2014 Annual Performance Report – Energy Distributors

December 2014

Economic Regulation Authority
WESTERN AUSTRALIA

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Key Points

- Growth in electricity connections has slowed; connections grew by 1% in 2014, down from 3.4% in 2013. Growth in gas connections was unchanged at 2.8%.
- The number of electricity customers and gas customers experiencing interruptions longer than 12 hours were both higher; the electricity interruptions were the result of adverse weather events.
- The length of supply interruptions on the regional networks operated by Horizon Power was lower in 2014, aided by reductions in the time taken to restore supply following a fault.
- The number of complaints made to Western Power about quality of service issues rose by 53.9%.

Overview

This is the latest in a series of annual reports[1] published by the Economic Regulation Authority (**ERA**) that examines the performance of energy distributors who supply small use customers in Western Australia.[2]

The purpose of this report is to bring transparency and accountability to the performance of electricity and gas distribution businesses that supply small use customers.

Customer Connections

Electricity Distributors

The growth in electricity connections has slowed to 1.0% in 2014, down from 3.4% in 2013…

The state-wide total number of customer connections on electricity distribution systems increased by 1.0% during 2014, rising to just over 1.1 million connections. Connections on the Western Power distribution system increased by 1.0%, while the connections in the regional areas supplied by Horizon Power increased by 1.6%.

The South West Interconnected Network (**SWIN**)[3] operated by Western Power accounts for 95.8% of total connections on electricity distribution systems.

Compared to 2013, the number of new connections on the Western Power network rose by 23.1% (from 23,994 in 2013 to 29,532 in 2014), while new connections on

[1] Each report covers the year ending 30 June.

[2] The definition of small use customers, and more information on the operation of the licensing scheme for distributors who supply these customers, can be found in Appendix 8.

[3] The South West Interconnected System (**SWIS**) is the entire energy system, including all generators covering the coastal area from Kalbarri to Bremer Bay and the Goldfields. The transmission and distribution system that supplies this area is known as the South West Interconnected Network (**SWIN**), which mostly (but not completely) comprises the infrastructure that Western Power owns and operates.

the Horizon Power distribution systems rose by 16.5% (from 2,401 in 2013 to 2,797 in 2014).[4]

In 2014, Western Power further improved their on-time delivery of new connections to reach a new high of 99.2%.

Gas Distributors

The growth in gas connections has remained steady, at 2.8% in 2014…

The state-wide total number of customer connections on gas distribution systems increased by 2.8% in 2014, up from 675,150 to 694,286 connections. During 2014, all three gas distributors reported an increase in connections on their systems: ATCO[5] by 2.8%, Esperance Power Station by 3.0% and Wesfarmers by 1.7%.

Connections on the ATCO distribution systems accounted for 99.81% of total connections, a figure that has been unchanged over the past three years.

Compared to 2013, the state-wide number of new connections on gas distribution systems increased by 31.3% in 2014, rising from 15,463 to 20,296 new connections.

Approximately 99.99% of new gas connections were delivered on time.

Distribution System Reliability

Electricity Distributors

There are two regulatory frameworks that are used to measure the reliability of electrical distribution systems in Western Australia: the *Electricity Industry (Network Quality & Reliability of Supply Code) 2005* (**NQ&R Code**), and the 2002 SCONRRR Framework.[6]

As the title implies, the NQ&R Code regulates the quality of electricity supplied to customers, and for the reliability of the supply of electricity to customers by distributors.[7] The Code includes targets for the average length of time that a customer has their electricity supply interrupted, depending on where they are located. Distributors are required to compensate small use customers if they have too many interruptions during the year, or if they have interruptions longer than 12 hours in duration.

The SCONRRR Framework was developed by Australian energy regulators to provide a standardised system of reporting on electricity distributor performance. As described below, compared to the NQ&R Code, the reliability measures in the Framework provide more information on the cause of supply interruptions from

[4] The number of new connections completed each year is greater than the net increase in total connections on distribution systems because the new connections involve those customers who are likely to be small use customers (based on the type of meter). After the connection has been energised, some of these new customers actually consume more than 160MWh of electricity per annum, which excludes them from the count of total [small use] customer connections.

[5] ATCO Gas Australia Pty Ltd.

[6] National regulatory reporting for electricity distribution and retailing businesses, Steering Committee on National Regulatory Reporting Requirements, Utility Regulators Forum, March 2002.

[7] Some of the standards in the NQ&R Code also apply to transmission network operators.

unplanned interruptions, with the latter being further broken down into interruptions caused by events beyond the reasonable control of the distributor (such as generation outages and third party damage to infrastructure) and interruptions caused by factors under the control of the distributor (including asset condition, maintenance and operational practices).

NQ&R Code

The number of interruptions to customer supply rose during 2014…

Between 2013 and 2014, the number of customer premises experiencing extended interruptions (>12 hours continuously) increased by 20.6%. Horizon Power reported a 544.8% increase (from 587 to 3,785 affected premises), while Western Power reported a 12.7% increase (from 38,820 to 43,750 affected premises). Western Power attributed the rise in extended interruptions on its networks to storms, while Horizon Power stated that just over 92% of the extended interruptions in 2014 were caused by Cyclone Christine.

In 2014, the number of customer premises experiencing multiple interruptions in the Perth CBD and Urban area[8] systems, all supplied by Western Power, were 41.6% higher than the previous year, while the number of Rural area[9] premises supplied by Western Power that experienced more than 16 supply interruptions increased by 120.1%. Western Power stated that the increased interruptions in the CBD and Urban areas were caused by planned interruptions to carry out network upgrade works, while the increase in Rural areas was due to pole top fires and overhead equipment failures.

The number of Rural area premises on the Horizon Power systems affected by multiple interruptions in 2014 was 61.9% lower than the previous year (down from 3,327 to 1,267 affected premises), Horizon Power stated that this was the result of significant system improvements in the Onslow and Wyndham power stations.

Overall, the average length of interruptions has also risen…

The average length of interruption to customer premises[10] in the Perth CBD increased from 28 minutes in 2013 to 35 minutes in 2014, exceeding the 30 minutes per annum standard set in the NQ&R Code. In the Urban areas, the average length of interruption fell from 390 minutes in 2013 to 343 minutes in 2014.[11]

Between 2013 and 2014, the average length of interruptions in the Rural areas supplied by Western Power increased from 979 to 1,020 minutes, exceeding the 290 minute standard in the NQ&R Code by 730 minutes. Western Power cited the severity of storm events and pole top fires as the primary causes of the increase.

In the Rural areas supplied by Horizon Power, the average length of interruptions rose slightly, from 318 to 330 minutes, or 40 minutes above the NQ&R Code standard (290 minutes).

[8] Urban areas include the Perth metropolitan area (excluding the CBD), Albany, Bunbury, Geraldton, Kalgoorlie and Mandurah.

[9] Rural areas are all areas of the State other than the Perth CBD and Urban areas.

[10] The NQ&R Code measures the average length of interruption over a four year period.

[11] This exceeded the 160 minute standard set in the NQ&R Code by 183 minutes, due to the removal of the 2010 data (471 minutes) from the four-year average.

Rottnest Island Authority was the only distributor to meet the 290 minute standard in 2014. The average length of interruptions was 62 minutes, a six year low. The relatively small size of the distribution system is likely to be a significant factor in its interruption performance.

2002 SCONRRR Framework

As mentioned above, the measurement of interruptions under the 2002 SCONRRR Framework provides more information about the cause(s) of supply interruptions. Under the 2002 SCONRRR Framework, the distributors separately report the overall and normalised length of interruptions. The overall interruptions measure is the same as that reported under the NQ&R Code, while the normalised interruptions measures the unplanned interruptions caused by events beyond the reasonable control of the distributor. The normalisation process also removes days where the duration of interruptions significantly exceed the long-run average performance of the network, as these interruptions are likely to be caused by one-off major events.

The length of supply interruptions caused by network failures fell in all areas, other than the Perth CBD…

Comparing the normalised SAIDI on the Western Power system in 2013 and 2014 shows that the average customer minutes off supply on most parts of their system was almost unchanged, with the exception of the Perth CBD, where there was an increase from 8 minutes to 18 minutes of interruption. Horizon Power reported an improved performance for all three feeder categories (Urban, Short Rural and Long Rural). The normalisation process removed all of the SAIDI on the Rottnest Island Authority distribution network because the interruptions had been caused by generation faults.

Gas Distributors

Gas customers experiencing long supply interruptions has increased…

ATCO was the only distributor to experience reportable interruptions on its distribution systems during 2014. A total of 1,534 customer premises had experienced a supply interruption that exceeded 12 hours continuously, up from 640 premises in 2013. ATCO commented that the interruptions were the result of third party damage to infrastructure.[12]

In 2014, ATCO reported that a customer had experienced more than five supply interruptions during the reporting year. This is the first time that a distributor has reported five or more interruptions of supply to a customer since reporting commenced in 2007.

[12] ATCO reported that there were two major events involving third party damage to its infrastructure that caused interruptions to a total of 1,212 customer premises.

Complaints

Electricity Distributors

Electricity distributors are required to report on two distinct complaints categories: technical quality of service (**QoS**) complaints under the NQ&R Code, and customer service complaints under the Electricity Customer Code.[13]

The number of quality of service complaints received by Western Power rose during 2014…

Horizon Power and Western Power were the only distributors that received QoS complaints in 2014. Compared with 2013, the number of QoS complaints received by Horizon Power in 2014 was almost unchanged, while Western Power reported a 53.9% increase in complaints. The majority of the QoS complaints received by Western Power in 2014 were related to issues that did not fall into any of the seven defined QoS categories (70.6%), followed by low voltage complaints (17.2%).

Complaints related to customer service and administrative issues fell…

Compared to 2013, the number of complaints received by Horizon Power relating to Electricity Customer Code matters fell by 38.0% in 2014 (down from 469 to 291). Administrative and customer service complaints accounted for most of the reduction. There was a peak in complaints during 2013 as Horizon Power experienced problems after bringing its metering services back in-house during 2013. The problems were resolved just before the start of the 2014 reporting year.

Western Power reported a further reduction in complaints related to Electricity Customer Code matters during 2014, reaching a record low of 547 complaints.

Horizon Power's complaint resolution performance improved in 2014…

Horizon Power resolved 62% of the complaints it received within 15 business days, up from 55% in 2013. Horizon Power stated that the lower complaint resolution performance in 2013 was the result of a large increase in complaints; however, while the volume of complaints has fallen by 38% in 2014, there has not been a commensurate improvement in complaint resolution performance.

Western Power's complaint resolution performance in 2014 was unchanged from the previous year; 78% of complaints were resolved within 15 business days.

Gas Distributors

Complaint reporting obligations for gas distributors are set out in the Gas Manual,[14] which covers supply quality and reliability, customer service and network charges and costs.

[13] *Code of Conduct for the Supply of Electricity to Small Use Customers*.

[14] The Authority's *Gas Compliance Reporting Manual*. The manual incorporates complaints reporting obligations in the *Compendium of Gas Customer Licence Obligations*, which is the equivalent document to the Electricity Customer Code.

In 2014, ATCO was the only distributor to receive complaints. Of the 25 complaints received, 40.0% related to reliability of supply and 24.0% related to connection and (network) augmentation issues.

Call Centre Performance

Electricity Distributors

Calls received by electricity distributor call centres were lower in 2014…

Between 2013 and 2014, the total volume of calls to the Horizon Power call centre fell by 86.0%. 2014 is the first year that Horizon Power has been able to separate distribution calls from retail calls.[15] All three call centre performance measures[16] for the separated distribution calls in 2014 were worse than for the combined retail and distribution calls in 2013. Horizon Power has attributed the worse performance to the high level of calls received during, and immediately after Cyclone Christine in December 2013.

Calls to the Rottnest Island Authority call centre in 2014 were 21.4% lower than the previous year. There was an improvement in the percentage of calls answered within 30 seconds, up from 81.2% in 2013 to 90.8% in 2014.

Calls to the Western Power call centre in 2014 were 10.9% lower than in 2013. The percentage of calls answered within 30 seconds reached a six year high of 82.9%, while the percentage of unanswered calls fell to a six year low of 4.8%.

Gas Distributors

Calls received by gas distributor call centres were higher in 2014…

Between 2013 and 2014, the total volume of calls to gas distributor call centres increased by 8.8% (from 287,643 to 313,086 calls); calls to ATCO increased by 15.6%, while calls to Wesfarmers increased by 6.8%.

Compared to 2013, ATCO reported modest improvements in the three call centre performance measures, while Wesfarmers reported a slight deterioration in performance.

Service Standard Payments

Total payments for long supply interruptions were lower in 2014…

The number of payments made by Western Power for supply interruptions exceeding 12 hours in duration fell by 68.1% (down from 47,523 payments in 2013 to 15,166 payments in 2014). Western Power had previously explained that 38,659 of the payments processed in 2013 related to the storms in June 2012, which were processed and paid in 2013.

[15] The Horizon Power call centre handles calls for their retail and distribution businesses. In previous years, Horizon Power was unable to separate the calls for each business.

[16] The three measures are: the percentage of calls answered within 30 seconds, the average time before a call is answered, and the percentage of abandoned calls.

Horizon Power made 89 payments for supply interruptions exceeding 12 hours in duration during 2014, up from 34 payments in 2013. The majority of the payments related to outages caused by Cyclone Christine in December 2013.

2014 is the first year that Western Power has reported making payments for wrongful disconnection, making 14 payments to customers.

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Purpose of this Report

The Economic Regulation ERA (**ERA**) is the independent economic regulator for Western Australia.

In its regulatory role, the ERA assesses the terms and conditions, including prices, offered by owners of monopoly infrastructure to third parties in the gas, electricity and rail industries. It also licenses providers of gas, electricity and water services and monitors compliance with licensing conditions and other related regulatory obligations. The ERA also has a range of responsibilities in gas retailing and surveillance of the State's wholesale electricity market.

This is the sixth annual report that examines the performance of electricity distributors and the fifth annual report that examines the performance of gas distributors who supply small use customers in Western Australia that has been published by the ERA.

The purpose of this report is to bring transparency and accountability to the performance of energy distribution[17] businesses (electricity and gas) who supply small use customers (see below) and to benchmark, where possible, performance against similar businesses in other energy markets.

This report focuses on the performance data provided by energy distributors in relation to:

- All distributors:
  - Customer Connections: information about the total number of connections on the distribution network and the proportion of new connections that have been established by the distributor outside the prescribed time frames.
  - Customer Service: information about customer satisfaction with the service provided by the distributor as measured by level of complaints and customer contact centre responsiveness.
  - Network Reliability: information about the frequency and duration of supply interruptions on the distribution network.
  - Compensation Payments / Guaranteed Service Level Payments: information about the number of payments made by electricity distributors for failing to meet the service standards prescribed in either the *Code of Conduct for the Supply of Electricity to Small Use Customers* (**Electricity Customer Code**) and the Electricity Industry (Network Quality and Reliability of Supply) Code 2005 (**NQ&R Code**), and payments made by the ATCO Gas Australia under their access arrangement.[18]
- Electricity distributors only:
  - Street Lighting: measures the proportion of faulty street lights that are repaired by a distributor within the prescribed standards.

[17] Electricity distribution licensees, electricity integrated regional licensees who distribute to small use customers and gas distribution licensees.

[18] ATCO Gas Networks is the only gas distributor that is covered by a service standard payment framework, which forms part of their gas access arrangement.

- Gas distributors only:
  - Gas Consumption: information about the amount of gas consumed by customers and the level of unaccounted for gas.
  - Leaks: information about the number and type of leaks on the distribution network.

Appendix 8 provides further background information about energy distribution in Western Australia, while Appendix 9 provides an overview of the development of the Western Australian energy market.

Energy Distribution Market Information

This section of the report looks at the energy distribution market as measured by the number of distributors who have small use customers connected to their distribution systems and the number of customers that are connected to those systems. The remainder of this section provides information about:

- licensed electricity and gas distributors;
- distributors who are distributing electricity or gas to small use customers; and
- the number of small use electricity and gas customer connections.

Energy Distributors

The number of licensed electricity and gas distributors has remained almost unchanged since 2006. Table 1 details the number of licensed electricity and gas distributors during the six years ending 30 June 2014.

Electricity

When the *Electricity Industry Act 2004* (**Electricity Act**) commenced in 2005, existing retailers were required to obtain a licence from the ERA by 30 June 2006. The majority of the licensed electricity distributors who are currently active in the market were granted a licence in 2005 or 2006. Between 1 July 2006 and 30 June 2013, the total number of licences has fallen from eight to six following EDL NGD (WA) and Central Norseman Gold Corporation surrendering their distribution licences in 2010.[19]

Table 1: Number of licensed distributors

	2009	2010	2011	2012	2013	2014
Electricity						
Licensed Distributors	8	6	6	6	6	6
Distributing to small use customers	3	3	3	3	3	3
Gas						
Licensed Distributors[20]	3	3	3	3	3	3

The number of electricity licences to distribute electricity to small use customers has remained unchanged since deregulation in 2005. The three distributors supplying small use customers are: Horizon Power, Rottnest Island Authority and Western Power.

Western Power operates the largest distribution system in the State, called the South West Interconnected Network (**SWIN**) that supplies the coastal area from Kalbarri to Bremer Bay and the Goldfields.

[19] The Electricity Industry Exemption Amendment Order 2009 granted exemptions from the requirement to hold a distribution licence to EDL NGD (WA) and Central Norseman Gold Corporation.

[20] The licensing scheme in Part 2A of the *Energy Coordination Act 1994* only covers distribution systems that supply small use customers.

Horizon Power operates the NWIS[21] and 35 islanded distribution systems in regional towns and remote communities across the State.[22]

Rottnest Island Authority operates the distribution system on Rottnest Island, which is an "A class" nature reserve lying 15km off the coast to the west of Fremantle.

Gas

The ERA took over responsibility for licensing gas retailers from the Office of Energy[23] in 2005. At that time there were three licensed gas distributors: AlintaGas Networks, Wesfarmers Kleenheat Gas (**Wesfarmers**) and WorleyParsons Asset Management (**WorleyParsons**).[24] Between 1 July 2006 and 30 June 2013, one new distribution licence was issued to Origin Energy (in June 2008). Origin Energy subsequently surrendered its licence in June 2010.

The natural gas distribution systems supplying the coastal area from Geraldton to Busselton and Kalgoorlie, and the distribution system that supplies LPG[25] in Albany that were operated by AlintaGas Networks are now operated by ATCO Gas Australia Pty Ltd (**ATCO**).[26]

Wesfarmers operates three gas distribution systems that supply LPG in Leinster, Margaret River and Oyster Harbour (near Albany).

[21] The interconnected system located in the Pilbara region of the State that is supplied by generation plants in Dampier, Port Hedland and Cape Lambert.

[22] Network Quality and Reliability of Supply Code – 2013/14 Performance Report, page 13, accessed on the Horizon Power website on 8 October 2014.

[23] The responsibilities of the Office of Energy are now undertaken by the Department of Finance's Public Utilities Office.

[24] Now Esperance Power Station Pty Ltd.

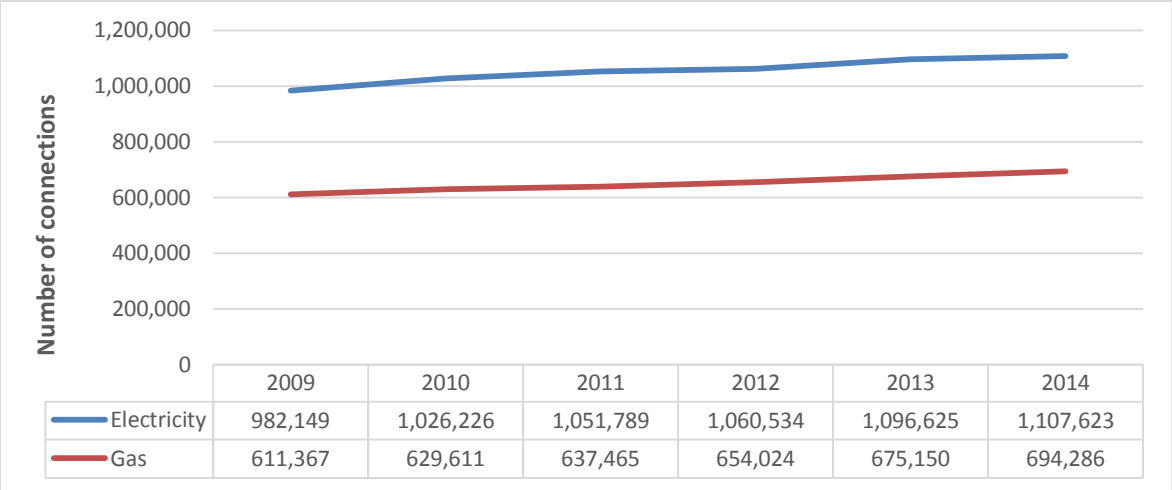
[25] Liquefied Petroleum Gas.

[26] These distribution systems were previously owned and operated by AlintaGas Networks.

Customer Connections

Figure 1 details the total number of small use customer connections on electricity and gas distribution systems in the State. During 2014, the state-wide number of electricity customer connections increased by 1.0% and the state-wide number of gas customer connections increased by 2.8%. Over the past six years, the average annual increase in customer connections was 2.4% for electricity and 2.6% for gas.

Figure 1: Small use customer connections on electricity and gas distribution systems



	2009	2010	2011	2012	2013	2014
Electricity	982,149	1,026,226	1,051,789	1,060,534	1,096,625	1,107,623
Gas	611,367	629,611	637,465	654,024	675,150	694,286

Connections on electricity distribution systems

Table 2 details the number of customer connections on each electricity distributor's system. Western Power, who operates the SWIN, accounts for 95.8% of the total state-wide customer connections.

During 2014, the number of customer connections on the Western Power system (SWIN) increased by 1.0%. The number of customer connections on the Horizon Power systems increased by 1.6%, while the number of connections on the Rottnest Island Authority distribution system has remained unchanged.

Table 2: Small use electricity connections by distributor

Distributor	2009	2010	2011	2012	2013	2014
Horizon Power	39,577	41,143	43,181	44,328	45,866	46,582
Rottnest Island Authority	191[27]	83	83	527[28]	527	527
Western Power	942,381	985,000	1,008,525	1,015,679	1,050,232	1,060,588
State Total	**982,149**	**1,026,226**	**1,051,789**	**1,060,534**	**1,096,625**	**1,107,623**

Table 3 details the number of new connections established by electricity distributors in 2013 and 2014. The total number of new connections established on electricity distribution systems during 2014 was 22.5% higher than in 2013, comprising a 16.5% increase in new connections established by Horizon Power and a 23.1% increase in new connections established by Western Power.

[27] Rottnest Island Authority commented that the 2008/09 figure included all connections on the distribution system, not just small use connections.

[28] For 2011/12, Rottnest Island Authority has, for the first time, included multi-unit dwellings and holiday accommodation in its no. of electricity connections.

Table 3: New connections on electricity distribution systems

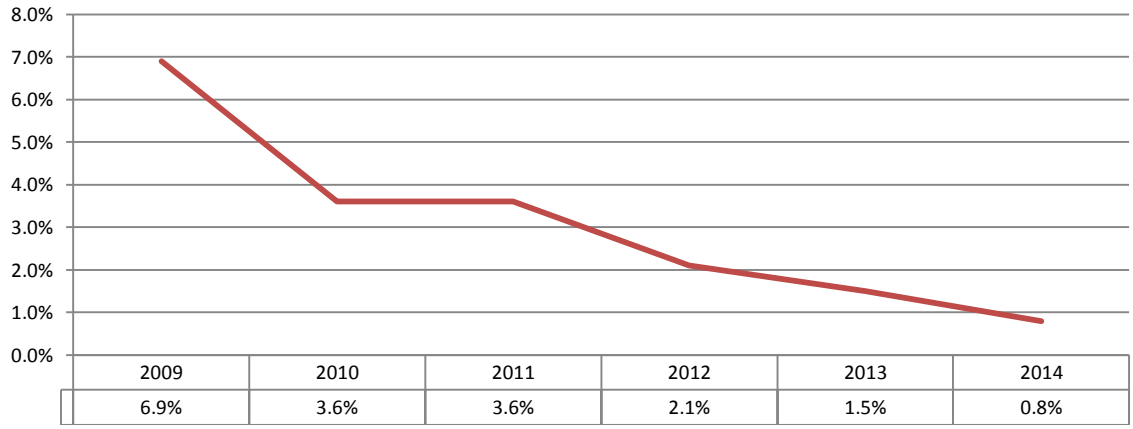
Distributor	2013			2014		
	Number of new connections	Connections not on time	% of connections not on time	Number of new connections	Connections not on time	% of connections not on time
Horizon Power	2,401	15	0.6	2,797	22	0.3
Rottnest Island Authority	0	-	-	0	-	-
Western Power	23,994	361	1.5	29,532	223	0.8
State Total	**26,395**	**376**	**-**	**32,329**	**245**	**0.8**

Comparing the number of new connections provided by Horizon Power and Western Power during 2014 with the net increase in the number of total connections on these distribution systems between 2013 and 2014 (Table 2) shows that the latter is less than the number of new connections provided. There are a number of reasons for the differences, the most likely being:

- The new connections data includes those premises fitted with a meter type that is likely to supply a small use customer but, when they are energised, a proportion of these premises then go on to consume more than 160MWh per annum. This then excludes these connections from the total connections data.
- Some of the new connections established each year do not begin to consume electricity until after the reporting period.

The *Electricity Industry (Obligation to Connect) Regulations 2005* prescribe the conditions for, and the time frames associated with, establishing a connection to an electricity distribution system for a small use customer. Table 3 shows that Western Power's on time delivery of new connections in 2014 was significantly better than that achieved in 2013. Figure 2 shows that Western Power's on-time connection performance in 2014 reached a six year high, 99.2% of connections were on time.

Figure 2: Percentage of late connections established by Western Power



Connections on gas distribution systems

Table 4 shows the number of small use customer connections on each gas distributor's system. ATCO is the largest gas distributor in the State, operating 99.81% of total gas connections in 2014, which is unchanged from the preceding two years.

During 2014, the number of customer connections on the ATCO systems increased by 2.8%, compared to 2013. The number of customer connections on the Wesfarmers and Esperance Power Station distribution systems increased by 1.7% and 3.0% respectively.

Table 4: Small use gas connections by distributor

Distributor	2009	2010	2011	2012	2013	2014
ATCO	610,294	628,537	636,323	652,808	673,878	692,988
Esperance Power Station	242	266	280	313	332	342
Wesfarmers	831	808	862	903	940	956
State Total	**611,367**	**629,611**	**637,465**	**654,024**	**675,150**	**694,286**

Table 5 shows the number of connections that were not provided in a time agreed with the customer. ATCO was the only distributor to report late connections, which represented a very small percentage of the total new connections.

Table 5: New connections on gas distribution networks

	2013			2014		
Distributor	Number of new connections	Connections not on time	% of connections not on time	Number of new connections	Connections not on time	% of connections not on time
ATCO	15,423	2	0.01	20,273	2	0.01
Wesfarmers	37	0	0.0	15	0	0
Esperance Power Station	3	0	0.0	8	0	0
State Total	**15,463**	**2**	**-**	**20296**	**2**	**-**

Reconnections on electricity and gas distribution systems

Recent amendments to the Electricity Customer Code and the Gas Compendium require electricity distributors and gas distributors to report performance for reconnecting customer premises to supply in accordance with the relevant prescribed time frame.

The 2014 reconnection data can be found in Appendix 7, Table 45.

Distribution System Reliability

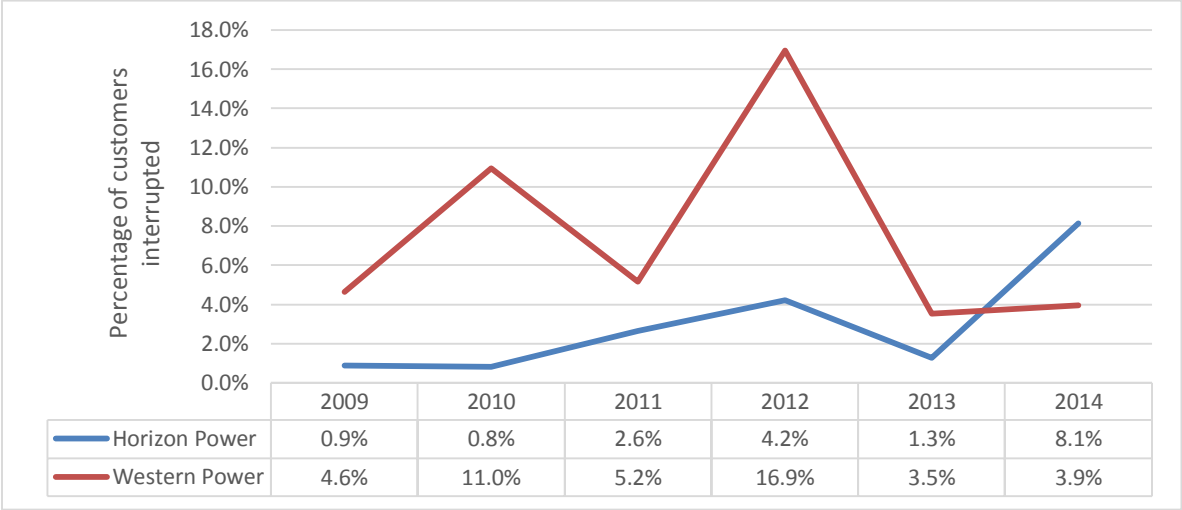
Electricity Supply Interruptions

Section 12 of the Electricity Industry (Network Quality and Reliability of Supply) Code 2005 (**NQ&R Code**) prescribes the following reporting standards in respect of interruptions to supply of small use customer premises:

- The number of customer premises that have experienced interruptions that exceed 12 hours continuously (**extended interruption**).
- The number of customer premises in the Perth CBD and Urban areas[29] that have experienced more than 9 interruptions during the reporting period.
- The number of customer premises in the other areas of the State (**Rural areas**) that have experienced more than 16 interruptions during the reporting period.

Figure 3 shows the number of customer premises on the Horizon Power and Western Power distribution systems that experienced an extended interruption over the past six years.[30]

Figure 3: Extended interruptions of Horizon Power and Western Power customers



	2009	2010	2011	2012	2013	2014
Horizon Power	0.9%	0.8%	2.6%	4.2%	1.3%	8.1%
Western Power	4.6%	11.0%	5.2%	16.9%	3.5%	3.9%

Comparing 2014 with 2013, the number of customer premises on the Western Power system that experienced an extended interruption rose by 12.7%. Western Power commented:

> The rise in extended interruptions on its network was predominantly due to storm activities.

The number of extended interruptions on the Horizon Power systems rose by 544.8% between 2013 and 2014. The Horizon Power interruption data shows a significant degree of variability, which reflects the relationship between severe weather events (cyclone activity and extreme heat) and system interruptions during each reporting year. Horizon Power commented that just over 92% of the extended interruptions in 2014 were attributable to

[29] The NQ&R Code defines urban areas as being the Perth metropolitan area (excluding the CBD), Albany, Bunbury, Geraldton, Kalgoorlie and Mandurah.

[30] Rottnest Island Authority is excluded from Figure 3 because the number of extended interruptions on their system over the past six years is small compared to Horizon Power and Western Power. The data for Rottnest Island Authority can be found in Appendix 7, Table 46.

Cyclone Christine, which passed through Karratha, Port Hedland and the inland Pilbara on 31 December 2013.

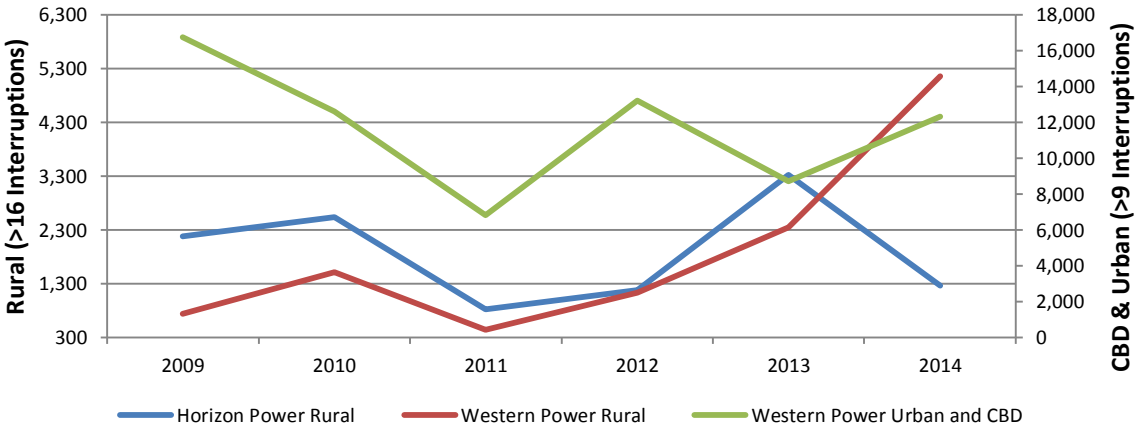
Rottnest Island Authority reported that there were no extended interruptions to customer premises during 2014.

Figure 4 details the number of multiple interruptions to customer premises in the Perth CBD and Urban areas, and in Rural areas. The Perth CBD and Urban areas are exclusively supplied by Western Power, whereas Horizon Power, Rottnest Island Authority and Western Power supply premises in Rural areas.[31]

Comparing 2014 with 2013, the number of customer premises in Perth CBD and Urban areas that experienced more than 9 supply interruptions increased by 41.6%, and the number of Rural area premises on the Western Power system that experienced more than 16 interruptions increased by 120.1%. Western Power attributed the increase in multiple interruptions to premises in Perth CBD and Urban areas to an increase in the number of planned interruptions to undertake network upgrade works, while the increase in multiple interruptions to premises in Rural areas was due to pole top fires and overhead equipment failures (mostly in the Mid-West and Wheatbelt regions).[32]

The number of Rural area premises on the Horizon Power systems that experienced more than 16 supply interruptions in 2014 (1,263) was much lower than in 2013 (3,327). Horizon Power commented that significant system improvements and automation strategies in Wyndham and Onslow power stations contributed to the overall improvement in performance.

Figure 4: Multiple supply interruptions on electricity distribution systems



Gas Supply Interruptions

The Gas Manual requires distributors to report on interruptions to supply of small use customer premises. The performance measures for these interruptions are:

[31] Rottnest Island Authority has been excluded from Figure 4 because they have not reported any multiple interruptions to customer premises over the past six years.

[32] Western Power, Annual Power Quality and Reliability Report, September 2014, page 14, accessed on the Western Power website on 8 October 2014.

- the number of customer connections that have experienced interruptions that exceed 12 hours continuously; and
- the number of customer connections that have experienced five or more interruptions during the reporting period.

These measures are similar to the performance measures applying to electricity distributors detailed above.

In 2014, ATCO was the only distributor to report customer experiencing five or more supply interruptions during the reporting year; a single customer was affected. This is the first time that a distributor has reported five or more interruptions of supply to a customer since reporting commenced seven years ago.

ATCO reported that 1,534 customers experienced a supply interruption that exceeded 12 hours continuously during 2014, up from 640 customers in 2013. ATCO commented that:

> There were 16 events in both the current and previous reporting periods that affected customers for more than 12 hours. Each of these events during the current period were caused by 3rd party damage, with 2 events being considered major and affecting 1,212 customers combined.

Electricity Distribution Network Reliability Performance (Network Quality and Reliability Code)

Schedule 1[33] of the NQ&R Code requires distributors to report on the following measures of system reliability for each discrete area of the State:

- average total length of all interruptions of supply to customer premises expressed in minutes (this measure divides the total length of network interruptions by the total number of customer premises connected to the network);
- average length of interruption of supply to customer premises expressed in minutes (this measure divides the total duration of interruptions by the total number of customer premises connected to the network that actually experienced a supply interruption);
- average number of interruptions of supply to customer premises (this measure divides the total number of network interruptions by the number of customer premises that actually experienced a supply interruption); and
- average percentage of time that electricity has been supplied to customer premises.

The values of the NQ&R Code reliability indices reported in this section do not exclude Major Event Days (**MED**),[34] in line with the requirements of the NQ&R Code. The approach taken in the NQ&R Code is unusual in that, by not excluding Major Event Days, the distributor reliability performance includes interruptions caused by factors that are generally outside the control of the distributor, such as third party action, severe storms and other natural disasters.

[33] Clauses 11 and 13 of Schedule 1 deal with network reliability.

[34] Standard IEEE 1366-2003 defines a Major Event Day as a day in which the system SAIDI exceeds a threshold value T_{med} minutes. T_{med} is calculated from a statistical analysis of the SAIDI data over a specified period of time to identify events that deviate significantly from the average performance of the network.

Clause 13(3) of the NQ&R Code defines the average value of interruptions as:

- the average of the interruptions for each year for the four years ending in the current reporting period; and
- the average of the four (annual) values.

This calculation gives an overall average over the most recent four year period and it is applied to the calculation of average length, and average frequency of interruptions.

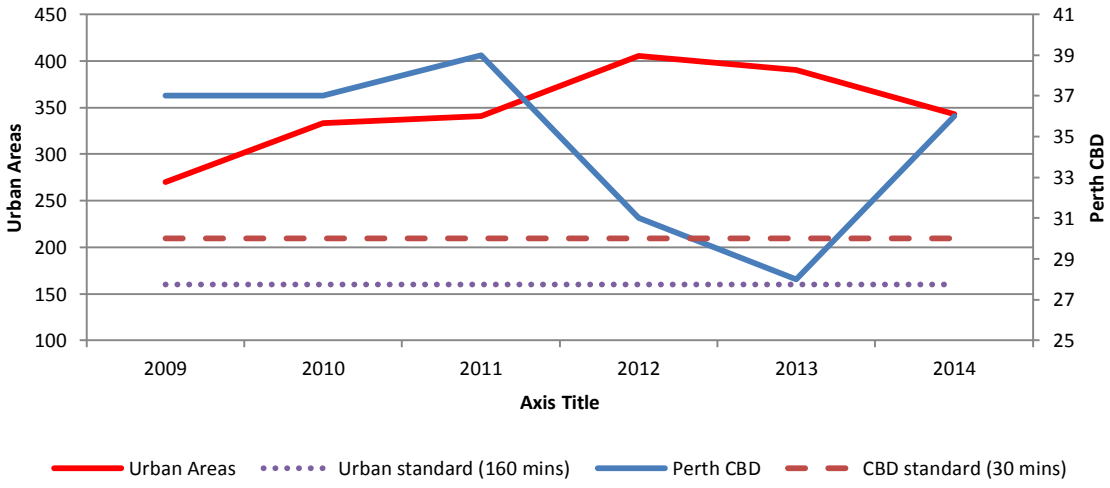
Table 6 details the standards for the average total length of interruptions to supply for each discrete area of the state prescribed in the NQ&R Code. The standards reflect the environmental, infrastructure and demographic factors that influence overall system reliability in each discrete area of the State.

Table 6: NQ&R Code standards for the average length of interruptions of supply (clause 13)

	The Perth CBD[35]	Urban areas (excluding Perth CBD)	Any other area of the State
Average total length of interruptions (minutes per annum)	**30**	**160**	**290**

System Reliability in the Perth CBD and Urban Areas

Figure 5: Average total duration of interruptions on Perth CBD and urban electricity distribution systems



Western Power is the only distributor that supplies customers in the Perth CBD. Figure 6 shows that the average total length of interruptions in the Perth CBD increased from 28 minutes in 2013, to 35 minutes in 2014, exceeding the NQ&R Code standard by five minutes. Western Power attributes the increase to the impact of underground cable failures and planned interruptions.[36]

Western Power is also the only electricity distributor supplying Urban areas. Figure 6 shows that the average total length of interruptions in Urban areas fell from 390 minutes in 2013 to 343 minutes in 2014, exceeding the NQ&R Code standard by 183 minutes. The reduction

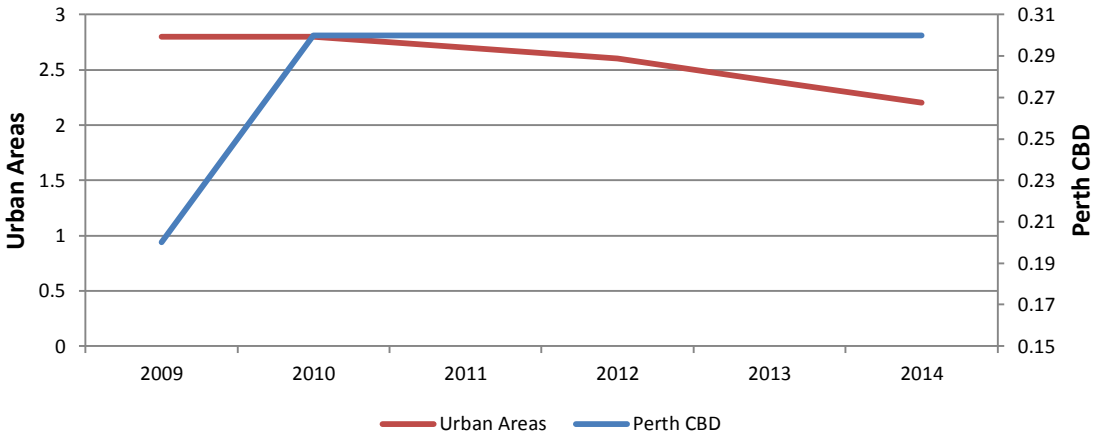
[35] The Perth CBD area is defined as the areas supplied from the Milligan Street Zone Substation or the Hay Street Zone Substation.

[36] Western Power, Annual Power Quality and Reliability Report, September 2014, page 18, accessed on the Western Power website on 9 October 2014.

in the total length of interruptions is due to the removal of the 2010 data (471 minutes) from the four-year average.

Figure 6 shows that the average frequency of supply interruptions experienced by customers in the Perth CBD (0.3) during 2014 was unchanged from the preceding four years, while the frequency of supply interruptions in Urban areas fell from 2.4 in 2013 to 2.2 in 2014.

Figure 6: Average frequency of interruptions on Perth CBD and urban electricity distribution systems



System Reliability in Other Areas of the State (including Isolated Systems)

All three distributors supply electricity to areas of the State outside of the CBD and Urban areas (**Rural areas**). Figure 7 details the average total duration of interruptions for each distributor in Rural areas.

Rottnest Island Authority is the only distributor that has met the 290 minute standard prescribed in the NQ&R Code; in 2014, the average duration of interruptions was 62 minutes, down from 76 minutes in 2013. Rottnest Island Authority commented that all of the 2014 interruptions were due to generator outages on the island.

During 2014, Horizon Power exceeded the 290 minute standard by 40 minutes, which was marginally higher than the 28 minutes recorded in 2013. This is the fourth consecutive year that Horizon Power has achieved a performance that is close to the standard. The same consistency is also visible in relation to the average frequency of interruptions (Figure 8), suggesting the overall performance of Horizon Power's networks has been relatively stable for the past four years.

The average duration of interruptions on Western Power's Rural area distribution system increased from 979 minutes in 2013 to 1,020 minutes in 2014, exceeding the 290 minute standard by 730 minutes. Over the same period, the average frequency of interruptions was almost unchanged (Figure 8), indicating the average length of each interruption event in 2014 was longer than in 2013. Western Power commented that:

> [...] the increase was predominantly due to an increase in the following factors […]:
>
> - the severity of storm events; and

- pole top fire activity.[37]

Figure 7: Average total duration of interruptions on electricity distribution systems in other areas of the State

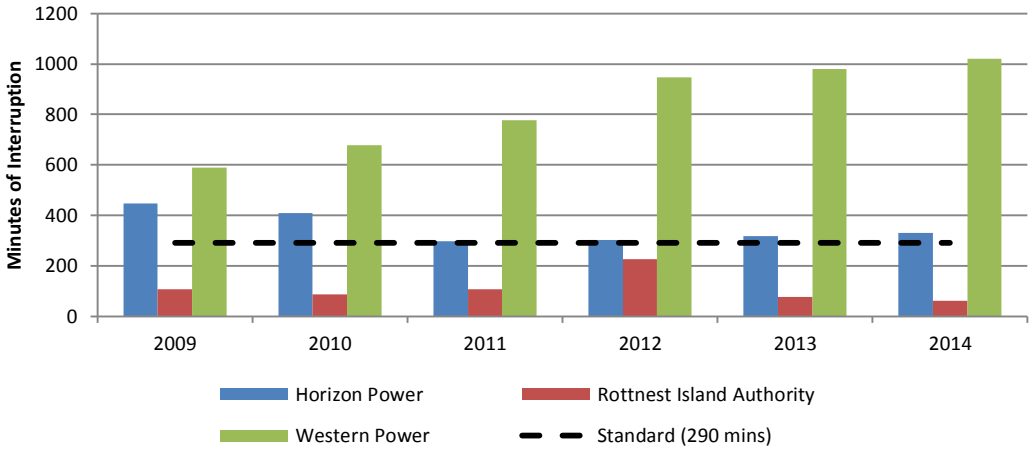
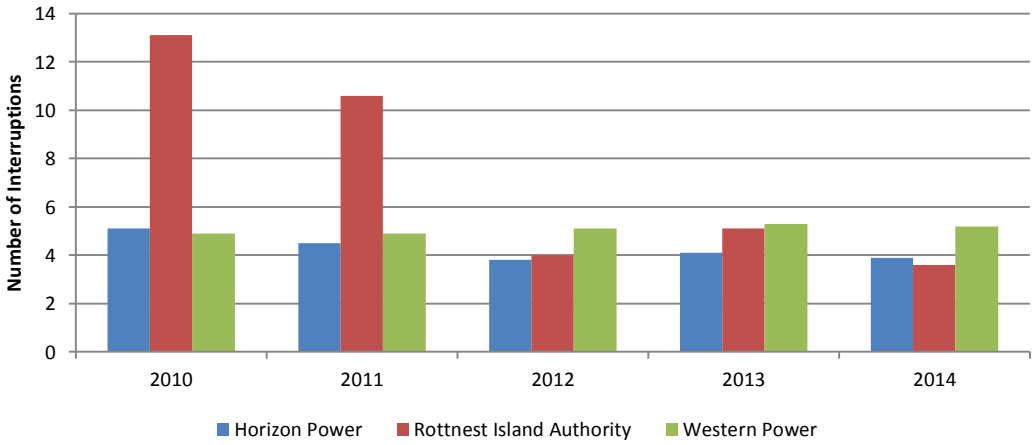


Figure 8: Average frequency of interruptions on electricity distribution systems in other areas of the State



Western Power has been reporting annual interruption data for isolated systems in Bremer Bay and Ravensthorpe to the ERA since 2010. In 2014, both townships were reconnected to the network, Ravensthorpe some 21 days into the reporting year, and Bremer Bay 69 days into the reporting year. Because of the relatively short portion of the reporting year that the two towns were isolated from the network, the interruption data is considered to be of limited use, and will not be reported in this report.

[37] Western Power, Annual Power Quality and Reliability Report, September 2014, page 20, accessed on the Western Power website on 9 October 2014.

Electricity Distribution System Reliability Performance (2002 SCONRRR Framework)

The 2002 SCONRRR[38] reliability performance reporting indicators are based on the definitions in standard IEEE 1366-2003.[39] Measures of supply reliability include:

- System Average Interruption Duration Index (**SAIDI**) – measures the total duration of supply interruption for the average customer on the network.
- System Average Interruption Frequency Index (**SAIFI**) – measures how often the average customer experiences a supply interruption.
- Customer Average Interruption Duration Index (**CAIDI**) – measures the total duration of supply interruption for those customers who have experienced an interruption during the reporting period.

The definition and calculation of SAIDI, SAIFI and CAIDI apply to sustained interruptions of supply. The 2002 SCONRRR Framework defines the sustained interruption threshold as being more than 1 minute.

The 2002 SCONRRR Framework also categorises the SAIDI, SAIFI and CAIDI measures into Overall, Distribution Network Planned, Distribution Network Unplanned and Normalised Distribution Network Unplanned.

Prior to 2010, the calculation of the Normalised Distribution Network Unplanned measures was based on the definition in the 2002 SCONRRR Framework, which excludes outages that were beyond the reasonable control of the distributor and any outage (irrespective of the cause) that contributes more than three minutes to the network SAIDI value.

In November 2009, the Australian Energy Regulator[40] adopted the method described in standard IEEE 1366 to calculate the daily threshold SAIDI value used to exclude interruptions. The IEEE method applies a statistical approach to calculate the SAIDI threshold for a Major Event Day (**MED**). The Normalised SAIDI then excludes all days during the reporting period where the daily SAIDI value exceeds the MED threshold.

The ERA considers it important that, where possible, there is consistency between the reliability performance measures applying to Western Australian distributors and the measures applying to distributors in other jurisdictions. Accordingly, the ERA has adopted the MED method to exclude unplanned interruptions from the Normalised Distribution Network Unplanned SAIDI, commencing from the 2010 reporting period.

The 2002 SCONRRR Framework applies the SAIDI, SAIFI and CAIDI reliability measures to the four classes of distribution network feeders that are described in Table 7.

[38] National Regulatory Reporting for Electricity Distribution and Retailing Businesses, Utility Regulators Forum Steering Committee on National Regulatory Reporting Requirement, March 2002.

[39] Standard IEEE 1366-2003 - Guide for Electric Power Distribution Reliability Indices, Institute for Electrical and Electronic Engineers.

[40] Electricity Distribution Network Service Providers, Service Target Performance Incentive Scheme, Australian Energy Regulator, November 2009 (see page 12 and Appendix D)

Table 7: Distribution feeder classifications (SCONRRR)

Description			
CBD[41]	Urban	Short Rural	Long Rural
A feeder supplying predominantly commercial, high rise buildings, supplied by a predominantly underground distribution network containing significant interconnection and redundancy compared to urban areas.	A feeder, which is not a CBD feeder, with actual maximum demand over the reporting period per total feeder route length greater than 0.3MVA/km.	A feeder, which is not a CBD or urban feeder, with a total feeder route length less than 200km.	A feeder, which is not a CBD or urban feeder, with a total feeder route length greater than 200km.

It is normal practice to set reliability targets that are more stringent for CBD and Urban feeders compared to Rural feeders. The more stringent standards for CBD and Urban feeders reflect the higher levels of interconnection and available reserved capacity that apply to the design of these networks.

Distributors are also required to record SAIDI, SAIFI and CAIDI for the Total Network. The Total Network measure is the weighted average of the reliability of each class of feeder, and can be used to track trends in overall distributor network reliability over time.

Two measures of SAIDI, SAIFI and CAIDI are presented in this section: Overall and Normalised Distribution Network - Unplanned. The 2002 SCONRRR[42] definitions of these two measures are:

- Overall Interruptions - includes all sustained interruptions including transmission, directed load shedding, planned and unplanned.
- Normalised Distribution Network - Unplanned Interruptions – excludes transmission outages, directed load shedding and unplanned outages where the daily SAIDI exceeds the MED threshold.

System Average Interruption Duration Index (SAIDI)

Table 8 shows the overall and normalised SAIDI values by feeder category for each distributor. As would be expected from the normalisation process (which excludes certain outages from the calculation of SAIDI), the values of overall SAIDI are higher than the normalised SAIDI for all categories of feeder.

Of particular note is the much higher values of normalised SAIDI for the long rural feeders (>200km long) compared to the short rural feeders operated by both Horizon Power and Western Power. The higher values of long rural feeder SAIDI are attributable to the relatively remote locations of these feeders and longer average time to repair faulty lines. The higher values of normalised SAIDI on long rural feeders have relatively little impact on the Total Network SAIDI for both Horizon Power and Western Power because long rural feeders represent a small proportion of the overall feeder population in their distribution systems.

[41] The Perth CBD area is defined as the areas supplied from the Milligan Street Zone Substation or the Hay Street Zone Substation.

[42] Table 2 (page 7) National Regulatory Reporting for Electricity Distribution and Retailing Businesses, Utility Regulators Forum, Steering Committee on National Regulatory Reporting Requirements, March 2002.

All of the SAIDI for the short rural feeders operated by Rottnest Island Authority was caused by generator outages on the island. Accordingly, the normalised SAIDI was zero for 2014.

Table 8: Overall and normalised SAIDI for each electricity distributor in 2014

Distributor	Overall Average Interruption Duration (minutes per annum)				
	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	350	N/A	510	290	819
Rottnest Island Authority	62	N/A	N/A	62	N/A
Western Power	389	40	214	518	1423
	Normalised Average Interruption Duration (minutes per annum)				
	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	158	N/A	83	151	542
Rottnest Island Authority	0	N/A	N/A	0	N/A
Western Power	172	18	107	171	673

N/A – No feeders of this type are operated by the distributor

Table 9 compares the normalised SAIDI values reported by distributors in 2013 and 2014. Total Network SAIDI on the Western Power network was almost unchanged between 2013 and 2014, while Total Network SAIDI on the Horizon Power fell by 21.8%, due to reductions in SAIDI on all three feeder classes, particularly Urban feeders. Horizon Power commented:

> As a result of the completion of the underground power project in South Hedland and parts of Karratha, some feeders have been reclassified from rural to urban and this has had a corresponding positive impact on restoration times. The number of incidents has remained constant, however there has been a significant improvement in restoration time.

The normalisation process removed all of the SAIDI on the Rottnest Island Authority network. Rottnest Island Authority reported that all of the unplanned outages on their network were caused by generator outages, which are excluded by the normalisation process.

Table 9: Comparison of normalised SAIDI for each electricity distributor in 2013 and 2014

	2013					2014				
Distributor	Total Network	CBD	Urban	Short Rural	Long Rural	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	202	N/A	133	184	781	158	N/A	83	151	542
Rottnest Island Authority	0	N/A	N/A	0	N/A	0	N/A	N/A	0	N/A
Western Power	175	8	103	181	685	172	18	107	171	673

N/A – No feeders of this type are operated by the distributor

System Average Interruption Frequency Index (SAIFI)

Table 10 details the overall and normalised SAIFI values by feeder category for each distributor. Because the SAIFI associated with the interruptions that are excluded from the calculation of normalised SAIDI in Table 8 are also excluded from the calculation of normalised SAIFI, the normalised SAIFI values in Table 10 are also generally less than the overall values. One notable exception is the Western Power CBD feeder SAIFI, both the overall and normalised values are 0.2, which indicates the majority of the interruptions on the CBD feeders were unplanned interruptions that did occur on a MED.

Table 10: Overall and normalised SAIFI for each distributor in 2014

	Overall Distribution network - Average Interruption Frequency (per annum)				
Distributor	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	4.0	N/A	3.4	3.9	7.1
Rottnest Island Authority	3.6	N/A	N/A	3.6	N/A
Western Power	2.5	0.2	1.7	3.1	6.9
	Normalised Distribution network - Average Interruption Frequency (per annum)				
	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	3.3	N/A	2.4	3.4	5.1
Rottnest Island Authority	0.0	N/A	N/A	0.0	N/A
Western Power	1.6	0.2	1.1	1.8	5.0

N/A – No feeders of this type are operated by the distributor

Table 11 compares the normalised SAIFI values reported by distributors in 2013 and 2014. Horizon Power reported a decrease in Long Rural SAIFI, which correlates with a similar decrease in Long Rural SAIDI (Table 9), and a slight increase in Urban SAIFI. Comparing Table 11 with Table 9 suggests that the decrease in Urban SAIDI is due to a reduction in the average length of each interruption that occurred in 2014: the number of interruptions has gone up while the total average length of interruptions has fallen.

Western Power reported a significant increase in CBD SAIFI; as mentioned earlier, almost all of the interruptions in 2014 were unplanned interruptions caused by underground cable failures.

Rottnest Island Authority reported zero SAIFI, which is consistent with the SAIDI result in Table 9.

Table 11: Comparison of normalised SAIFI for each electricity distributor in 2013 and 2014

	2013					2014				
Distributor	Total Network	CBD	Urban	Short Rural	Long Rural	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	3.4	N/A	2.3	3.5	6.0	3.3	N/A	2.4	3.4	5.1
Rottnest Island Authority	0.0	N/A	N/A	0.0	N/A	0.0	N/A	N/A	0.0	N/A
Western Power	1.8	0.03	1.2	2.2	4.9	1.6	0.2	1.1	1.8	5.0

N/A – No feeders of this type are operated by the distributor

Customer Average Interruption Duration Index (CAIDI)

Table 12 details the overall and normalised CAIDI values by feeder category for each distributor. The differences between the overall and normalised CAIDI values for each type of feeder are different to that of SAIDI and SAIFI values because SAIDI and SAIFI measure the effect of interruptions averaged over all the customers that are supplied by a feeder, whereas CAIDI measures the effect of interruptions only for those customers on a feeder whose supply was actually interrupted. Therefore, CAIDI is more representative of the actual experience of the customers who were interrupted than SAIDI.

Table 12: Overall and normalised CAIDI for each electricity distributor in 2014

	Overall Distribution Network - Average Interruption Duration (minutes per annum)

Distributor	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	88	N/A	150	74	116
Rottnest Island Authority	17	N/A	N/A	17	N/A
Western Power	156	162	125	167	206
	Normalised Distribution Network - Average Interruption Duration (minutes per annum)				
	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	47	N/A	35	44	106
Rottnest Island Authority	0.0	N/A	N/A	0.0	N/A
Western Power	106	93	95	93	135

N/A – No feeders of this type are operated by the distributor

Table 13 compares the normalised CAIDI values reported by distributors in 2013 and 2014. Horizon Power reported an across the board decrease in normalised CAIDI, which is consistent with the reduction in normalised SAIDI values for each class of feeder (Table 9).

Compared to 2013, the normalised CAIDI on the Western Power feeders in 2014 was higher than in 2014 for Urban and Short Rural feeders. The normalised CAIDI for CBD feeders decreased by 65.5%, while that for Long Rural feeders decreased by 2.9%.

In 2014, the CAIDI on the Rottnest Island Authority networks was zero, which corresponds to the zero SAIDI and SAIFI result discussed earlier.

Table 13: Comparison of normalised CAIDI for each electricity distributor in 2013 and 2014

	2013					2014				
Distributor	Total Network	CBD	Urban	Short Rural	Long Rural	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	59	N/A	58	52	129	47	N/A	35	44	106
Rottnest Island Authority	0.0	N/A	N/A	0.0	N/A	0.0	N/A	N/A	0.0	N/A
Western Power	100	270	89	84	139	106	93	95	93	135

N/A – No feeders of this type are operated by the distributor

Complaints

Electricity Distributors

Complaints Recorded under the SCONRRR 2002 Framework

Table 14 details of the technical quality of service (**QoS**) complaints that have been received by distributors during 2014.

Rottnest Island Authority did not receive any QoS complaints during 2014. A significant proportion of the complaints received by both Horizon Power and Western Power were categorised as 'other' (technical matters not falling into the other complaint categories), which is consistent with previous years.

Table 14: Technical Quality of Service (QoS) complaints received in 2014

	Horizon Power	Western Power
Total number of technical QoS complaints	31	2,017
Complaint categories		
Low supply voltage complaints	17	346
Voltage dip complaints	0	23
Voltage swell complaints	0	6
Voltage spike complaints	0	6
Waveform distortion complaints	0	0
TV or radio interference complaints	0	212
Noise from appliances complaints	0	0
Other complaints	14	1,424

Table 15 details the number of QoS complaints received by distributors over the past six years. It can be seen that the total number of QoS complaints received by distributors varies year on year. While the number of complaints received by Horizon Power has been relatively steady of the past five years, the number of complaints received by Western Power in 2014 was significantly higher than the previous two years. Comparing the breakdown of complaints in Table 14 with the complaints reported in 2013[43] shows that most of the increase in the overall number of complaints received by Western Power is due to increases in low voltage supply complaints (up from 138 in 2013) and other complaints (up from 949 in 2013).

Table 15: Technical Quality of Service (QoS) complaints

Distributor	2009	2010	2011	2012	2013	2014
Horizon Power	63	44	29	23	30	31
Rottnest Island Authority	1	0	0	0	0	0
Western Power	1,646	2,068	2,158	1,307	1,311	2,017
State Total	**1,710**	**2,112**	**2,187**	**1,330**	**1,341**	**2,048**

[43] Economic Regulation Authority, 2013 Annual Performance Report – Energy Distributors, Table 14.

The 2002 SCONRRR Framework requires distributors to also report on the likely cause of the problems that led to a technical QoS complaint. Table 16 provides a breakdown of the cause of the technical QoS complaints received by Horizon Power and Western Power in 2014. Horizon Power reported that 61.3% of the QoS complaints it received were due to "network equipment faulty". Western Power reported that they were unable to identify the cause of 55.4% of their QoS complaints, 18.6% of complaints were caused by "network equipment faulty" and a further 12.9% were caused by "network limitations".

Table 16: Likely cause of technical Quality of Service (QoS) complaints in 2013

Likely cause of technical QoS complaints	Horizon Power	Western Power
Network equipment faulty	19	375
Network interference by network service provider equipment	0	15
Network interference by another customer	0	1
Network limitation	0	260
Customer internal problem	0	37
No problem identified	1	1,118
Environmental	9	2
Other	2	209

Complaints Recorded under the Electricity Customer Code

The customer complaint categories in the Electricity Customer Code exclude complaints related to network quality and reliability, which are dealt with by the NQ&R Code and the 2002 SCONRRR Framework.

Rottnest Island Authority reported that it did not receive any complaints under the Electricity Customer Code during the six years to 2014.

Table 17: Complaints received by electricity distributors (Electricity Customer Code)

	2009	2010	2011	2012	2013	2014
Horizon Power[44]						
Administrative and customer service complaints	77	65	58	86	414	274
Other complaints	72	113	79	51	55	17
Total complaints	**149**	**178**	**137**	**137**	**469**	**291**
Western Power						
Administrative and customer service complaints	253	181	101	33	25	41
Other complaints	2,592	2,514	1,637	679	639	506
Total complaints	**2,845**	**2,695**	**1,738**	**712**	**664**	**547**

Table 17 details the complaints received by Horizon Power and Western Power over the past six years. In 2014, Western Power received a record low number of complaints; the majority of the complaints related to matters other than administrative and customer service. The number of complaints received by Horizon Power in 2014 was 38.0% lower than in

[44] The Horizon Power complaints data for 2013 and 2014 is the combined total of complaints about their retail and distribution services, following a change of call centre service provider.

2013, the result of a corresponding fall in the number of administrative and customer service complaints. Horizon Power attributed the large increase in complaints received during 2013 to problems that followed in-sourcing their metering field services, which were resolved before the 2014 reporting year commenced.

Complaints Resolution Performance

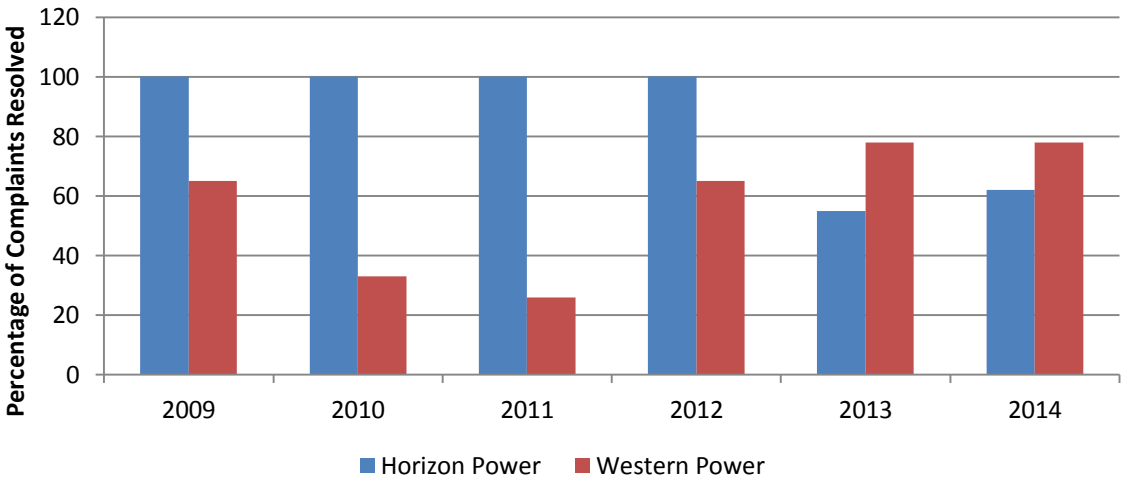
Electricity distributors are also required to report on their complaint resolution performance, which is measured as the percentage of complaints received that they conclude within 15 business days of receipt. Figure 9 shows the complaint resolution performance of Horizon Power and Western Power for the past six years.

Up until 2012, Horizon Power resolved 100% of the complaints within 15 business days, but in 2013 this fell to 55%, and then improved to 62% in 2014. The drop in complaint resolution performance in 2013 was attributed to the large increase in complaints related to the metering issues mentioned in the previous section. In 2014, it is notable that a 38% reduction in the level of complaints received has not translated to a commensurate improvement in complaint resolution performance. Horizon Power commented:

> All complaints were administered by the timeframes advised by the code [Electricity Customer Code]. Complaints are not completed in the system until acceptance of the resolution is attained by the customer. All customers had received advice of the proposed resolution by 15 business days.

In 2014, the percentage of complaints resolved within 15 business days by Western Power was unchanged from that in 2013 (78%).

Figure 9: Electricity distributor complaint resolution performance



Gas distributors

The Gas Manual incorporates the complaint reporting obligations under the *Compendium of Gas Customer Licence Obligations* (**Gas Compendium**), the complaint categories in the SCONRRR 2002 Framework and regulatory reporting frameworks in other jurisdictions.

Table 18 details the number of complaints received by gas distributors over the past six years. Both Esperance Power Station and Wesfarmers did not receive any complaints in 2014.

Comparing Table 18 with Table 15 and Table 17 shows that the level of complaints received by ATCO was much smaller than those received by electricity distributors.

In relation to recording complaints, ATCO commented that:

> The 2013 Performance Audit [of ATCO's gas distribution licence] recommended that [ATCO's] complaint statistics should include those complaints that are resolved at first contact by call centre employees. [ATCO] is implementing a system enhancement to allow for this data to be captured, which will commence operation in January 2015. It is anticipated that the complaint statistic will increase as a result of capturing complaints resolved at first contact.

Table 18: Complaints received by gas distributors

Distributor	2009	2010	2011	2012	2013	2014
ATCO	30	38	35	36	25	25
Esperance Power Station	0	1	0	0	0	0
Wesfarmers	0	0	0	2	0	0
State Total	**30**	**39**	**35**	**38**	**25**	**25**

Table 19 categorises the complaints received by ATCO in 2014, 40% of complaints relate to "reliability of supply" followed by "connection and augmentation" (24%).

Table 19: Categorisation of complaints received by ATCO in 2014

Complaint Category	ATCO
Total Number of Complaints	25
Complaint category	
Connection and Augmentation	6
Reliability of Supply	10
Quality of Supply	5
Network Charges and Costs	2
Administrative Processes or Customer Service	0
Other	2

Call Centre Performance

The majority of a customer's interaction with their distributor is by telephone. Accordingly, it is important that distributors are able to provide ready telephone access for customers to contact them about service related issues during business hours. The larger distributors operate call centres which employ multiple customer service agents to handle customer enquiries and complaints.

Smaller distributors offer a simpler telephone service, which is often based on the customer calling their switchboard, which then connects them to the appropriate contact person.

The distributors that have a call centre to handle customer calls are able to record a range of information about the incoming calls, including performance statistics. Some of the call centres operated by distributors handle other calls in addition to calls about the electricity or gas distribution service. Unless the retailer can separately record the statistics for the distribution calls from all other calls, the call centre performance reported for distribution customers is based on the overall performance of the call centre.

Measuring the telephone service provided by the distributor helps to assess the customer experience when they contact their distributor. There are three key responsiveness measures that are uniformly measured across service industries:

- percentage of calls answered within 30 seconds;
- average duration before a call is answered, measured in seconds; and
- percentage of unanswered calls.

The remainder of this section presents electricity and gas distribution call centre performance in relation to these responsiveness measures. If the distributor call centre uses Interactive Voice Response equipment[45] to handle calls then the responsiveness measures only apply to those calls where the customer has indicated that they wish to speak to an operator.

Electricity Distributor Call Centres

All three electricity distributors operate call centres: Horizon Power and Rottnest Island Authority outsource their call centres to other service providers, while Western Power operates an in-house call centre. The Rottnest Island Authority call centre handles calls for both retail and distribution customers without distinguishing retail calls from distribution calls, and also handles calls related to other areas of their business.

Table 20 details the volume of calls to electricity distributor call centres over the past six years. The volume of calls to Horizon Power's call centre was much lower in 2014 than previous years because, for the first time, they have been able to separately report calls about distribution issues. Prior to 2014, reported call volumes included calls related to both their distribution and retail businesses.

Comparing 2014 with 2013, the volume of calls to Rottnest Island Authority's call centre fell by 21.4%, while the volume of calls to Western Power's call centre fell by 10.9%.

[45] Interactive Voice Response equipment allows a call centre telephone system to detect voice and keypad tone signals and then respond with pre-recorded or dynamically generated audio to further direct callers to the service they require.

Table 20: Volume of calls to electricity distributor call centres

	2009	2010	2011	2012	2013	2014
Horizon Power	94,018	89,200[46]	71,215	82,587	103,301	14,437
Rottnest Island Authority	N/A	1,027	5,272	5,840	6,173	4,850
Western Power	373,761	538,903	495,626	531,554	510,935	455,368
State Total	**467,779**	**629,130**	**572,149**	**619,981**	**620,409**	**474,655**

In order to assess the overall performance of the distributor's call centres it is prudent to examine all three call centre performance measures together. Figures 10, 11 and 12 show the distributor's performance over the six years to 2014.

Comparing call centre performance in 2014 with that of 2013:

- There was an overall deterioration in Horizon Power's performance: the percentage of calls answered within 30 seconds fell to a six year low (69.0%), the average duration before a call is answered increased to 40 seconds and the percentage of unanswered calls also increased (up from 2.6% to 15.1%). It should be noted that this is the first year that Horizon Power has been able to separately report distribution call performance, the performance in previous years has been based on the combination of retail and distribution calls. Horizon Power commented:

  > The general call centre performance (excluding distribution/ faults) was 81.5% answered within 30 seconds and 2% Unanswered. The 69% was for the fault call line performance and the calls within 30 second performance was attributed to avalanche calls during Cyclone Christine. The unanswered call volume was attributed to customers abandoning the call after receiving the outage message from the Interactive Voice Response (IVR). It needs to be noted that this information on fault call centre performance was not available in previous years.

- Rottnest Island Authority reported a mixed result: the percentage of calls answered within 30 seconds improved to 90.8%, after reaching a five year low of 81.2% in 2013, while the average duration before a call is answered was relatively unchanged, and the percentage of unanswered calls increased to 2.7%.
- Western Power reported improved performance: the percentage of calls answered within 30 seconds reached a new six year high (82.9%), the average duration before a call is answered was relatively unchanged at 14 seconds and the percentage of unanswered calls also improved to reach a six year low of 4.8%.

[46] This is the combined total of both retail and distribution calls.

Figure 10: Percentage of electricity distributor calls answered within 30 seconds

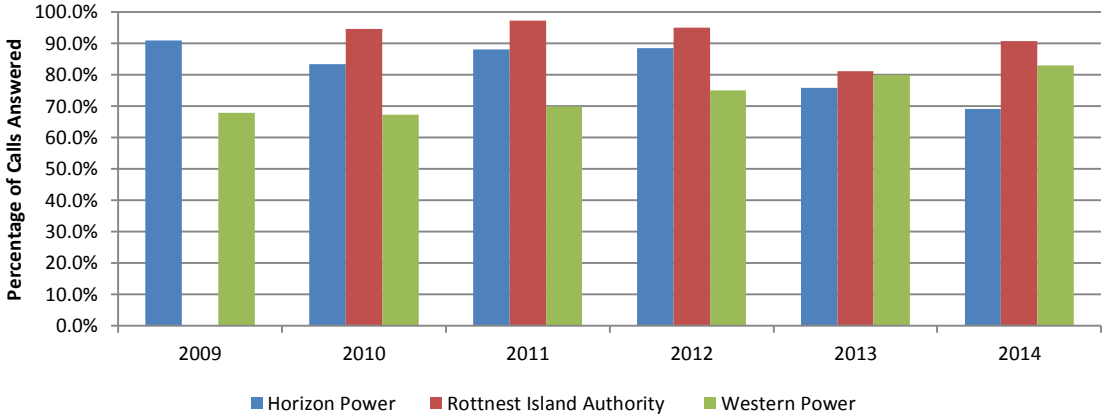


Figure 11: Average duration before a call was answered by electricity distributors

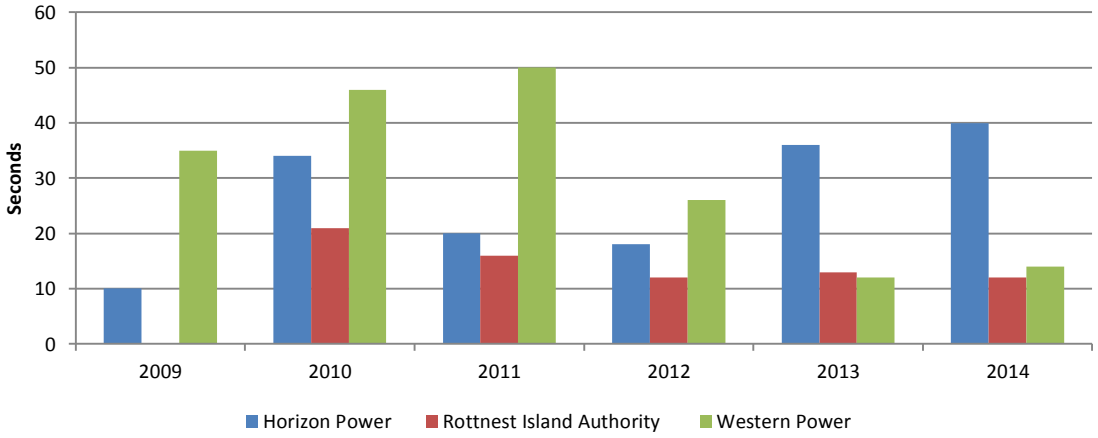
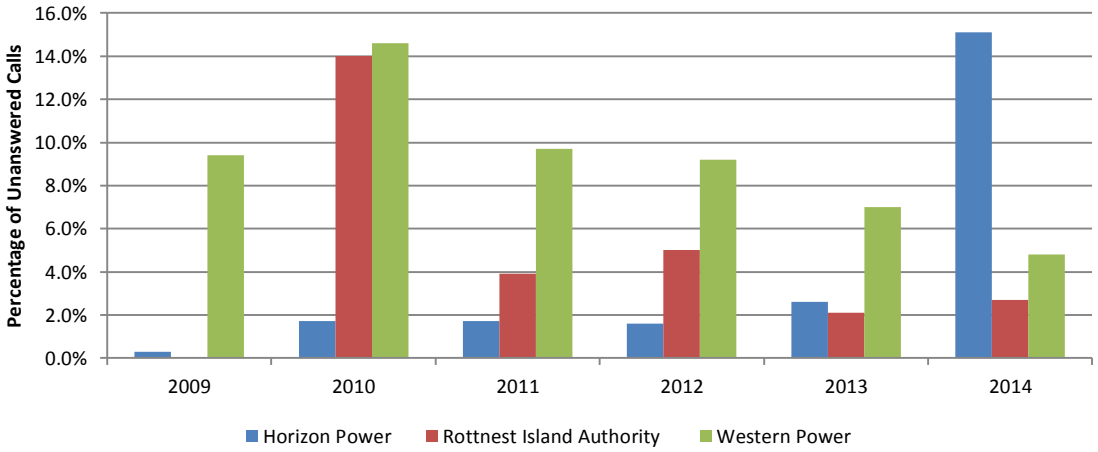


Figure 12: Percentage of calls that were unanswered by electricity distributors



Gas Distributor Call Centres

ATCO and Wesfarmers are the only gas distributors that operate call centres. Esperance Power Station provides telephone support to its customers using simpler telephone systems that do not record performance statistics. Accordingly, the remainder of this section of the report will focus on ATCO and Wesfarmers.

In 2013, ATCO informed the ERA that it had identified problems with their historical call centre performance data. Up until 2012, ATCO had only included fault call data in their reports to the ERA; calls related to "scheduling" matters had been excluded. ATCO provided corrected data for 2012, previous year's data had not been provided due to the costs involved.

Table 21 details the volume of calls received by the ATCO and Wesfarmers call centres over the past six years. Compared to 2013, the total volume of calls to the two distributors call centres in 2014 increased by 8.8%; calls to ATCO increased by 15.6% and calls to Wesfarmers increased by 6.8%.

Table 21: Volume of calls to gas distributor call centres

	2009	2010	2011	2012	2013	2014
ATCO	59,802	41,132	37,391	65,098	66,933	77,388
Wesfarmers	147,202	172,080	190,764	214,280	220,710	235,698
State Total	**207,004**	**213,212**	**228,155**	**279,378**	**287,643**	**313,086**

As is the case with electricity distributor call centre performance, in order to assess the overall performance of gas distributor's call centres it is prudent to examine all three call centre performance measures together. Figures 13, 14 and 15 show the distributor's performance over the six years to 2014.

Comparing call centre performance in 2014 with that of 2013:

- ATCO reported an overall improvement in their performance: the percentage of calls answered within 30 seconds increased from 79.1% to 80.9%, the average duration before a call is answered fell from 31 to 27 seconds and the percentage of unanswered calls fell from 3.2% to 2.7%.
- Wesfarmers reported a slight deterioration in their overall performance: the percentage of calls answered within 30 seconds fell from 82.4% to 77.8%, the average duration before a call is answered fell from 19 seconds to 21 seconds and the percentage of unanswered calls remained unchanged at 2.2%.

Figure 13: Percentage of gas distributor calls answered within 30 seconds

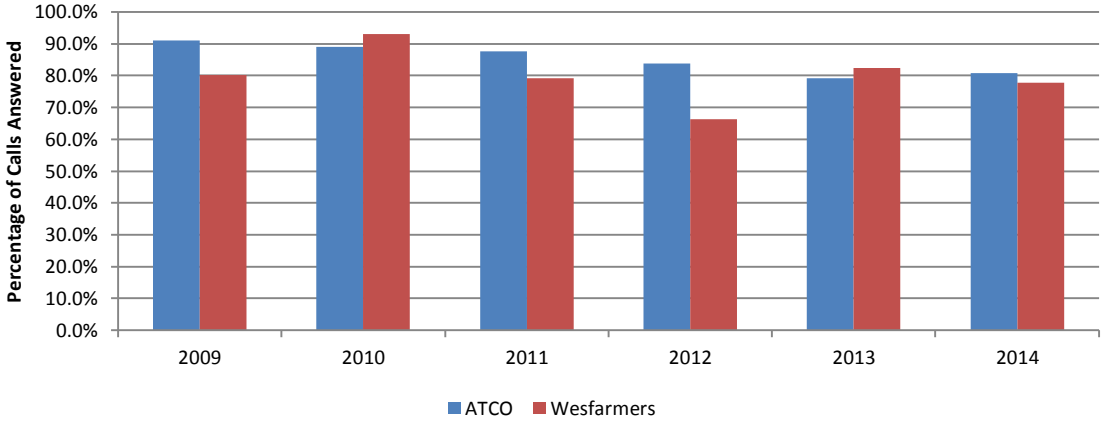


Figure 14: Average duration before a call was answered by gas distributors

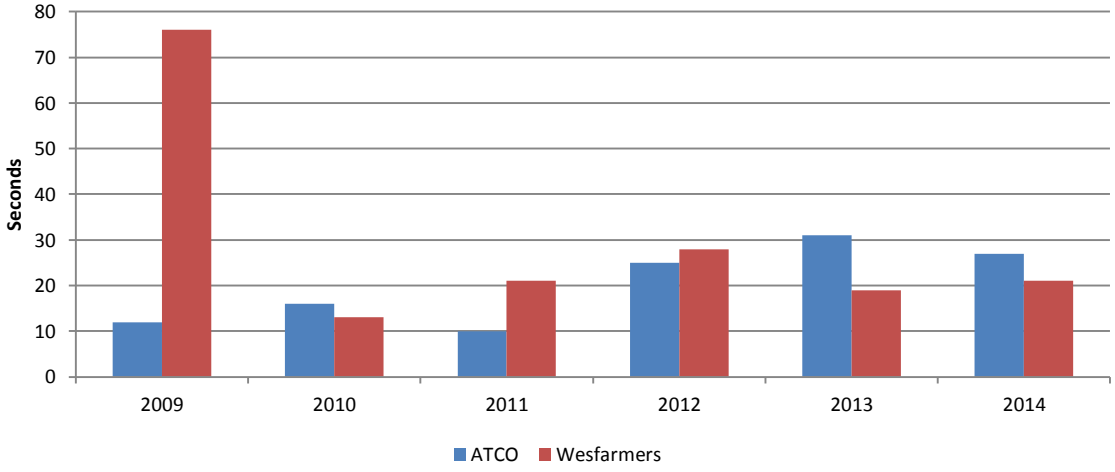
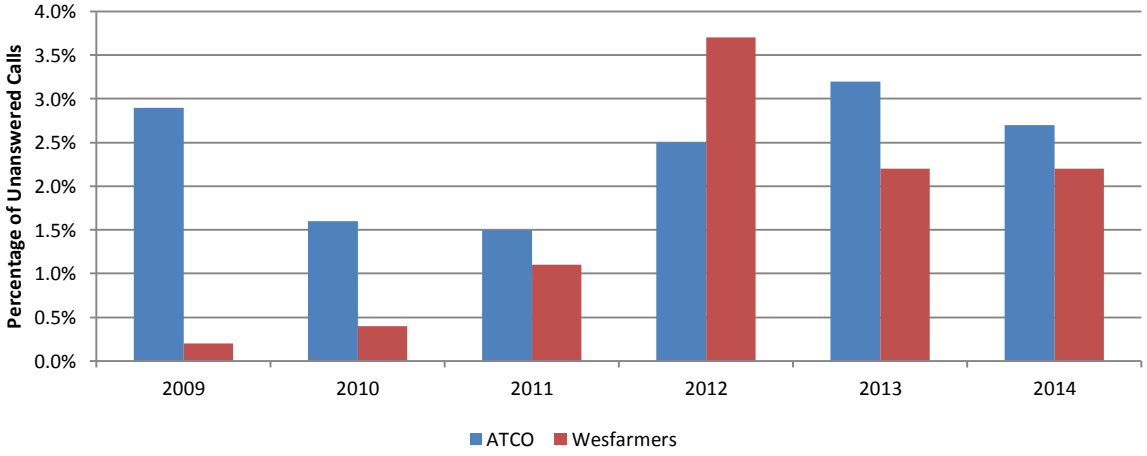


Figure 15: Percentage of calls that were unanswered by gas distributors



Service Standard Payments

Electricity Distributor Service Standard Payments

The obligation for distributors to make service standard payments to customers is dealt with in both the Electricity Customer Code and the NQ&R Code.

Part 14.4 of the Electricity Customer Code makes provision for service standard payments (at $20 per occurrence) for failure to acknowledge or respond to a written customer query or complaint within the prescribed time frames.

Part 14.5 of the Electricity Customer Code makes provision for service standard payments for wrongful disconnections (in specified circumstances) at a rate of $100 for each day that the customer was wrongfully disconnected.

Part 3 of the NQ&R Code makes provision for service standard payments to 'eligible' small use customers[47] for:

- failure to give at least 72 hours notice of a planned interruption to supply, at $20 per occurrence (section 18); and
- supply interruptions exceeding 12 hours in duration, at $80 per occurrence (section 19).

Rottnest Island Authority has not made any service standard payments to customers over the past six years. Accordingly, Table 22 details the payments made by Horizon Power and Western Power.

2014 is the first year that Western Power has reported making payments to customers under clause 14.5 of the Electricity Customer Code.

Comparing 2014 with 2013, the number of payments made by Western Power for not providing at least 72 hours notice of planned power interruptions increased. Western Power commented that:

> Planned interruptions continue to be an area of focus for the business, with attention being paid to additional customer contact during the notification process.[48]

The number of payments made by Horizon Power to customers who experienced interruptions exceeding 12 hours in duration increased from 34 in 2013 to 89 in 2014. Horizon Power commented that the majority of the payments related to outages caused by Cyclone Christine in December 2013.

Between 2013 and 2014, the number of payments made by Western Power for interruptions exceeding 12 hours in duration fell by 68.1%. Western Power commented that the payments made in 2013 included 38,659 payments relating to the storm in June 2012, which were processed and paid in 2013.[49]

[47] Customers consuming not more than 50MWh of electricity per annum (i.e. non-contestable customers).

[48] Western Power, Annual Power Quality and Reliability Report, September 2014, page 16, accessed on the Western Power website on 9 October 2014.

[49] Ibid.

Table 22: Service standard payments made by electricity distributors

	2009	2010	2011	2012	2013	2014
Electricity Customer Code - clause 14.4						
Horizon Power	0	0	0	0	0	0
Western Power	4	0	1	4	0	0
Electricity Customer Code - clause 14.5						
Horizon Power	-	-	-	-	-	4
Western Power	-	-	-	-	-	14
NQ&R Code – section 18						
Horizon Power	2	1	0	9	1	10
Western Power	364	573	1,158	968	683	751
NQ&R Code – section 19						
Horizon Power	31	71	589	32	34	89
Western Power	5,589	34,151	24,328	28,800	47,523	15,166

Gas Distributor Guaranteed Service Level Payments

Previous reports have included a section dealing with the guaranteed service level (**GSL**) payment scheme under ATCO's Access Arrangement for the Mid-West and South-West Gas Distribution Systems. It has come to the attention of the ERA that the current Access Arrangement does not include the GSL payment scheme, rather ATCO has continued the GSL scheme that was in the previous Access Arrangement on a voluntary basis.

Because the GSL payment scheme is not a regulatory requirement, the ERA has decided to discontinue reporting the GSL payments made by ATCO in this, and future reports.

Appendices

Appendix 1 - Gas Consumption and Unaccounted for Gas

Gas Consumption

The Gas Manual requires gas distributors to keep records of the amount of gas consumed by residential and non-residential customers and the peak gas demand on their distribution systems in the hour(s) of heaviest customer demand. Table 50 (Appendix 7) details gas consumption on each distributor's systems for the six years to 2013.

In 2013, ATCO informed the ERA that it had identified problems with their historical non-residential gas consumption data. Up until 2012, ATCO had included consumption by customers who consumed more than 1TJ of gas per annum. ATCO has provided corrected non-residential gas consumption data for 2011 and 2012, which has been incorporated into Tables 57 and 59 in Appendix 7.

Table 23 compares gas consumption in 2014 with the previous year. During 2014, state-wide gas consumption increased by 0.8%, comprising a 0.7% increase in residential gas consumption and a 1.9% increase in non-residential gas consumption.

Overall gas consumption on the Wesfarmers systems increased by 6.8%, an increase in residential consumption was partly offset by a reduction in non-residential consumption.

Overall gas consumption on the Esperance Power Station system increased by 7.3%, comprising an 11.3% increase in residential consumption and a 6.8% increase in non-residential consumption.

Table 23: Comparison of gas consumption in 2013 and 2014

	Residential			Non-Residential		
Distributor	**2013**	**2014**	**Change (%)**	**2013**	**2014**	**Change (%)**
ATCO[50]	10,017,511	10,087,162	0.7%	1,241,075	1,263,629	1.8%
Esperance Power Station	3,567	3,969	11.3%	26,481	28,276	6.8%
Wesfarmers	6,293	6,770	7.6%	227	195	-14.2%
State Total	**10,027,371**	**10,097,901**	**0.7%**	**1,267,783**	**1,292,100**	**1.9%**

Unaccounted for Gas

Unaccounted for gas (UFG) is a measure of network efficiency for gas distribution systems. UFG represents the difference between gas metered at the input to the distribution system and the gas usage billed to customers. The two most common contributors to UFG are leaks and metering differences. The amount of UFG can be reduced by maintaining the distribution system, thereby reducing the level of leaks and other gas loss events.

Table 24 details the level of UFG for the six years to 2014. In 2014, the state-wide level of UFG fell by 13.1% reaching a six year low. The reduction in 2014 is due to a 13.1% reduction in UFG on the ATCO systems. ATCO commented that:

> The decline in UFG over the past two years has been partially due to the lower throughput, warmer winters and ATCO's UFG reduction initiatives such as mains replacement, and leak repair.

[50] ATCO's gas consumption data is based on calendar year from January to December. The consumption data included in the 2014 performance report is for the 2013 calendar year.

UFG on the Wesfarmers systems increased by 8.9% in 2014, while Esperance Power Station has reported zero UFG for the sixth consecutive year. This is not surprising given that their distribution network is only nine years old, and it is constructed using modern plastic piping.

Table 24: Unaccounted for gas on distribution systems (GJ)

Distributor	2009	2010	2011	2012	2013	2014
ATCO[51]	830,915	858,000	866,667	920,371	813,898	707,191
Esperance Power Station	0	0	0	0	0	0
Wesfarmers	415	344	931	1,158	866	943
State Total	**831,330**	**858,344**	**867,598**	**921,529**	**814,764**	**708,134**

Comparing Table 24 with Table 23 it can be seen that UFG accounts for 13.3% of the total gas entering the Wesfarmers distribution systems in 2014, down from 20.1% in 2013. It is not possible to calculate a percentage UFG on the ATCO distribution systems because the gas consumption data is for small use customers only, whereas the UFG is a total figure for the systems, including large use customers.

[51] ATCO's UFG data is based on calendar year from January to December. The UFG data included in the 2014 performance report is for the 2013 calendar year.

Appendix 2 - Leaks on Gas Distribution Systems

The level of leaks in a gas distribution network over time is influenced by asset condition. Prudent distribution network operators use leak data as an input to their asset operation and maintenance strategies. The Gas Manual categorises gas main leaks into mains, (customer) service connections and meters. Each of these categories are further sub-categorised into low (≤7kPa), medium (7-210kPa) and high (>210kPa) operating pressure segments of the reticulation network.

Table 25 details the number of repairs to low, medium and high pressure gas mains during the six years to 2014. Given the relative size of the ATCO gas distribution system in comparison to the distribution systems operated by Esperance Power Station and Wesfarmers (Table 40), it is not surprising that ATCO accounts for nearly all of the mains leak repairs. Compared to 2013, ATCO reported a 0.8% increase in the number of gas main leak repairs on their networks.

Table 25: Gas main leak repairs

	2009	2010	2011	2012	2013	2014
ATCO	706	916	600	830	835	842
Esperance Power Station	1	3	0	0	2	0
Wesfarmers	0	0	1	0	1	1
State Total	**2716**	**919**	**601**	**830**	**838**	**843**

Table 26 details the number of leak repairs to property service connections during the six years to 2014. For the reasons specified above, ATCO accounts for nearly all of the repairs over the six year period. Compared to 2013, ATCO reported an 8.6% increase in the number of property service connection leak repairs carried out, reaching a six year high.

Table 26: Gas property service connection leak repairs

	2009	2010	2011	2012	2013	2014
ATCO	5,348	6,481	6,003	5,657	6,614	7,182
Esperance Power Station	1	0	1	0	3	0
Wesfarmers	0	0	0	0	0	0
State Total	**5,349**	**6,481**	**6,004**	**5,657**	**6,617**	**7,182**

Table 27 details the number of leak repairs to gas meters during the six years to 2014. Compared to 2013, ATCO reported a 3.1% reduction in the number of leak repairs to gas meters, reaching a six year low.

Table 27: Gas meter leak repairs

	2009	2010	2011	2012	2013	2014
ATCO	1,006	1,079	1,008	816	486	471
Esperance Power Station	0	0	0	0	0	0
Wesfarmers	0	0	0	1	0	2
State Total	**1,006**	**1,079**	**1,008**	**817**	**486**	**473**

Appendix 3 - Street Lighting Repairs

The Electricity Customer Code requires electricity distributors to maintain records in respect of street lights that they are responsible for, including:

- the total number of street lights they are responsible for the maintenance of in metropolitan and regional areas;[52]
- the number of street lights reported faulty each month in metropolitan and regional areas;
- the number of occasions that they have failed to repair faulty street lights within:
  - 5 business days for the metropolitan area;
  - 9 business days for regional areas; and
- the average number of days to repair faulty street lights in metropolitan and regional areas.

The time to repair commences from the time that a distributor becomes aware that the street light is faulty.

Table 28 details the number of street lights in metropolitan and regional areas that are maintained by each distributor. Over the six years to 2014, the average annual growth of metropolitan and regional streetlights was 4.7% and 3.3% respectively. The streetlight population maintained by Horizon Power and Western Power has grown over time, while the number of streetlights maintained by Rottnest Island Authority has remained unchanged.

Table 28: Number of street lights in metropolitan and regional areas

	2009	2010	2011	2012	2013	2014
Metropolitan areas						
Horizon Power	4,636	5,017	5,293	5,441	5,993	8,325
Western Power	183,342	187,305	192,890	198,070	199,767	207,146
Total	**187,978**	**192,322**	**198,183**	**203,511**	**205,760**	**215,471**
Regional areas						
Horizon Power	8,817	9,257	9,610	9,978	10,331	11,298
Rottnest Island Authority	190	190	190	190	190	190
Western Power	35,060	35,867	37,018	37,595	37,907	38,539
Total	**44,067**	**45,314**	**46,818**	**47,763**	**48,428**	**50,027**

Table 29 details the number of faulty street lights reported to the distributors over the past five years. Compared to 2013, the number of faulty metropolitan and regional street lights reported to distributors both fell, by 8.3% and 6.5% respectively.

[52] The Electricity Customer Code defines the metropolitan area as: Perth, Mandurah, Shire of Murray, Albany, Bunbury, Geraldton, Kalgoorlie, Karratha, Port Hedland and South Hedland.

Table 29: Number of street light faults logged in metropolitan and regional areas

Metropolitan	2009	2010	2011	2012	2013	2014
Metropolitan areas						
Horizon Power	420	156	168	180	108	149
Western Power	40,508	39,978	35,912	34,271	36,525	33,447
Metropolitan Total	**40,928**	**40,134**	**36,080**	**34,451**	**36,633**	**33,596**
Regional areas						
Horizon Power	276	192	156	168	166	168
Rottnest Island Authority	48	24	36	18	46	4
Western Power	4,043	6,214	2,922	3,137	3,414	3,220
Regional Total	**4,367**	**6,430**	**3,114**	**3,323**	**3,626**	**3,392**

Figure 16 details the number of street light faults logged by distributors, expressed as a percentage of the total street light population maintained by each distributor in the metropolitan and regional areas. The proportion of faulty metropolitan street lights reported to Horizon Power and Western Power is higher than in the regional areas. The most likely explanation for this difference is that the detection rate for faulty street lights in regional areas is lower than in metropolitan areas due to their relatively isolated locations.

On average, over the six years to 2014, the percentage of metropolitan streetlights reported faulty each year is 18.5%, and the percentage of regional streetlights reported faulty is 8.7%.

Figure 16: Percentage of faulty street lights by distributor and location

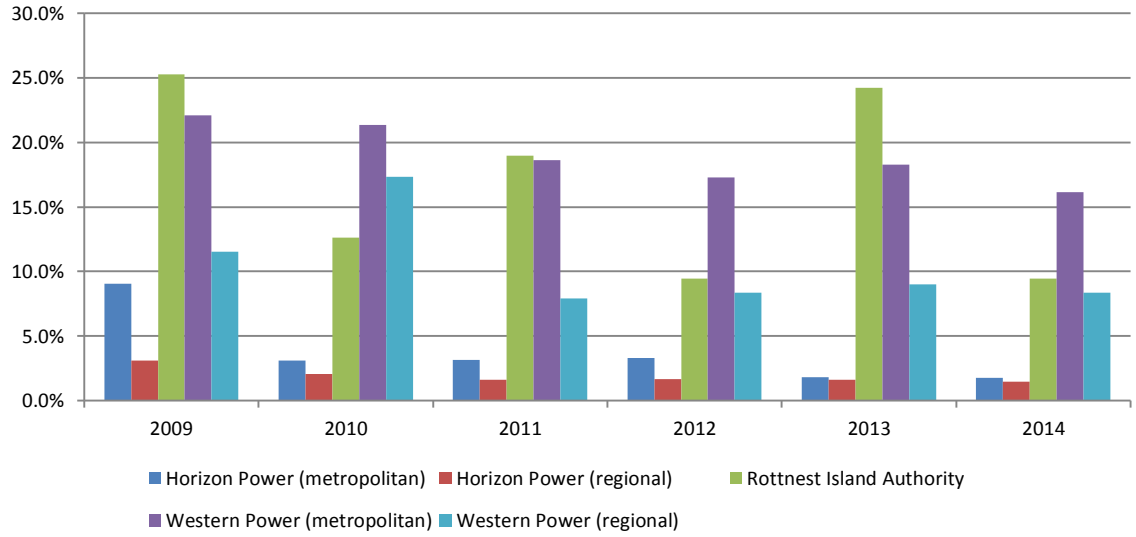


Figure 17 details the percentage of faulty metropolitan street lights that have been repaired after the five day deadline specified in the Electricity Customer Code for the past six years.

Western Power has significantly improved their on-time metropolitan street light repair performance over the past six years; the percentage of late repairs in 2014 reached a new low of 0.7%. Western Power commented:

> The improvement in performance was due to an increased focus on proactive management of faulty streetlights by utilising the crews involved in the switch wire replacement program to conduct repairs.

Horizon Power's on-time metropolitan streetlight repair performance declined, the percentage of late repairs increased from 7.8% in 2013 to 20.1% in 2014. Horizon Power commented:

> In 2013, Horizon Power focussed on its street light performance with notable improvement. A change in focus, processes and resources in 2014 impacted on the outcome and, when coupled with faults with the light supply, there was an increase in the figures in 2014.

Figure 17: Percentage of faulty metropolitan street lights repaired after 5 days

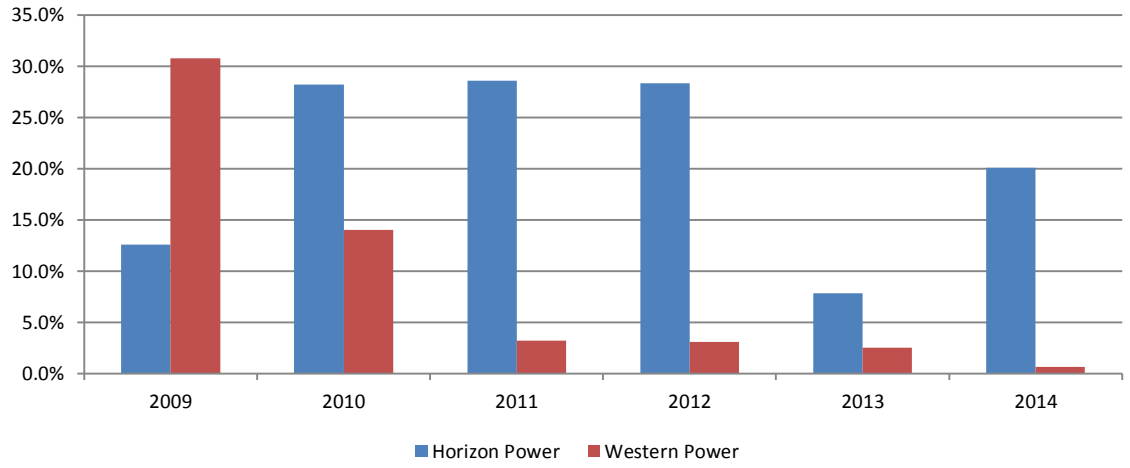
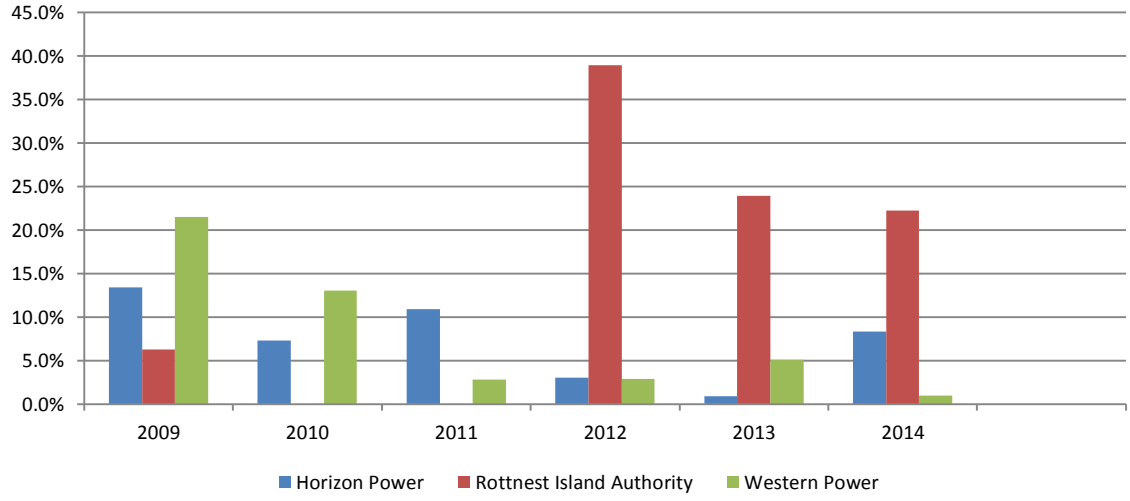


Figure 18 details the percentage of faulty regional street lights that have been repaired after the nine day deadline specified in the Electricity Customer Code during the six years to 2014.

Compared to 2013, the percentage of late repairs to regional streetlights performed by Horizon Power increased significantly, up from 0.9% in 2013 to 8.3% in 2014. Horizon Power's explanation for the deterioration in performance is the same as that given for metropolitan repairs.

Between 2013 and 2014, the percentage of late repairs to regional streetlight performed by Rottnest Island Authority was relatively unchanged, while Western Power's performance improved significantly, late repairs fell from 5.1% to 1.0%, a six year low.

Figure 18: Percentage of faulty regional street lights repaired after 9 days



Appendix 4 - Additional Electricity System Reliability Information

Network Reliability (SCONRRR 2002)

The following definitions apply to the measures reported in this section:

- Overall – includes all sustained planned and unplanned interruptions including those caused by generation outages, transmission outages and directed load shedding.
- Distribution Network (Planned) – excludes generation outages, transmission outages and directed load shedding.
- Distribution Network (Unplanned) – excludes generation outages, transmission outages and directed load shedding.
- Normalised Distribution Network (Unplanned) – excludes outages which:
  - are generation outages;
  - are transmission outages;
  - are directed load shedding; and
  - where the daily SAIDI value exceeds the threshold for a MED;[53]

SAIDI

Table 30: Western Power SAIDI performance in 2014

SAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	389.0	39.7	214.3	517.6	1,422.5
Distribution Network (Planned)	133.1	18.7	70.2	258.7	328.2
Distribution Network (Unplanned)	239.8	18.4	131.4	244.4	1,072.4
Normalised Distribution Network (Unplanned)	171.5	18.3	107.3	171.1	672.7

Table 31: Horizon Power SAIDI performance in 2014

SAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	350	N/A	510	290	819
Distribution Network (Planned)	47	N/A	43	35	259
Distribution Network (Unplanned)	303	N/A	466	254	560
Normalised Distribution Network (Unplanned)	158	N/A	83	151	542

[53] Standard IEEE 1366-2003 defines a Major Event Day as a day in which the system SAIDI exceeds a threshold value T_{med} minutes. T_{med} is calculated from a statistical analysis of the SAIDI data for the whole reporting period to identify events that deviate significantly from the average performance of the network.

Table 32: Rottnest Island Authority SAIDI Performance in 2014

SAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	61.9	N/A	N/A	61.9	N/A
Distribution Network (Planned)	38.9	N/A	N/A	38.9	N/A
Distribution Network (Unplanned)	23.0	N/A	N/A	23.0	N/A
Normalised Distribution Network (Unplanned)	0.0	N/A	N/A	0.0	N/A

SAIFI

Table 33: Western Power SAIFI performance in 2014

SAIFI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	2.50	0.24	1.72	3.10	6.91
Distribution Network (Planned)	0.41	0.03	0.23	0.77	0.93
Distribution Network (Unplanned)	1.81	0.20	1.26	2.04	5.56
Normalised Distribution Network (Unplanned)	1.62	0.20	1.13	1.83	4.98

Table 34: Horizon Power SAIFI performance in 2014

SAIFI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	4.0	N/A	3.4	3.9	7.1
Distribution Network (Planned)	0.4	N/A	0.2	0.3	1.9
Distribution Network (Unplanned)	3.6	N/A	3.2	3.6	5.2
Normalised Distribution Network (Unplanned)	3.3	N/A	2.4	3.4	5.1

Table 35: Rottnest Island Authority SAIFI performance in 2014

SAIFI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	3.60	N/A	N/A	3.60	N/A
Distribution Network (Planned)	0.52	N/A	N/A	0.52	N/A
Distribution Network (Unplanned)	3.08	N/A	N/A	3.08	N/A
Normalised Distribution Network (Unplanned)	0.00	N/A	N/A	0.00	N/A

CAIDI

Table 36: Western Power CAIDI performance in 2014

CAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	156.0	162.0	125.0	167.0	206.0
Distribution Network (Planned)	327.0	617.0	304.0	335.0	354.0
Distribution Network (Unplanned)	133.0	94.0	104.0	120.0	193.0
Normalised Distribution Network (Unplanned)	106.0	93.0	95.0	93.0	135.0

Table 37: Horizon Power CAIDI performance in 2014

CAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	88	N/A	150	74	116
Distribution Network (Planned)	133	N/A	182	122	140
Distribution Network (Unplanned)	83	N/A	148	70	108
Normalised Distribution Network (Unplanned)	47	N/A	35	44	106

Table 38: Rottnest Island Authority CAIDI performance in 2014

CAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	17.2	N/A	N/A	17.2	N/A
Distribution Network (Planned)	74.81	N/A	N/A	74.81	N/A
Distribution Network (Unplanned)	7.47	N/A	N/A	7.47	N/A
Normalised Distribution Network (Unplanned)	0.0	N/A	N/A	0.0	N/A

Appendix 5 - Electricity Distribution System Asset Information

Table 39 provides an overview of the assets deployed in the distribution systems operated by Horizon Power, Rottnest Island Authority and Western Power.

Table 39: Electricity distribution system assets in 2013

Asset Type	Asset Sub-Type	Horizon Power	Rottnest Island Authority	Western Power
Number of metered supply points	CBD	N/A	N/A	6,811
	Urban	6,573	N/A	752,636
	Short Rural	37,826	195	221,402
	Long Rural	2,109	N/A	98,549
Feeder Length (km)	CBD	N/A	N/A	215
	Urban	360.5	N/A	21,393
	Short Rural	3,694.3	44.9	15,758
	Long Rural	3,266.1	N/A	54,030
Number of Transformers	Sub-transmission	N/A	2	N/A
	Distribution	4,380	13	66,815
Total Capacity of Transformers (MVA)	Sub-transmission	N/A	2	N/A
	Distribution	701	3	9,203
Number of street lights		19,623	190	245,685
Number of Poles		58,334	50	765,555

Appendix 6 - Gas Distribution System Construction Information

Table 40 provides an overview of the network assets deployed in the distribution systems operated by ATCO, Esperance Power Station and Wesfarmers. It can be seen that the distribution systems installed and in service for Esperance Power Station and Wesfarmers are significantly smaller and less diverse in both asset and operating pressure than the distribution systems operated by ATCO.

Table 40: Gas distribution network construction information for 2013

Asset Type	Asset Sub-Type	ATCO			Esperance Power Station			Wesfarmers		
		Low Pressure	Medium Pressure	High Pressure	Low Pressure	Medium Pressure	High Pressure	Low Pressure	Medium Pressure	High Pressure
Length of gas main (km) constructed from:	Cast Iron	27.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unprotected Steel	112	45.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Protected Steel	0.0	54.8	731.6	0.0	0.0	0.0	0.0	0.0	0.0
	PVC	3,618	5,999.8	0.0	0.0	0.0	0.0	0.0	8.7	0.0
	Polyethylene	74.9	2652.4	228.5	0.0	35.2	0.0	0.0	42.3	0.0
	Other	24.5	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total length of distribution mains installed and in service (km)		3857.3	8754.8	960.1	0.0	35.2	0.0	0.0	51.0	0.0
Number of service connections per km of gas mains		51.0			9.7			18.8		

Appendix 7 - Additional Electricity and Gas Performance Data

Table 41: Total small use customer connections on electricity and gas distribution systems

	Electricity							Gas					
	2009	2010	2011	2012	2013	2014		2009	2010	2011	2012	2013	2014
Horizon Power	39,577	41,143	43,181	44,328	45,866	46,508	ATCO	610,294	628,537	636,323	652,808	673,878	692,988
Rottnest Island Authority	191	83	83	527[54]	527	527	Esperance Power Station	242	266	280	313	332	342
Western Power	942,381	1,023,341	1,043,364	1,015,679	1,050,232	1,060,588	Wesfarmers	831	808[55]	862	903	940	956
State Total	**982,149**	**1,064,567**	**1,086,628**	**1,060,534**	**1,096,625**	**1,107,623**	**State Total**	**611,367**	**629,589**	**637,427**	**654,024**	**675,150**	**694,286**

[54] For 2011/12, Rottnest Island Authority, for the first time, included multi-unit dwellings and holiday accommodation in its electricity connections data.

[55] Wesfarmers has corrected the number of connections on their distribution systems from 796 to 808 connections.

Table 42: Establishment of new customer connections on electricity and gas distribution systems

	New connections on electricity systems							New connections on gas systems					
	2009	2010	2011	2012	2013	2014		2009	2010	2011	2012	2013	2014
Horizon Power	1,793	1,764	2,157	1,780	2,401	2,797	ATCO	16,660	16,911	19,611	14,752	15,423	20,273
Rottnest Island Authority	2	0	0	0	0	0	Esperance Power Station	33	24	14	20	3	8
Western Power	25,568	26,304	24,614	21,420	23,994	29,532	Wesfarmers	40	42	54	41	37	15
State Total	**27,363**	**28,068**	**26,771**	**23,200**	**26,395**		**State Total**	**16,733**	**16,977**	**19,679**	**14,813**	**15,463**	**20,296**

Table 43: Number of customer connections not established within the prescribed time frames on electricity and gas distribution systems

	Number of new connections not established on time						Percentage of total new connections					
	2009	2010	2011	2012	2013	2014	2009	2010	2011	2012	2013	2014
Electricity												
Horizon Power	0	0	0	2	15	22	0.0	0.0	0.0	0.1	0.6	0.8
RIA	0	N/A	N/A	N/A	N/A	N/A	0.0	N/A	N/A	N/A	N/A	N/A
Western Power	1,771	957	885	446	361	223	6.9	3.6	3.6	2.1	1.5	0.7
Gas												
ATCO	35	6	7	3	2	2	0.2	0.04	0.04	0.02	0.01	0.01
Esperance Power Station	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
Wesfarmers	0	0	0	0	0		0.0	0.0	0.0	0.0	0.0	0.0

Table 44: Customer reconnections on electricity and gas distribution systems

	Reconnections on electricity systems							Reconnections on gas systems					
	2009	2010	2011	2012	2013	2014		2009	2010	2011	2012	2013	2014
Horizon Power	-	-	-	-	1,641[56]	3,502	ATCO	-	-	-	-	3,692	2,820
Rottnest Island Authority	-	-	-	-	0	0	Esperance Power Station	-	-	-	-	2	25
Western Power	-	-	-	-	13,908	15,520	Wesfarmers	-	-	-	-	4	2
State Total	**-**	**-**	**-**	**-**	**14,003**	**19,022**	**State Total**	**-**	**-**	**-**	**-**	**3,698**	**2847**

Table 45: Number of customer reconnections not established within the prescribed time frames on electricity and gas distribution systems

	Number of reconnections not established on time						Percentage of total reconnections					
	2009	2010	2011	2012	2013	2014	2009	2010	2011	2012	2013	2014
Electricity												
Horizon Power	-	-	-	-	5	12	-	-	-	-	0.3[57]	0.3
RIA	-	-	-	-	N/A	N/A	-	-	-	-	N/A	N/A
Western Power	-	-	-	-	227	224	-	-	-	-	1.6	1.4
Gas												
ATCO	-	-	-	-	22	15	-	-	-	-	0.6	0.5
Esperance Power Station	-	-	-	-	0	0	-	-	-	-	0.0	0.0
Wesfarmers	-	-	-	-	0	0	-	-	-	-	0.0	0.0

[56] Horizon Power reported a figure of 94 reconnections for 2013. This has now been corrected to 1,641.

[57] The percentage has been re-calculated following the amendment of the total number of reconnections in Table 44.

Table 46: Number of small use electricity customer premises that have experienced interruptions of more than 12 hours continuously

	2009	2010	2011	2012	2013	2014
Horizon Power	354	334	1,138	1,875	587	3,785
Rottnest Island Authority	0	0	0	3	0	0
Western Power	45,456	112,396	54,414	179,694	38,820	43,750
State Total	**45,810**	**112,730**	**55,552**	**181,572**	**39,407**	**47,535**

Table 47: Number of Urban (including Perth CBD) and Rural electricity customer premises that have experienced multiple interruptions

	Perth CBD and Urban areas, > 9 interruptions						Rural areas, > 16 interruptions					
	2009	2010	2011	2012	2013	2014	2009	2010	2011	2012	2013	2014
Horizon Power	N/A	N/A	N/A	N/A	N/A	N/A	2,176	2,535	819	1,176	3,327	1,263
Rottnest Island Authority	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0
Western Power	16,733	12,616	6,813	13,224	8,702	12,326	739	1,513	435	1,125	2,341	5,154
State Total	**16,733**	**12,616**	**6,813**	**13,224**	**8,702**	**12,326**	**2,915**	**4,048**	**1,254**	**2,301**	**5,668**	**6,417**

Table 48: Number of small use gas customers experiencing interruptions exceeding 12 hours continuously

	Customers with interruptions to supply >12 hours continuously						Customers with 5 or more supply interruptions					
	2009	2010	2011	2012	2013	2014	2009	2010	2011	2012	2013	2014
ATCO	0	0	0	0	640	1,534	0	0	0	0	0	1
Esperance Power Station	0	0	0	0	0	0	0	0	0	0	0	0
Wesfarmers	0	0	0	0	0		0	0	0	0	0	0
State Total	**2009**	**0**	**0**	**0**	**640**		**0**	**0**	**0**	**0**	**0**	**1**

Table 49: Average duration and frequency of supply interruptions in the Perth CBD (NQ&R Code)

	Duration of Interruptions						Frequency of Interruptions					
	2009	2010	2011	2012	2013	2014	2009	2010	2011	2012	2013	2014
Horizon Power	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rottnest Island Authority	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Western Power	37	37	39	31	28	35	0.2	0.3	0.3	0.3	0.3	0.3

Table 50: Average duration and frequency of supply interruptions in the Urban Areas (NQ&R Code)

	Duration of Interruptions						Frequency of Interruptions					
	2009	2010	2011	2012	2013	2014	2009	2010	2011	2012	2013	2014
Horizon Power	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rottnest Island Authority	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Western Power	270	333	341	405	390	343	2.8	2.8	2.7	2.6	2.4	2.2

Table 51: Average duration and frequency of supply interruptions in the Other Areas of the State (NQ&R Code)

	Duration of Interruptions						Frequency of Interruptions					
	2009	2010	2011	2012	2013	2014	2009	2010	2011	2012	2013	2014
Horizon Power	448	408	297	302	318	330	5.7	5.1	4.5	3.8	4.1	3.9
Rottnest Island Authority	108	87	108	226	76	62	10.7	13.1	10.6	4	5.1	3.6
Western Power	590	679	777	947	979	1020	4.5	4.9	4.9	5.1	5.3	5.2

Table 52: Average duration and frequency of supply interruptions in the Isolated Systems (NQ&R Code)

	Duration of Interruptions						Frequency of Interruptions					
	2009	2010	2011	2012	2013	2014	2009	2010	2011	2012	2013	2014
Horizon Power	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rottnest Island Authority	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Western Power	-	-	-	-	537	505	-	-	-	-	11.6	16.7

Table 53: Complaints received by electricity distributors

	Year ending 30 June					
	2009	2010	2011	2012	2013	2014
Electricity Customer Code Complaints						
Horizon Power	149	178	137	137	469	291
Rottnest Island Authority	0	0	0	0	0	0
Western Power	2,845	2,695	1,738	712	664	547
Admin processes and customer service complaints						
Horizon Power	77	65	58	86	414	274
Rottnest Island Authority	0	0	0	0	0	0
Western Power	253	181	101	33	25	41
Other Complaints						
Horizon Power	72	113	79	51	55	17
Rottnest Island Authority	0	0	0	0	0	0
Western Power	2,592	793	1,637	679	639	506
Technical Quality of Supply complaints						
Horizon Power	63	44	29	23	30	31
Rottnest Island Authority	1	0	0	0	0	0
Western Power	1,646	2,068	2,158	1,307	1,311	765
Customer complaints concluded in 15 business days (% of total Technical Quality of Supply and Electricity Customer Code complaints)						
Horizon Power	100	100	100	100	55	62
Rottnest Island Authority	-	-	-	-	-	-
Western Power	65	33	26	65	78	78

Table 54: Complaints received by gas distributors (Gas Compendium)[58]

	Year ending 30 June					
	2009	2010	2011	2012	2013	2014
Total number of complaints						
ATCO	30	38	35	36	16	2
Esperance Power Station	0	0	0	0	0	0
Wesfarmers	0	1	0	2	0	0
Admin processes and customer service complaints						
ATCO					6	0
Esperance Power Station					0	0
Wesfarmers					0	0
Other Complaints						
ATCO					10	2
Esperance Power Station					0	0
Wesfarmers					0	0
Customer complaints concluded in 15 business days (Combined total of Gas Compendium and Quality & Reliability Complaints)						
ATCO						
Esperance Power Station	-	-	-	-	92.0%	100.0%
Wesfarmers					-	-

[58] Prior to 2013, the total complaints included reliability and quality of supply complaints as well as complaints received in relation to the two categories under the Gas Compendium. The reliability and quality of supply complaints were included in the Other Complaints category. From 2013, the report will separate the reliability and quality of supply complaints into a separate table (Table 51).

Table 55: Complaints received by Gas Distributors (Reliability and Quality of Supply)

	Year ending 30 June					
	2009	2010	2011	2012	2013	2014
Total number of complaints						
ATCO	-	-	-	-	9	23
Esperance Power Station	-	-	-	-	0	0
Wesfarmers	-	-	-	-	0	0
Connection and augmentation complaints						
ATCO	-	-	-	-	4	6
Esperance Power Station	-	-	-	-	0	0
Wesfarmers	-	-	-	-	0	0
Reliability of supply complaints						
ATCO	-	-	-	-	2	10
Esperance Power Station	-	-	-	-	0	0
Wesfarmers	-	-	-	-	0	0
Quality of supply complaints						
ATCO	-	-	-	-	3	5
Esperance Power Station	-	-	-	-	0	0
Wesfarmers	-	-	-	-	0	0
Network charges and costs complaints						
ATCO	-	-	-	-	0	2
Esperance Power Station	-	-	-	-	0	0
Wesfarmers	-	-	-	-	0	0

Table 56: Electricity and gas distributor call centre performance

	Total number of calls						Calls responded within 30 sec (%)					
Distributor	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Horizon Power	94,018	89,200[59]	71,215	82,587	103,301	14,437[60]	90.9	83.4	88.0	88.5	75.9	69.0
RIA	N/A	1,027	5,272	5,840	6,173	4,850	N/A	94.6	97.3	95.0	81.2	90.8
Western Power	373,761	538,903	495,626	531,554	510,935	455,368	67.8	67.3	69.9	75.1	80.0	82.9
Electricity Total	**467,779**	**629,130**	**572,149**	**619,981**	**620,409**	**474,655**						
ATCO	59,802	41,132	37,391	65,098	66,933	77,388	91.1	89.1	87.7	83.9	79.1	80.9
Wesfarmers[61]	147,202	172,080	190,764	214,280	220,710	235,698	80.1	93.1	79.1	66.3	82.4	77.8
Gas Total	**207,004**	**213,212**	**228,155**	**279,378**	**287,643**	**313086**						

	Average duration before a call is answered by an operator (seconds)						Unanswered calls (%)					
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Horizon Power	10	34	20	18	36	40	0.3	1.7	1.7	1.6	2.6	15.1
RIA	N/A	21	16	12	13	12	N/A	14.0	3.9	5.0	2.1	2.7
Western Power	35	46	50	26	12	14	9.4	14.6	9.7	9.2	7.0	4.8
ATCO	12	16	10	25	31	27	2.9	1.6	1.5	2.5	3.2	2.7
Wesfarmers	76	13	21	28	19	21	0.2	0.4	1.1	3.7	2.2	2.2

[59] This is the combined total of both retail and distribution calls.

[60] Horizon Power is now able to separate fault calls from other calls to their call centre. The years up and including 2013 included all calls to the call centre.

[61] The Wesfarmers call centre also handles calls for other Wesfarmers Kleenheat Gas businesses. The data presented in this table includes all calls to the Wesfarmers call centre.

Table 57: Residential and non-residential gas consumption

	Residential gas consumption (GJ)						Non-residential gas consumption (%)					
Distributor	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
ATCO[62]	10,620,391	10,806,658	10,563,707	9,528,366	10,017,511	10,087,162	17,194,904	17,231,682	1,203,416[63]	1,177,507	1,241,075	1,263,629
Esperance Power Station	22,875	5,100	6,268	5,506	3,567	3,969	1,847	315	250	243	26,481	28,276
Wesfarmers	2,644	2,893	3,060	3,536	6,293	6,769	19,038	19,303	25,152	4,666	227	194
State Total	**10,645,910**	**10,814,651**	**10,573,035**	**9,537,408**	**10,027,371**	**10,193,727**	**17,215,789**	**17,251,300**	**17,423,028**	**16,638,050**	**1,267,783**	**1,865,260**

Table 58: Unaccounted for gas (GJ)

Distributor	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
ATCO	830,915	858,000	866,667	920,371	813,898	707,191
Esperance Power Station	0	0	0	0	0	0
Wesfarmers	415	344	931	1,158	866	943
State Total	**831,330**	**858,344**	**867,598**	**921,529**	**814,764**	**708,134**

[62] ATCO's gas consumption data is based on calendar year from January to December. The consumption data included in the 2014 performance report is for the 2013 calendar year.

[63] Up until 2010, ATCO included gas supplied to large use non-residential customers in their gas consumption data. The gas consumption values for 2011 onwards only include supply to small use customers.

Table 59: Percentage of unaccounted for gas on distribution systems

	Total gas consumption (GJ)						Unaccounted for gas (%)					
	2009	2010	2011	2012	2013	2014	2009	2010	2011	2012	2013	2014
ATCO[64]	27,976,970	27,880,360	11,767,123[65]	10,705,873	11,258,586	11,350,791	-	-	-	-	-	-
Esperance Power Station	21,682	22,196	28,212	8,202	30,048	32,245	0.0	0.0	0.0	0.0	0.0	0.0
Wesfarmers	24,722	5,415	6,158	5,749	6,520	6,963	1.4	17.2	17.7	3.0	13.3	13.5

[64] It is not possible to calculate UFG on the ATCO networks, because the UFG includes gas supplied to large use customers, while the gas consumption is restricted to small use customers.

[65] See the above footnote.

Table 60: Gas main leak repairs

	2009	2010	2011	2012	2013	2014
ATCO	706	916	600	830	835	842
Esperance Power Station	1	3	0	0	2	0
Wesfarmers	0	0	1	0	1	1
State Total	**2716**	**919**	**601**	**830**	**838**	**843**

Table 61: Gas meter leak repairs

	2009	2010	2011	2012	2013	2014
ATCO	1,006	1,079	1,008	816	486	471
Esperance Power Station	0	0	0	0	0	0
Wesfarmers	0	0	0	1	0	2
State Total	**1,006**	**1,079**	**1,008**	**817**	**240**	**473**

Table 62: Gas property service connection meter repairs

	2009	2010	2011	2012	2013	2014
ATCO	5,348	6,481	6,003	5,657	6,614	7,182
Esperance Power Station	1	0	1	0	3	0
Wesfarmers	0	0	0	0	0	0
State Total	**5,349**	**6,481**	**6,004**	**5,657**	**2,131**	**7,182**

Table 63: Number of street lights and street light faults logged

	Total number of streetlights						Street light faults logged					
Metropolitan	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Horizon Power	4,636	5,017	5,293	5,441	5,993	8,325	420	156	168	180	108	149
Western Power	183,342	187,305	192,890	198,070	199,767	207,146	40,508	39,978	35,912	34,271	36,525	33,447
State total	**187,978**	**192,322**	**198,183**	**203,511**	**205,760**	**215,471**	**40,928**	**40,134**	**36,080**	**34,451**	**36,633**	**33,596**
	Total number of streetlights						**Street light faults logged**					
Regional	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Horizon Power	8,817	9,257	9,610	9,978	10,331	11,298	276	192	156	168	166	168
RIA	190	190	190	190	190	190	48	24	36	18	46	18
Western Power	35,060	35,867	37,018	37,595	37,907	38,539	4,043	6,214	2,922	3,137	3,414	3,220
State total	**44,067**	**45,314**	**46,818**	**47,763**	**48,428**	**50,027**	**4,367**	**6,430**	**3,114**	**3,323**	**3,626**	**3,406**

Table 64: Metropolitan and regional area street light faults that are repaired after the prescribed timeframes

	Number of faults fixed in > 5 days						Percentage					
Metropolitan	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Horizon Power	53	44	48	51	13	30	12.6	28.2	28.6	28.3	7.8	20.1
Western Power	12,494	5,598	1,134	1,050	899	218	30.8	14.0	3.2	3.1	2.5	0.7
State total	**12,547**	**5,642**	**1,182**	**1,101**	**912**	**248**						
	Number of faults fixed in > 9 days						**Percentage**					
Regional	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Horizon Power	37	14	17	5	1	14	13.4	7.3	10.9	3.0	0.9	8.3
RIA	3	0	0	7	11	4	6.3	0.0	0.0	38.9	23.9	22.2
Western Power	871	808	83	91	173	32	21.5	13.0	2.8	2.9	5.1	1.0
State total	**911**	**822**	**100**	**103**	**185**	**50**						

Appendix 8 - Energy Distribution System Regulation

Definition of a small use customer

Throughout this report, the following definitions of a customer are used:

- Customer - means a (small use) customer connection that:
  - consumes not more than 1TJ (or approximately $30,000) of gas per annum, or
  - consumes not more than 160MWh (or approximately $35,000) of electricity per annum.

Distribution Licence Performance Reporting Obligations

All energy distribution licences include obligations for the licensee to provide information to the ERA in respect of the activities covered by the licence. As described below, the ERA has restricted the obligation to provide non-financial performance information to those distributors who supply small use customers.

Electricity Licences

Electricity distribution licences include a condition that the licensee must provide to the ERA any information that it may require to fulfil its functions under the *Electricity Industry Act 2004* (**Electricity Act**). The ERA has specified the non-financial performance information that is to be provided by the electricity distribution licensees who supply small use customers in the *Electricity Compliance Reporting Manual* (**Electricity Manual**). The Electricity Manual incorporates the record keeping requirements of the Electricity Customer Code, which in turn references the 2002 SCONRRR Framework.[66]

Gas Licences

Gas distribution licences include a condition that the licensee must provide to the ERA any information that it may require to fulfil its functions under the *Energy Coordination Act 1994* (**Gas Act**), and the reporting requirements contained in the *Compendium of Gas Licence Obligations* (**Gas Compendium**).[67] The ERA has specified the non-financial performance information that is to be provided by the gas distribution licensees who supply small use customers in the *Gas Compliance Reporting Manual* (**Gas Manual**).[68] The Gas Manual incorporates the record keeping requirements in the Gas Compendium.

Electricity Networks Access Code

The *Electricity Networks Access Code 2004* (**Access Code**) provides the framework for the independent regulation of certain electricity networks in the State. The objective of the Access Code is to promote the economically efficient investment in, and operation and use

[66] National regulatory reporting for electricity distribution and retailing businesses, Utility Regulators Forum, March 2002.

[67] The Compendium of Gas Customer Licence Obligations (Gas Compendium) is made by the Authority pursuant to section 11M and Schedule 1A of the Gas Act. Obligations in the Gas Compendium are included in gas licences as conditions of the licence.

[68] Gas Compliance Reporting Manual, which can be found on the Authority's website: http://www.erawa.com.au/gas/gas-licensing/regulatory-guidelines

of, networks and services of networks in the State and to promote competition in electricity retail and wholesale markets.

The ERA is responsible for regulating third party access to regulated or 'covered' electricity networks. Since the commencement of the Access Code, the only covered network in the State is Western Power's network within the South West Interconnected System (**SWIS**), which comprises most, but not all of the South West Interconnected Network (**SWIN**).[69]

The Access Code requires Western Power to provide third parties access to its transmission and distribution network through an Access Arrangement.[70] Access arrangements detail the terms and conditions, including prices, which apply to third parties seeking the use of regulated electricity networks. Western Power's access arrangement for the first access arrangement period (2006/07 to 2008/09, "AA1") was approved by the ERA on 26 April 2007, to become effective from 1 July 2007. Revisions to this access arrangement for the second access arrangement period (2009/10 to 2011/12, "AA2") were approved by the ERA on 19 January 2010, to become effective from 1 March 2010. The ERA published its final decision on the third access arrangement ("AA3") for the period 2012/13 to 2016/17, on 5 September 2012. The ERA considered Western Power's Amended Proposed Access Arrangement[71] and published a Further Final Decision on 29 November 2012. The Amended Proposed Access Arrangement commenced on 1 February 2013.

Each access arrangement sets out a number of reference services that may be purchased from Western Power by a third party, the pricing of each service[72] and the service standard benchmarks that are to be met for each reference service. The majority of the reference services relate to the distribution network. Western Power is required to provide to the ERA an annual report on its performance against the service standard benchmarks.

[69] The SWIS includes the coastal area from Kalbarri to Bremer Bay and the Goldfields. The distribution and transmission systems that supply this area are collectively known as the South West Interconnected Network (**SWIN**).

[70] Details of the Access Arrangement can be found on the Authority's website: http://www.erawa.com.au/electricity/electricity-access/western-power-network/access-arrangement

[71] The current 2009 -2012 approved access arrangement continues in effect until a revised access arrangement is approved.

[72] Pricing matters are covered in Chapters 6 to 8 of the Access Code.

Appendix 9 - Development of the Western Australian Energy Market

Historically, the Western Australian energy sector for small use customers has been dominated by government owned monopoly utilities. The State Energy Commission of Western Australia (**SECWA**) was established on 1 January 1975 as an amalgamation of the State Electricity Commission of Western Australia (established in 1945) plus the Fuel and Power Commission.

On 1 January 1995, SECWA was split into separate gas and electricity utilities: AlintaGas and Western Power Corporation. Both of these entities have subsequently been disaggregated into other businesses that focus on particular segments of the energy market. The following sections provide further details of the disaggregation of the utilities and the development of licensed electricity and gas distribution network providers.

Electricity distribution

In 2006, the Government restructured Western Power Corporation into four new statutory Corporations:

- Electricity Networks Corporation (t/a Western Power): operates the majority of the transmission and distribution networks within the SWIS;
- Electricity Retail Corporation (t/a Synergy): retails electricity within the SWIS;
- Regional Power Corporation (t/a Horizon Power): vertically integrated electricity business that operates a number of small distribution systems in areas of the State outside the SWIS; and
- Electricity Generation Corporation (t/a Verve Energy): operates the former Western Power generation facilities.

The restructuring of the former Western Power Corporation followed the deregulation of electricity supply in the State, with the commencement of the Electricity Act.

In April 2013, the government announced the merger of Synergy and Verve into a single entity. The reasons cited for the merger was the need to deliver improved efficiencies in electricity delivery to consumers. On 1 January 2014, Verve and Synergy were merged into a single entity trading as Synergy.

The Electricity Act includes provisions for the licensing of electricity supply and in particular, Part 2 of the Electricity Act sets out the provisions pertaining to the licensing scheme for electricity service providers. The Electricity Act prescribes five classes of electricity licence:

1) Distribution – construct and operate electricity distribution networks.
2) Generation – construct and operate electricity generation plant.
3) Retail – sell electricity to customers.
4) Transmission – construct and operate electricity transmission networks.
5) Integrated Regional – undertake one or more of the activities listed in (1) to (4) above.

Since the introduction of the electricity licensing scheme in 2005, there has been a total of nine distribution licences issued by the ERA. Some of these licences have subsequently

been surrendered, leaving a total of six distribution licences active as at 30 June 2012.[73]

Gas distribution

Following the split of SECWA in January 1995, the SECWA gas retail and distribution businesses were transferred to AlintaGas, which was formed in January 1995 as an integrated gas distribution and retail business that also had ownership of the Dampier to Bunbury Natural Gas Pipeline (**DBNGP**). As part of the government's policy of privatisation, the DBNGP was later sold in 1998, and is now owned and operated by the DBNGP consortium. AlintaGas retained ownership of the gas distribution and retail operations.

In 1999, the Gas Act was amended to facilitate the privatisation of AlintaGas and implement a licensing scheme covering the supply of gas to small use customers.

AlintaGas was publicly listed on the Australian stock exchange in July 2000. The privatised AlintaGas was restructured into separate distribution and retail businesses:

- Alinta Sales assumed ownership of the retailing operations of AlintaGas; and
- AlintaGas Networks - assumed ownership of AlintaGas' distribution networks in the Coastal, Goldfields-Esperance and Great Southern licence areas.

Part 2A of the Gas Act regulates the licensing scheme for gas distributors and retailers who supply small use customers. The Gas Act prescribes two classes of gas supply licence:

a) Distribution - which authorises the licensee to construct a distribution system and transport gas through it, or to transport gas through an existing distribution network.

b) Trading - which authorises the licensee to sell gas to small use customers that is transported through a distribution network.

Since the introduction of the gas licensing scheme in 1999 there has been a total of four gas distribution licences[74] issued by the ERA and its predecessor, the Office of Energy. One of these licences has subsequently been surrendered, leaving a total of three distribution licences active as at 30 June 2012.

[73] Details of electricity licenses can be found on the Authority's web site: http://www.erawa.com.au/licensing/electricity-licensing/licence-holders

[74] Prior to 2008, licences were associated with a single supply area. At that time there were six licences issued to three licensees. The amendment of gas licences in August 2007 resulted in a single licence covering multiple supply areas, which reduced six licences to three. The fourth licence was issued to Origin Energy in 2008 for the Mid-West supply area.