low compared to prior years, and there is no evidence that trend normalised performance is deteriorating.

2.4.2.8 Eastern Hills/Fleurieu Peninsula

The Eastern Hills/Fleurieu Peninsula supplies seven per cent of SA Power Networks' customers and comprises nine per cent of the distribution system. The distribution network is 21 per cent underground.

Table 7 shows that SA Power Networks met both service standards for the Eastern Hills/Fleurieu Peninsula region in 2014-15.

Table 7: Eastern Hills/Fleurieu Peninsula region performance 2014-15

Standard	Target	2014-15 result	Service standard met
Duration of interruptions (minutes per customer per year)	295	229	
Frequency of interruptions (number per customer per year)	2.80	1.58	

Figure 7 shows that the average duration of interruptions in 2014-15 in the Eastern Hills/Fleurieu Peninsula region was lower than in any of the previous eight years. Performance in the region was not adversely affected by severe weather events in 2014-15.





2.4.2.9 Upper North/Eyre Peninsula

The Upper North/Eyre Peninsula region accounts for five per cent of SA Power Networks' customers but comprises 19 per cent of the distribution system. The distribution network is only four per cent underground.

Table 8 shows that SA Power Networks met both service standards for the Upper North/Eyre Peninsula region in 2014-15.

Standard	Target	2014-15 result	Service standard met
Duration of interruptions (minutes per customer per year)	425	354	
Frequency of interruptions (number per customer per year)	2.30	1.43	

Table 8: Upper North/Eyre Peninsula region performance 2014-15

Network performance in the Upper North/Eyre Peninsula region has shown some improvement over the past four years. Performance in the region was not adversely affected by severe weather events in 2014-15. Figure 8 shows duration of interruptions performance over the last nine years.





2.4.2.10 South East

The South East region supplies four per cent of SA Power Networks' customers but comprises 11 per cent of the distribution system. The distribution network is only six per cent underground.

Table 9 shows that SA Power Networks met both service standards for the South East region in 2014-15.

Standard	Target	2014-15 result	Service standard met
Duration of interruptions (minutes per customer per year)	295	199	
Frequency of interruptions (number per customer per year)	2.50	1.67	

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Figure 9 shows that the average duration of interruptions in 2014-15 in the South East region was lower than in any of the previous eight years. Performance in the region was not adversely affected by severe weather events in 2014-15.



Figure 9 - South East duration of interruptions performance (minutes)

2.4.2.11 Kangaroo Island

The Kangaroo Island network supplies 0.5 per cent of SA Power Networks' customers and comprises 1.7 per cent of the distribution system. The distribution network is only eight per cent underground.

Table 10 shows that SA Power Networks met its annual duration interruption service standard on Kangaroo Island in 2014-15. No frequency of interruptions service standard was set for Kangaroo Island for the 2010 to 2015 regulatory period. Prior to standards being set, Kangaroo Island had experienced reliability of supply issues for some time and various options were being considered to improve reliability, such as new generation (on Kangaroo Island) coupled with appropriate control equipment. New generation,⁸ for example, was expected to reduce the duration of interruptions but not the number of supply interruptions. It was therefore decided that setting a frequency of interruptions service standard might limit the range of cost effective solutions to reduce the length of supply interruptions.

Table 10: Kangaroo Island p	performance 2014-15
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Standard	Target	2014-15 result	Service standard met
Duration of interruptions (minutes per customer per year)	450	266	

Figure 10 below shows the average duration of interruptions over the last nine years on Kangaroo Island. 2014-15 performance on Kangaroo Island was not adversely affected by severe weather events.

⁸ Additional generation was installed on Kangaroo Island in 2008.



Figure 10 - Kangaroo Island duration of interruptions performance (minutes)

2.4.2.12 Low reliability distribution feeders

In assessing performance, the Commission reviews the number of LRDFs and customers affected in any given year. The review process focuses on individual feeder performance in poorly served parts of the network over two or more consecutive years, thus reducing the variability impact of individual events in any one year (for example, storms or abnormal incidents).

In 2014-15, there were 108 feeders that qualified as LRDFs affecting 23,611 customers (three per cent of the customer base), compared to 145 feeders affecting 41,776 customers in 2013-14 (Table 11). The decrease in the number of LRDFs in 2014-15 was largely due to the reduced effect of severe weather events during the year.

Region	2012-13		2013-14		2014-15	
	No. of feeders	No. of customers	No. of feeders	No. of customers	No. of feeders	No. of customers
Adelaide Business Area	0	0	2	195	0	0
Major Metropolitan Areas	14	9,074	24	26,269	15	12,763
Central	49	5,271	42	4,149	41	4,483
Easter Hills/Fleurieu Peninsula	9	2,022	19	5,624	12	3,414
Upper North & Eyre Peninsula	23	1,623	36	2,492	30	2,073
South East	13	2,340	19	2,755	8	669
Kangaroo Island	3	310	3	292	2	209
Statewide	111	20,640	145	41,776	108	23,611

Table 11: Low reliability performing feeders in 2012-13 to 2014-15

Five feeders, supplying 462 customers, have been classed as LRDFs for five or more consecutive years, and a further five feeders, supplying 809 customers, have been classed as LRDFs for four or more consecutive years (Table 12). Of those 10 feeders, three demonstrated worse performance in 2014-15 than in 2013-14. For example, the Korunye SWER⁹ feeder (north-west of Gawler) has shown both declining overall and normalised performance for each of the last three years. Ten feeders, that were LRDFs for the four previous years, improved performance and were no longer categorised as LRDFs in 2014-15.

In 2014-15, SA Power Networks paid more than \$30,000 in GSL payments to customers on the five feeders classed as LRDFs for five or more consecutive years.

Year	Number of feeders - consecutive years as LRDF				
	2 Years	3 Years	4 Years	5 Years	
2014-15	28	12	5	5	
2013-14	31	13	15	not applicable	
2012-13	25	31	not applicable	not applicable	

Table 12: Number of feeders classed as low reliability distribution feeders for consecutive years

2.5 Guaranteed Service Level (GSL) payments

2.5.1 What are GSL payments?

Under the Electricity Distribution Code, SA Power Networks is required to make payments to customers who have received service that is worse than a pre-determined guaranteed level.

While GSL payments are directed at individual customers, they provide a financial incentive for SA Power Networks to assess the trade-off between making GSL payments and undertaking capital and/or operational expenditure to address poor performance.

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. Most GSL payments relate to the duration of interruptions during major severe weather events. Table 13 details the duration of interruptions, GSL thresholds and levels of payments.

	Threshold 1	Threshold 2	Threshold 3	Threshold 4
Duration of interruption (hours)	>12≤ 15	>15≤ 18	>18≤ 24	>24
Payment	\$90	\$140	\$185	\$370

Table 13: Dura	tion of interruntion	GSL thresholds and	navment amounts
Tubic 10. Dulu	lion of interruption		payment amounts

2.5.2 GSL payments in 2014-15

There was a substantial decrease in the total level of GSL payments made in 2014-15 compared to 2013-14. A total of \$2.7 million (Figure 11) was paid to customers, reflecting the lower impact of severe weather in 2014-15. The majority of GSL payments (86 per cent) were for duration of interruptions resulting from protracted outages following severe weather events.

⁹ Single-wire earth return.





All bands of GSL duration payments were lower in 2014-15 (Figure 12), with similar proportions of payments for each band as in 2013-14.



Figure 12 - GSL duration payments 2005-06 to 2014-15

2.6 Street light repairs

SA Power Networks is obliged to use its best endeavours to repair faulty street lights for which it is responsible, within five business days in major metropolitan and major regional centres and within 10 business days in country areas.

SA Power Networks' performance for timely repair of street lights fell to historically low levels in 2014-15. Ninety three per cent of street light faults in the major metropolitan and major regional centres were repaired within five working days, with an average repair time of 4.8 working days. In country areas, 99 per cent of street light faults were repaired within 10 working days, with an average repair time of 2.9 working days.

SA Power Networks reported that its performance deteriorated in major metropolitan and major regional centres due to the discovery of asbestos in some light fittings that required a suitable safe work method to be developed and for personnel to be trained, significantly delaying the repair of some lights. SA Power Networks expects that performance will return to historic levels in 2015-16.

As a result of the reduced performance in 2014-15, SA Power Networks paid \$256,975 in GSL payments to customers where it did not complete repairs within the required time. This sum is 2.5 times the amount paid out in 2013-14.

2.7 Compliance

It is a condition of all electricity licences that licensees comply with all applicable laws including, but not limited to the Electricity Act and regulations under that Act.

2.7.1 SA Power Networks compliance issues in 2014-15

2.7.1.1 Clearance of vegetation from power lines

Part 5 of the Electricity Act specifies obligations applying to SA Power Networks in relation to the clearance of vegetation from power lines. SA Power Networks has a duty to take reasonable steps to keep vegetation clear of power lines under its control. The Office of the Technical Regulator is responsible for the administration of this obligation.

SA Power Networks reported a non-compliance with its vegetation clearance duties for 2014-15. However, SA Power Networks advised the Commission that it had put in place remedies during the year and, as at 30 June 2015, was compliant with these obligations.

2.7.1.2 Asset inspections

Clause 8 of SA Power Networks' Electricity Distribution Licence specifies obligations relating to its Safety, Reliability, Maintenance and Technical Management Plan. SA Power Networks is behind in its asset inspections for non-bushfire risk areas. SA Power Networks is implementing a multi-year plan to ensure all inspections are up to date by December 2018.

3 Electricity Transmission

3.1 South Australian electricity transmission network

ElectraNet is the monopoly service provider of national electricity grid transmission services in South Australia.

The electricity transmission network in South Australia extends across approximately 200,000 square kilometres, and includes 88 high voltage substations and 5,600 route kilometres of transmission lines. The transmission network transports electricity from generators at voltages of 275 kV and 132 kV to the State's lower-voltage distribution network (owned by SA Power Networks) and some large industrial customers.

3.2 Regulatory regime

The Commission, as a part of its licensing function, is able to set certain regulatory obligations, including transmission network reliability standards, through the Electricity Transmission Code. As a condition of its licence, ElectraNet must comply with the Electricity Transmission Code.

As a monopoly service provider, ElectraNet is subject to economic regulation in respect of the revenue it is permitted to earn from South Australian consumers. The AER is responsible for administering that regulatory regime under the NER.

The Electricity Transmission Code forms a part of the broader regulatory scheme for electricity transmission in the National Electricity Market (**NEM**). The NER establish technical standards, dealing with matters such as network frequency, system stability, voltage quality and fault clearance. The Commission's role is confined to the development and administration of reliability standards, which are jurisdictional standards that align with, and complement, the NER technical standards. These reliability standards are set within the Electricity Transmission Code.

The Electricity Transmission Code also requires ElectraNet to maintain the quality of supply and to minimise the number and duration of supply interruptions to customers.

3.3 Network reliability

3.3.1 How performance is measured

3.3.1.1 Mandated exit point reliability standards

The Commission sets service standards, in the Electricity Transmission Code, for mandated exit point reliability, the obligation to restore supply within specified timeframes in the event of an outage and the requirement to provide redundant capacity so that supply is continuous even if one part of the network fails. Each exit point category has specific reliability and supply restoration standards. Exit points are the connections between ElectraNet's transmission network and its customers such as SA Power Networks or, in a small number of cases, directly connected customers.

Category 1 has the lowest reliability and supply restoration requirements and Category 5 has the highest. The standards require, in effect, a level of security (also referred to as redundancy) to be built into ElectraNet's transmission system so that it can, in most cases, maintain a continuous electricity supply. Further, when network elements fail, the standards require remediation within specified timeframes. The categorisation of exit points is based on periodic assessments as to whether or not the costs of augmenting each exit point are outweighed by the value to customers of the increased reliability that would result.

3.3.1.2 Other reliability metrics

The Commission monitors other network reliability metrics that impact South Australian customers, notably:

- number of power system incidents where the transmission network supply is interrupted, usually as a result of a power line tripping
- System Minutes Off Supply (SMOS) attributed to power system incidents a measure of transmission network unavailability. It is an indicator of the service level of the transmission network in supplying energy to network customers
- circuit availability measures the proportion of ElectraNet's network (by length of transmission line) which is available throughout the year and is influenced by both planned (maintenance and construction) and unplanned outages.

3.3.2 Network performance in 2014-15

3.3.2.1 Supply interruptions

There was one transmission line failure in 2014-15, occurring on the Blanche - Mt Gambier 132kV line on 4 December 2014. ElectraNet restored line capacity within the exit point reliability standard timeframe specified in the Electricity Transmission Code. There were no transformer failures in the year.

There were seven power system interruptions with SMOS attributed to ElectraNet in 2014-15 (Figure 13), significantly fewer than in prior years. None of these events resulted in protracted interruptions affecting large numbers of customers, so that total SMOS was lower than in prior years.





3.3.2.2 Network availability

ElectraNet achieved circuit (transmission line) availability of 99.52 per cent in 2014-15 (Figure 14). The target of 99.25 per cent is set by the AER.



3.3.3 Heywood and Murraylink Interconnectors

The Commission licenses and monitors the performance of the two regulated interconnectors between the South Australian and Victorian regions of the NEM; the Heywood interconnector, of which the South Australia section is operated by ElectraNet, and the Murraylink interconnector, operated by the Murraylink Transmission Company.

Monitoring these interconnectors is important, as reliable interconnector performance may assist in reducing electricity prices to South Australian consumers, with interconnector reliability also an important aspect of the State's security of supply.

The Australian Energy Market Operator (**AEMO**) provides information regarding the historic energy flows across the two interconnectors.¹⁰

3.4 Compliance

It is a condition of all electricity licences that licensees comply with all applicable laws including, but not limited to the Electricity Act and regulations under that Act.

3.4.1 ElectraNet compliance issues in 2014-15

There were no reported compliance issues during the year.

¹⁰ Refer <u>http://www.aemo.com.au/Electricity/Resources/Reports-and-Documents/Network-Operations/Interconnector-Quarterly-Report</u> for links regarding interconnector capability performance.

4 Gas distribution

4.1 South Australian gas distribution network

Australian Gas Networks (**AGN**) (formerly Envestra) distributes natural gas to consumers through its gas distribution network.

The South Australian gas distribution network comprises 7950 km of gas mains that serves over 430,000 customers. AGN distributed over 32,000 Terajoules (TJ) of gas to customers in 2014-15.

4.2 Regulatory regime

The Commission's powers and functions in relation to AGN are contained in the Gas Act and the ESC Act, and the Commission's regulatory requirements for AGN are set out in the terms and conditions of the gas distribution licence held by AGN, the Gas Distribution Code and Gas Guideline No. 1 - Distribution.

The Gas Distribution Code requires AGN to maintain gas pressure in the system, maintain capability of the distribution system, and maintain a Gas Measurement Management Plan and a Safety, Reliability, Maintenance and Technical Management Plan (**SRMTMP**).

As a monopoly service provider, AGN is subject to economic regulation in respect of the revenues it is permitted to earn from South Australian consumers. The AER is responsible for administering that regulatory regime. The current five year regulatory determination period ends on 30 June 2016.

4.3 Network reliability

4.3.1 How performance is measured

4.3.1.1 Minimising gas leaks

The Commission has set a requirement in the Gas Distribution Code that AGNs' SRMTMP must include an Unaccounted for Gas (**UAFG**) plan, covering leakage management, asset management and mains replacement. AGN is required to use its best endeavours to achieve a level of UAFG for its distribution system of no more than 1626 TJ by the end of 2015-16, and reduce the levels of unaccounted for gas in each year of the current regulatory period (until 30 June 2016).

The level of UAFG is the difference between the measured quantities of gas entering AGN distribution network and the measured quantities of gas billed to end-user customers. UAFG data is determined by the AEMO.

The Commission monitors AGN adherence to its Mains Replacement Plan due to its direct impact on UAFG.

4.3.1.2 Other reliability metrics

The Commission monitors unplanned supply interruptions, including the numbers of customers affected and the duration of the interruptions. The Commission has not set service standards for responsiveness to potential gas leaks nor timeliness to restore supply after an interruption.

4.3.2 Network performance in 2014-15

4.3.2.1 Unaccounted for gas

UAFG in the AGN network fell 15 per cent in 2014-15 to 1,213 TJ (Figure 15), against the revised 2013-14 value of 1,435 TJ. The 2014-15 UAFG amount is 25 per cent below the cap of 1,626 TJ set in the Gas Distribution Code. AGN must still ensure that there is a further annual reduction in UAFG in 2015-16.





4.3.2.2 Supply interruptions

AGN reported 15 interruptions in 2014-15 affecting the supply of gas to five or more customers. In total 10,019 customers experienced an unplanned loss of supply, the longest of which was when supply was lost to Port Pirie and Whyalla following a rupture on Epic Energy's transmission pipeline that supplies the distribution networks to both towns. The gas supply took eight days to restore and 9,575 customers were affected by this incident.

Five of the remaining interruptions occurred when pipes were damaged during mains replacement work.

4.4 Compliance

It is a condition of all gas licences that licensees comply with all applicable laws including, but not limited to the Gas Act and regulations under that Act.

4.4.1 Australian Gas Networks compliance issues in 2014-15

4.4.1.1 Low gas pressure

The Gas Distribution Code requires AGN to maintain gas pressure in low pressure mains at between 1 kilopascal (**kPa**) and 3 kPa and in medium or high pressure mains at between 2.75 kPa and 3.25 kPa. AGN reported that instances occurred during 2014-15, where the pressure in parts of the network was below these minimum requirements. These were mainly caused by third-party damage to mains and water ingress in low pressure mains after heavy rain. AGN has reported the same non-compliance for the last four years.

AGN is undertaking a long term mains replacement program to eliminate water ingress into low pressure mains, and the number of such incidents is falling. The Commission appreciates that third-party damage to mains is largely beyond the control of AGN. The Commission is satisfied by the remedial action being undertaken by AGN in addressing these compliance issues.

5 Off-grid electricity networks

5.1 South Australian off-grid electricity networks

Many remote communities not connected to the national electricity grid are provided with electricity through off-grid networks. The Commission regulates these services through the licensing and consumer protection regime under the Electricity Act.

Approximately 2,800 customers in South Australia are supplied through off-grid electricity networks (not including Roxby Downs), over half of which are in Coober Pedy (Table 14).

Location	Number of connections	Retail licensee	Distribution licensee	Grid connection
APY lands, MT lands, Marla, Oodnadatta, Maree, Nundroo, Kingoonya, Glendambo, Parachilna, Blinman, Cockburn	628	Minister for Mineral Resources and Energy	SA Power Networks - Remote Areas	No
Andamooka	463	Jeril Enterprises Jeril Enterprises Pty Pty Ltd Ltd		No
Coober Pedy	1,481	District Council of Coober Pedy	District Council of Coober Pedy	No
Yunta	66	Dalfoam Pty Ltd	Dalfoam Pty Ltd	No
Iron Knob, Pimba, Woomera	170	Exemptª	Cowell Electric Supply Pty Ltd	Via OneSteel at Iron Knob
Iron Knob, Iron Barron, Iron Lake	Not available	Exemptª	OneSteel Manufacturing Pty Ltd	Yes
Roxby Downs	Not available	Exemptª	Municipal Council of Roxby Downs	Via Olympic Dam
Olympic Dam	Not available	Exemptª	BHP Billiton Olympic Dam Corporation Pty Ltd	Yes

Table 14: Off-grid electricity networks

^aNational Energy Retail Law exemption (issued by the AER).

Note that the Commission also regulates electricity generators through its licensing regime. All generation licences are available on the Commission's website.

Figure 16 shows the location of the off-grid electricity businesses licensed to operate in South Australia.



Figure 16 - Towns provided with electricity through off-grid networks

5.2 Regulatory regime

Off-grid networks are operated by either private businesses or the South Australian Government. The Commission licences all participants in the electricity supply industry where those participants engage in the generation of electricity, operation of a transmission or distribution network, power system control or retailing of electricity (off-grid energy retailers only).

Licensees are required to operate in accordance with specified licence requirements. Off-grid licensees providing retail and distribution services have licence requirements broadly covering:

- Technical requirements such as development of a SRMTMP, a connections policy and a metering plan (if applicable).
- Consumer protections behavioural standards and minimum requirements to be complied with by retailers when dealing with their customers, including reliability of supply requirements.
- Reporting requirements and administrative matters.

5.2.1 Consumer protections

Customers of off-grid retailers are afforded similar consumer protections to customers of on-grid energy retailers. Off-grid licensees' obligations to their customers, as set out in their licences, relate to:

- Customer supply contracts requirement to develop standard terms and conditions on which it will connect customers' supply and sell and supply electricity.
- Customer dispute resolution procedures requirement to have procedures in place, based on AS ISO 10002-2006 "Customer Satisfaction - Guidelines for Complaints Handling in Organisations".
- Supply obligations maintain the quality of supply and minimise interruptions; provide notice for planned interruptions; connect customers within agreed timeframes.
- Customer service obligations provision of regular bills and information to be included on the bill; conduct regular meter readings; dealing with billing disputes (including undercharging and overcharging); minimum payment methods; offering flexible payment arrangements; rules for security deposits.
- Disconnections and restoration of supply retailer obligations around disconnecting customer supply for non-payment; prohibitions on disconnection; timeliness for restoration of supply.

5.3 Off-grid licensee performance

5.3.1 How performance is measured

The Commission has identified key metrics to monitor the performance over time of off-grid licensees. These include:

- the number of disconnections for non-payment of a bill made by each off-grid retailer
- the number and duration of interruptions of supply for each off-grid distributor
- ▶ licensees' compliance with their licence requirements.

Over time this assists the Commission in assessing the adequacy of licensee performance and whether the consumer protections are appropriate.

5.3.2 Off-grid performance in 2014-15

Thirty four customers were disconnected for non-payment of a bill in 2014-15 (all but two of these customers were in Coober Pedy), a rate of 1.2 per 100 customers. This is lower than in 2013-14, and comparable to electricity disconnections in South Australia by on-grid retailers (1.36 per 100 customers).¹¹

There were 26 reported unplanned interruptions that impacted on residential customers (excluding Roxby Downs) in 2014-15; a similar number to that in 2013-14. There were no protracted interruptions to customer supply reported in 2014-15.

Off-grid licensees did not report any non-compliances with applicable laws (including, but not limited to the Electricity Act and regulations under that Act) in 2014-15.

¹¹ Australian Energy Regulator, Annual Report on the Performance of the Retail Energy Market 2014-15, November 2015, p 34, viewed 25 November 2015, available at <u>http://www.aer.gov.au/retail-markets/performance-reporting/aer-annual-report-on-the-performance-of-the-retail-energy-market-2014-15</u>.

6 LPG networks

6.1 South Australian LPG networks

There are three licensed distributors and retailers of LPG through reticulated networks in South Australia (Table 15). The Commission regulates these services through the licensing and consumer protection regime under the Gas Act.

Reticulated LPG networks exist in various towns and supply gas to approximately 3,200 connections.

Location	Number of connections	Retail licensee	Distributor licensee
Roxby Downs, Victor Harbor, Renmark, Port Lincoln, Wallaroo, Cape Jaffa	2,689	Origin Energy	Origin Energy
Mount Barker	498	Elgas Limited	Environmental Land Services (Aust) Pty Ltd
Clare (Hanlins Rise)	61	Elgas Limited	Elgas Limited

Table 15: LPG networks

6.2 Regulatory regime

Those who engage in the activity of distributing and retailing LPG through reticulated networks in South Australia are required to be licensed by the Commission. It is a licence condition that LPG licensees comply with the Reticulated LPG Industry Code. The Reticulated LPG Industry Code contains provisions relating to the sale and supply of reticulated LPG to small customers (customers consuming less than 1TJ of LPG annually).

Retailer licences and the Reticulated LPG Industry Code set the following broad obligations for licensees:

- Technical requirements such as development of a SRMTMP, a connections policy and a metering plan (if applicable).
- Consumer protections behavioural standards and minimum requirements to be complied with by retailers when dealing with their customers, including reliability of supply requirements.
- Reporting requirements and administrative matters.

6.2.1 Consumer protections

Customers of LPG retailers are afforded similar consumer protections to customers of on-grid energy retailers. LPG licensees' obligations to their customers, as set out in the Reticulated LPG Industry Code, relate to:

- Customer supply contracts requirement to develop standard terms and conditions, and provide contractual information disclosure, on which it will connect customers' supply, and sell and supply LPG.
- Customer dispute resolution procedures requirement to have procedures in place, in accordance with AS ISO 10002-2006 "Customer Satisfaction - Guidelines for Complaints Handling in Organisations".
- Supply obligations maintain the quality of supply and minimise interruptions; provide notice for planned interruptions; connect customers within agreed timeframes.

- Customer service obligations provision of regular bills and information to be included on the bill; conduct regular meter readings; dealing with billing disputes (including undercharging and overcharging); minimum payment methods; offering flexible payment arrangements; rules for security deposits; publishing fees and charges; rules for changing tariffs; methods of communication with customers.
- Disconnections and restoration of supply retailer obligations around disconnecting customer supply for non-payment; prohibitions on disconnection; timeliness for restoration of supply.

6.3 LPG licensee performance

6.3.1 How performance is measured

The Commission has identified key metrics to monitor the performance over time of LPG licensees. These include:

- the number of disconnections for non-payment of a bill made by each off-grid retailer
- the number of quality complaints for each LPG retailer
- the number and duration of interruptions of supply for each off-grid distributor
- licensees' compliance with their licence requirements.

Over time this assists the Commission in assessing the adequacy of licensee performance and whether the consumer protections are appropriate.

6.3.2 LPG licensee performance in 2014-15

2014-15 was the first year that businesses distributing and retailing LPG through reticulated networks in South Australia were required to report to the Commission.

Five customers (all in Roxby Downs) were disconnected for non-payment of a bill in 2014-15, a rate of 0.2 per 100 customers, compared to gas disconnections in South Australia by on-grid retailers of 1.12 per 100 customers.¹²

There were two reported distribution system interruptions in 2014-15, one in the Wallaroo network and one in the Cape Jaffa network.

There was one non-compliance with the Reticulated LPG Industry Code reported in 2014-15. Origin Energy reported that it might not have advised customers that they could contact a dispute resolution body in the event they were unhappy with the outcome of a billing dispute, as required by clause 5.4.8 of the Reticulated LPG Industry Code. Origin Energy has updated its procedures and briefed its call centre staff on this requirement.

¹² Australian Energy Regulator, Annual Report on the Performance of the Retail Energy Market 2014-15, November 2015, p 35, viewed 25 November 2015, available at <u>http://www.aer.gov.au/retail-markets/performance-reporting/aer-annual-report-on-the-performance-of-the-retail-energy-market-2014-15</u>.



