2015 Annual Performance Report – Energy Distributors

February 2016

Economic Regulation Authority
WESTERN AUSTRALIA

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Economic Regulation Authority
Perth, Western Australia
Phone: (08) 6557 7900

Key Points

- Customer connections on electricity systems grew by 2.4%, to 1.13 million, and gas connections grew by 3.1%, to 716,000.
- 13.3% of Horizon Power's customers experienced a supply interruption longer than 12 hours, which resulted in a record 1,618 service standard payments to affected customers. Most of the interruptions were caused by Tropical Cyclones.
- 52% fewer ATCO customers experienced long supply interruptions (>12 hours) than last year.
- Western Power resolved 80.7% of all customer complaints within 15 business days, a six year record.
- All three electricity distributors reported improved call centre performance in 2015; the improvements by the Horizon Power and Western Power are partly attributable to the new online communications channels which reduced the number of phone calls.
- The volume of calls to the ATCO call centre reached a six year peak of just over 84,000 calls.
- Western Power reduced the number of those customers who were not provided with the required 72 hours' notice for a planned interruption to 341, a six year low.

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 that 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.

This report covers three key areas: customer's access to a supply (disconnections and reconnections), distribution network reliability; and customer service (complaints and telephone service).

[1] Each report covers the year from 1 July to 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.

Customer Connections

Electricity Distributors

Connections on electricity distribution systems have increased

The state-wide total number of customer connections on electricity distribution systems grew by 2.4%, to 1.13 million connections. Connections increased on Western Power's systems by 2.4%, and on Horizon Power's systems by 2.8%.

The South West Interconnected Network (**SWIN**)[3] operated by Western Power accounts for 95.7% of total connections on the State's electricity distribution systems.

Between 2014 and 2015, the state-wide total number of new customer connections grew by 9.8%. The number of new customer connections on Western Power's systems reached a six year peak of 33,925, up 14.9% on last year. The percentage of these new connections that were delivered within the timeframe agreed with the customer also reached a six year peak of 99.4%.

Compared to last year, the number of new connections on Horizon Power's systems were down by 43.7% in 2015, reaching a six year low of 1,576. 99.0% of the new connections were delivered within the timeframe agreed with the customer.

Gas Distributors

Connections on the ATCO distribution systems have increased

During 2015, the state-wide total number of customer connections on gas distribution systems increased by 3.1%, to just under 716,000 connections. Total connections increased on ATCO's distribution systems by 3.1%, and on the Esperance Power Station distribution system by 4.4%. Kleenheat reported a 3.6% reduction in connections.

The number of new customer connections on ATCO's distribution systems hit a six year peak of 23,734 in 2015, 99.99% of which were delivered within the timeframe agreed with the customer.

Distribution System Reliability

Electricity Distributors

Electricity distributors are required to report on their system reliability under two regulatory frameworks in Western Australia: the *Electricity Industry (Network Quality & Reliability of Supply) Code 2005* (**NQ&R Code**), and the 2002 SCONRRR

[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.

Framework.[4] For more information on these frameworks, please refer to pages 8 and 12 of this report.

NQ&R Code

Tropical Cyclones cause more extended supply interruptions

The percentage of Horizon Power customers experiencing an extended supply interruption (longer than 12 hours) rose to a six year high of 13.3% in 2015. The majority of the interruptions were caused by Tropical Cyclones Olwyn and Quang.

The percentage of Western Power customers experiencing an extended supply interruption fell to a six year low of 3.4% in 2015.

Reductions in the number of multiple supply interruptions[5]

In 2015, the number of customers in the Perth CBD and major urban areas who experienced more than nine supply interruptions fell to a six year low of 4,755. The number of customers in the other areas of the state (**Rural areas**) who experienced more than 16 supply interruptions also fell: Horizon Power reported 106 customers were affected, which is a six year low; while Western Power reported 3,912 customers were affected, which is lower than last year (5,154 customers) but much higher than the six year average (2,413).

The average length of interruptions fell in the Perth CBD and urban areas

The average length of customer supply interruptions in the Perth CBD was 33 minutes in 2015, down from 35 minutes last year. The average length of customer supply interruptions in major urban areas was also lower, down from 343 minutes last year to 326 minutes in 2015. The average length of interruptions in both the Perth CBD and major urban areas exceeded the thresholds prescribed in the NQ&R Code: 30 minutes and 160 minutes respectively.

In the Rural areas, Horizon Power reported a slight rise in the average length of supply interruptions on their systems, up from 330 minutes last year to 373 minutes in 2015; while the average length of power cuts in Western Power's Rural networks has increased from 679 minutes to 1,030 minutes. Western Power attributes some of the deterioration in performance to maintenance and repair work they have been undertaking. The RIA's performance was almost unchanged from last year, and it was the only distributor to meet the prescribed threshold of 290 minutes.

2002 SCONRRR Framework

The measurements reported under the 2002 SCONRRR Framework provide more information about the cause(s) of supply interruptions. The base measurement (overall interruptions) is the same as under the NQ&R Code, whereas the normalised interruption measurement removes all of the unplanned interruptions caused by events beyond the reasonable control of the distributor. The normalisation process also removes days where the duration of unplanned interruptions significantly exceeds the long-run average performance of the network,

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

[5] The NQ&R Code specifies the threshold of nine interruptions for Perth CBD and major urban areas, and 16 interruptions for other areas of the state.

as these interruptions are likely to be caused by one-off major events. See pages 12-13 for more information.

The overall average length of unplanned supply interruptions were similar to last year

Total Network SAIDI[6] measures the average duration of unplanned customer supply interruptions for each distributor's systems.

In 2015, the value of Total Network SAIDI for all three distributor's systems was almost unchanged from last year: 151 minutes (158 minutes in 2014) for Horizon Power; 169 minutes (172 minutes in 2014) for Western Power; and zero for the RIA.[7]

Looking at the SAIDI for each individual feeder class in 2015,[8] the most significant changes from last year are: Horizon Power's Urban feeders (down from 83 minutes to 60 minutes),[9] Horizon Power's Long Rural feeders (down from 542 minutes to 457 minutes), and Western Power's CBD feeders (up from 18 minutes to 26 minutes).

Gas Distributors

Fewer gas customers experienced long supply interruptions than last year

A total of 743 ATCO customers experienced a long (>12 hours) unplanned supply interruption in 2015, down from 1,534 customers last year. A single incident involving a broken gas main accounted for 258 of the 743 customer interruptions.

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 *Code of Conduct for the Supply of Electricity to Small Use Customers 2014* (**Electricity Customer Code**).

More than half the QoS complaints that could be diagnosed related to low voltage

Horizon Power and Western Power[10] received a total of 1,921 QoS complaints in 2015, down from 2,048 complaints last year.

Just under 75% of the 1,921 QoS complaints were categorised as "other", which captures issues that fall outside the seven specified technical problem categories in the 2002 SCONRRR Framework. Of the 507 complaints that were categorised, 333

[6] One of the measurements reported on under the 2002 SCONRRR Framework is SAIDI: System Average Interruption Duration Index, which measures the annual average length of unplanned supply interruptions to customer premises, measured in minutes.

[7] All of the supply interruptions on the RIA system were caused by generator outages, which are excluded from the normalised data.

[8] There are four feeder classes: CBD, Urban, Short Rural (<200km long), and Long Rural (>200km long).

[9] The improvement in Urban SAIDI was due to the Pilbara Underground Power Project.

[10] The RIA did not receive any QoS complaints in 2015.

complaints related to low supply voltage, and 147 complaints related to TV or radio interference.

Of the 1,921 QoS complaints, 581 related to network issues in 2015: 327 complaints related to faulty network equipment, 237 complaints related to network limitations, and 17 complaints related to network interference. The distributors were unable to identify a cause for 1,044 complaints.

More complaints about issues covered by the Electricity Customer Code

The total number of complaints about Electricity Customer Code issues rose from 838 in 2014 to 904 this year. In both years, Western Power received the majority of the complaints (547 in 2014 and 660 this year).

Of the 660 complaints received by Western Power in 2015, 68 complaints related to billing and 592 complaints related to other matters.

Horizon Power received 244 complaints in 2015, which is close to the six year average of 242 complaints. 168 of the 244 complaints related to administrative and customer service issues.

Distributors improve complaint resolution performance

Horizon Power resolved 64.1% of the combined NQ&R and Electricity Customer Code complaints within 15 business days in 2015, which is an improvement on the last two years (62% in 2014 and 55% in 2013), but still well below the 100% achieved in the three years to 2012. The relatively poor complaint resolution performance in 2013 coincided with the increased volume of complaints received during the year because of billing system problems.

Over the past six years, Western Power has incrementally improved their complaint resolution performance: the resolution of the combined complaints under the NQ&R Code and the Electricity Customer Code within 15 business days has risen from 33% in 2010 to 80.7% in 2015.

Gas Distributors

Complaint reporting categories for gas distributors include: connection and augmentation; supply quality; supply reliability; network charges and costs; and administrative processes or customer service.

Complaints received by ATCO were much higher in 2015

ATCO is the only distributor that has received complaints every year. In 2015, ATCO received 236 complaints, up from 25 complaints last year.[11] Of the 236 complaints received in 2015, 56% related to customer service; and 30% were classified as "other" complaints. The remaining 14% of complaints were spread across the other four complaint categories.

[11] Prior to 2015, ATCO excluded complaints that were resolved during the first contact with the customer.

Call Centre Performance

Electricity Distributors

Volume of calls to electricity distributors much lower in 2015

Compared to last year, the total volume of calls to the three distributor call centres was 20.7% lower (from 474,655 to 405,060 calls). The two largest distributors both reported lower call volumes - Horizon Power down by 20.7% and Western Power down by 14.7% - while the RIA reported an 8.2% increase in call volume.

All three distributors reported improved call centre performance

Western Power attributed the lower volume of calls to the introduction of a new mobile phone friendly power outage webpage, which has seen a threefold increase in the number of customers visiting the website instead of calling the call centre. The call centre performance in 2015 was the best it has been over the past six years: average wait time for a call to be answered was 11 seconds; 84.6% of calls were answered within 30 seconds; and only 3.9% of calls were unanswered.

Because Horizon Power didn't begin reporting standalone performance data for their distribution calls until 2014, any comparison of relative performance has been limited to 2014 and 2015.[12] Compared to last year, Horizon Power improved their call centre performance: the average wait time for a call to be answered fell from 40 to 25 seconds; the percentage of calls answered within 30 seconds rose from 69.0% to 79.3%; and unanswered calls fell from 15.1% to 8.9%.

Compared to last year, the RIA reported modest improvements in two of the three performance measures: the percentage of calls answered within 30 seconds rose from 90.8% to 93.3%; and unanswered calls fell from 2.7% to 2.5%.

Gas Distributors

Calls to the ATCO call centre hit a six year peak

The total volume of calls to the two gas distributors that have call centres (ATCO and Kleenheat) increased by 1.4% (from 313,086 to 317,469 calls). The volume of calls to the ATCO call centre increased by 8.7%, to a six year peak of 84,106 calls; and calls to the Kleenheat fell slightly (from 235,698 to 233,363)[13].

The increased volume of calls to ATCO resulted in a modest deterioration in performance: average wait time for a call to be answered increased from 27 to 30 seconds; the percentage of calls answered within 30 seconds fell from 80.9% to 75.8%; and unanswered calls increased from 2.7% to 2.8%.

The performance of the Kleenheat call centre was almost unchanged from last year, which is consistent with the relatively unchanged volume of calls that it handled.

[12] Up until 2013, Horizon Power reported performance for all of their call centre calls, which combined calls about distribution and retail issues, with the latter accounting for a significant majority of the calls.

[13] Kleenheat's call centre handles calls related to business areas other than distribution.

Service Standard Payments

Horizon Power payments for extended supply interruptions reach a new peak

Electricity distributors are required to make payments to customers who experience a supply interruption exceeding 12 hours in duration (see page iii). In 2015, Horizon Power's payments (1,618) reached a six year peak, while Western Power's payments (7,509) presented a six year low. Most of the supply interruptions that led to payments by Horizon Power were caused by two Tropical Cyclones (Olwyn and Quang); whereas Western Power's higher figure is partly explained by the size of the network.

Electricity distributors are also required to make payments for a failure to provide an adequate (72 hours) notice to customers before a planned interruption. Western Power's payments (341) was a six year low in 2015. This suggests that Western Power has been improving its capacity to provide the required notice.

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Purpose of this Report

This is the latest in the series of the Economic Regulation Authority's (**ERA**) annual reports that examine the performance of electricity distributors and gas distributors who supply small use customers[14] in Western Australia. Throughout this report reference to a customer means a small use customer.

This report covers the financial year of 1 July 2014 to 30 June 2015. The purpose of this report is to bring transparency and accountability to the performance of energy distribution businesses who service small use customers, in relation to:

All distributors:

Customer Connections: information about the total number of small use customer 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.

Electricity distributors only:

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 the Electricity Customer Code and the NQ&R Code.

Street Lighting: measures the proportion of faulty street lights that are repaired by a distributor within the prescribed standards.

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.

The ERA is the independent economic regulator for Western Australia. The ERA licenses providers of gas, electricity and water services and monitors compliance with licensing conditions and other related regulatory obligations.

The ERA also assesses the terms and conditions, including prices, offered by owners of monopoly infrastructure to third parties in the gas, electricity and rail industries.

In addition, the ERA has a range of responsibilities in gas retailing and surveillance of the State's wholesale electricity market.

[14] ERA licence holders permitted to distribute electricity or gas to small use customers, i.e. customers who consume less than 160MWh of electricity or less than 1TJ of gas per annum.

Energy Distribution Market Information

This section of the report discusses the distributors who have small use customers connected to their distribution systems. It 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.

Detailed information about the regulatory framework of energy distributors in Western Australia (including terminology used in this report) can be found in **Appendix 8**, while **Appendix 9** provides an overview of the historical development of the Western Australian energy market.

Energy Distributors

The number of licensed electricity and gas distributors has remained almost unchanged since 2005-06, when the current regulatory framework commenced.

When the *Electricity Industry Act 2004* (**Electricity Act**) commenced in 2005, existing electricity distributors 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. Two of the eight distributors who have been licensed since 2005 have subsequently surrendered their licence, both in 2010, and one new licence was granted in 2013.

The ERA took over responsibility for licensing gas distributors from the Office of Energy[15] in 2005. At that time there were three licensed gas distributors, all of whom are still licensed today

Table 1 details the number of licensed electricity and gas distributors during the six year period ending 30 June 2015.

Table 1: Number of licensed distributors

	2010	2011	2012	2013	2014	2015
Electricity						
Licensed Distributors	6	6	6	6	7[16]	7
Distributing to small use customers	3	3	3	3	3	3
Gas						
Licensed Distributors[17]	3	3	3	3	3	3

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

[16] In the 2013-14 report, this figure was erroneously reported to be 6 instead of 7.

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

Electricity

The number of electricity licensees 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, the SWIN[18] that covers the geographic area from Kalbarri to Albany and from Perth to the Goldfields.

Horizon Power operates the NWIS[19] and 35 islanded distribution systems in regional towns and remote communities across the State.[20]

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

As in the case of electricity, the number of distributors supplying gas to small use customers has remained unchanged since 2005.

ATCO Gas Australia Pty Ltd (**ATCO**)[21] operates the natural gas distribution system supplying the coastal area from Geraldton to Busselton, covering the Greater Perth area; and the Goldfields-Esperance area, covering Kalgoorlie. ATCO also operates the distribution system that supplies LPG[22] in Albany and surroundings.

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

Esperance Power Station Pty Ltd operates a gas distribution system of a length of 35km in Esperance.

[18] The South West Interconnected Network.

[19] The North West Interconnected System located in the Pilbara region of the State that is supplied by generation plants in Dampier, Port Hedland and Cape Lambert.

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

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

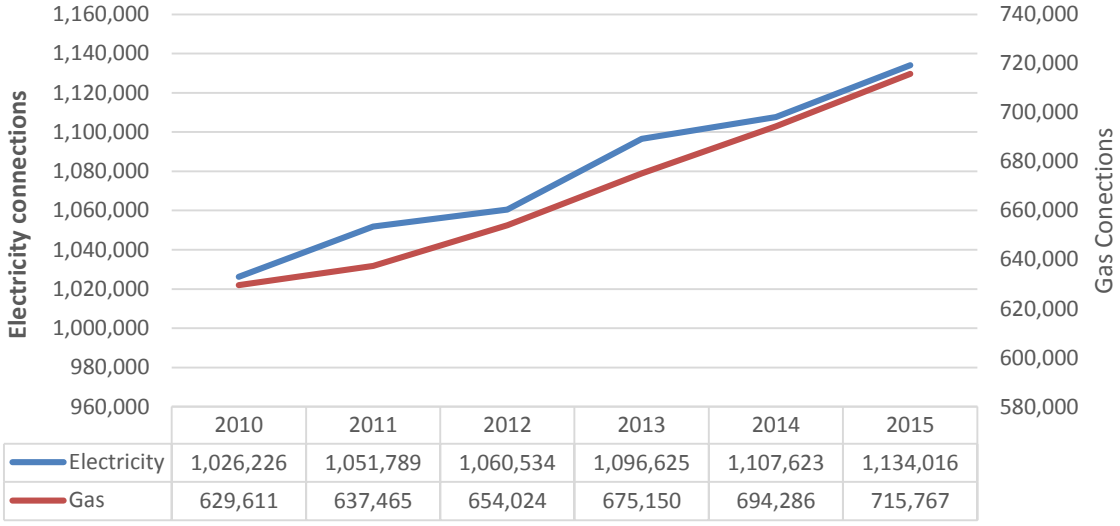
[22] Liquefied Petroleum Gas.

Customer Connections

This section looks at the overall number of connections on electricity and gas distributors' networks; the number of new connections provided each year; and the timeliness of new connections, or the reconnection of disconnected premises.

Figure 1 details the total number of connections on electricity and gas distribution systems in the State. During 2015, the state-wide number of electricity connections increased by 2.4% and the state-wide number of gas connections increased by 3.1%. Since 2010, electricity connections have risen by 10.5%, and gas connections have risen by 13.7%.

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



	2010	2011	2012	2013	2014	2015
Electricity	1,026,226	1,051,789	1,060,534	1,096,625	1,107,623	1,134,016
Gas	629,611	637,465	654,024	675,150	694,286	715,767

Connections on electricity distribution systems

Table 2 details the number of connections on each electricity distributor's system. Western Power, who operates the SWIN, accounts for 95.7% of the total state-wide connections.

During 2015, the number of customer connections increased by 2.4% on the Western Power system (SWIN); and by 2.8% on the Horizon Power systems, both of which are in line with the annual average population growth in WA.[23] The number of connections on the Rottnest Island Authority distribution system has remained unchanged since 2012.

Table 2: Electricity connections by distributor

Distributor	2010	2011	2012	2013	2014	2015
Horizon Power	41,143	43,181	44,328	45,866	46,582	47,832
Rottnest Island Authority	83	83	527[24]	527	527	527
Western Power	985,000	1,008,525	1,015,679	1,050,232	1,060,588	1,085,657
State Total	**1,026,226**	**1,051,789**	**1,060,534**	**1,096,625**	**1,107,623**	**1,134,016**

[23] The annual average population growth in WA for the past ten years has been 2.6% (Government of Western Australia, Department of State Development: Western Australia Economic Profile, September 2015).

[24] In 2012, the total number of connections was amended to include multi-unit dwellings and holiday accommodation, as these units are separately metered.

Table 3 details the number of new connections established by electricity distributors in 2015. The total number of new connections established on electricity distribution systems in 2015 was 9.8% higher than last year. New connections established by Western Power were up by 14.9%, while new connections established by Horizon Power were down by 43%, presumably in line with the building activities in each distributor's supply area.

Table 3: New connections on electricity distribution systems

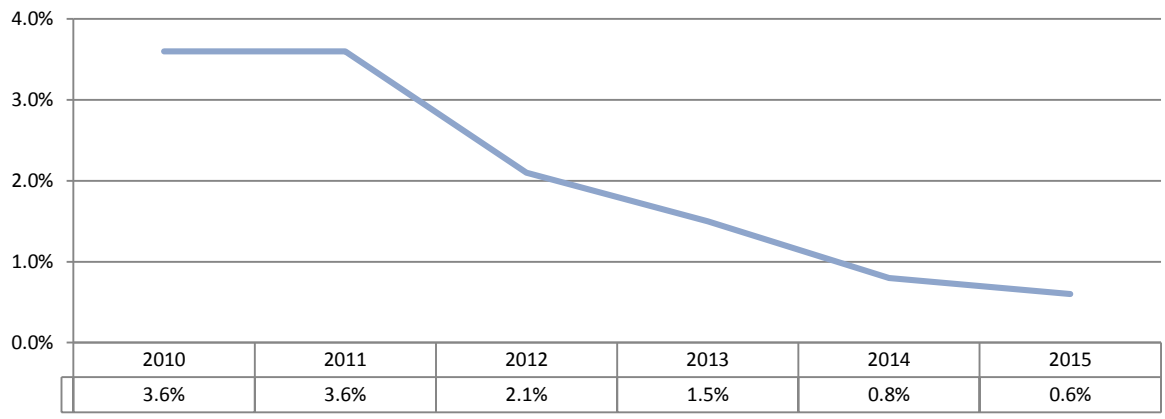
Distributor	2014			2015		
	Number of new connections	Connections not on time	% of connections not on time	Number of new connections	Connections not on time	% of connections not on time
Horizon Power	2,797	22	0.8	1,576	16	1.0
Rottnest Island Authority	0	-	-	0	-	-
Western Power	29,532	223	0.8	33,925	189	0.6
State Total	**32,329**	**245**	**0.8**	**35,501**	**205**	**0.6**

Comparison of the number of new connections established by Horizon Power and Western Power during 2015 with the net increase in the total number of connections in 2015 (Table 2) shows that the increase in the total connections (Table 2) is less than the total number of new connections provided (Table 3). There are a number of reasons for this difference, such as:

- The new connections data includes some premises that are fitted with a small use connection but, when energised, go on to consume more than 160MWh per annum (over the small use customer threshold). This then excludes these connections from the total connections data.
- Some connected premises (such as buildings being demolished) may become permanently disconnected during the reporting year.
- Some of the new connections established each year do not begin to consume electricity until after the reporting period.

Electricity distributors are subject to timeliness requirements when connecting a new premises; the *Electricity Industry (Obligation to Connect) Regulations 2005* prescribe the conditions for, and the time frames associated with, establishing a new connection to an electricity distribution system. Figure 2 shows that Western Power's on time delivery of new connections has significantly improved since 2010. In 2015, 99.4% of new connections were established on time, which is a six year record in timeliness.

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 99.82% of total gas connections in 2015.

Between 2014 and 2015, the state-wide total number of new connections on gas distribution systems increased by 3.1%; almost all of the growth was on the ATCO distribution systems (up by 3.1%). The number of connections on the Esperance Power Station distribution systems increased by 4.4%, whereas connections on the Kleenheat distribution systems fell by 3.6%.

Table 4: Gas connections by distributor

Distributor	2010	2011	2012	2013	2014	2015
ATCO	628,537	636,323	652,808	673,878	692,988	714,488
Esperance Power Station	266	280	313	332	342	357
Kleenheat	808	862	903	940	956	922
State Total	**629,611**	**637,465**	**654,024**	**675,150**	**694,286**	**715,767**

Table 5 shows the number of connections that were provided outside the time frame agreed with the customer. In 2015, Kleenheat reported that 18.6% of the connections (8 out of 43 connections) were provided late. ATCO reported a minor increase in late connections: in 2015, 0.06% of all new connections were late, up from 0.01% in 2014.

Table 5: New connections on gas distribution networks

	2014			2015		
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	20,273	2	0.01	23,734	14	0.06
Kleenheat	15	0	0	43	8	18.6
Esperance Power Station	8	0	-	12	0	-
State Total	**20296**	**2**	**-**	**23,789**	**22**	**0.09**

Reconnections on electricity and gas distribution systems

Recent amendments to the Electricity Customer Code and the *Compendium of Gas Customer Licence Obligations* (**Gas Compendium**) require electricity distributors and gas distributors to report on their performance for reconnecting supply to a customer premises in accordance with the relevant prescribed time frames. Information on the timeliness of electricity and gas customer reconnections can be found in Appendix 7, Table 45.

Distribution System Reliability

Electricity Supply Interruptions

This section discusses the supply interruption standards that distributors are required to report against under section 12 of the NQ&R Code:

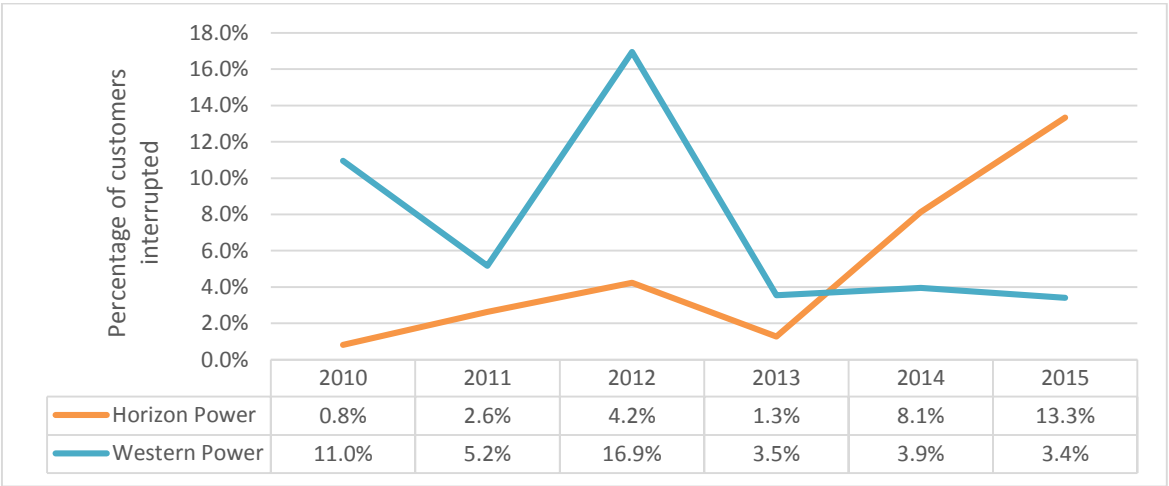
- The number of customer premises that have experienced interruptions that exceed 12 hours continuously (**extended interruption**).
- The number of customer premises in the Perth CBD and Urban areas that have experienced more than 9 interruptions during the reporting period.
- The number of customer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

Electricity distributors are required to report under two regulatory frameworks: the NQ&R Code; and the 2002 SCONRRR Framework.[25]

It is important to note that the NQ&R Code does not distinguish between planned and unplanned interruptions, which differs from other reliability measurement frameworks.

Figure 3 shows the percentage of customer premises on the Horizon Power and Western Power distribution systems that have experienced an extended interruption over the past six years.[26] The number of extended interruptions varies from year to year due to unpredictable environmental factors (such as severe weather or bush fires).

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



	2010	2011	2012	2013	2014	2015
Horizon Power	0.8%	2.6%	4.2%	1.3%	8.1%	13.3%
Western Power	11.0%	5.2%	16.9%	3.5%	3.9%	3.4%

Over the past six years, the percentage of customer premises on Western Power's systems that have experienced an extended interruption has fluctuated between 3.4% and 16.9%.[27]

[25] National Regulatory Reporting for Electricity Distribution and Retailing Businesses, Utility Regulators Forum, March 2002. The document was developed by the Steering Committee on National Regulatory Reporting Requirements (SCONRRR).

[26] 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.

[27] The peak in 2012 was caused by major storms that interrupted supply to a large number of customers across the south west and south of the State.

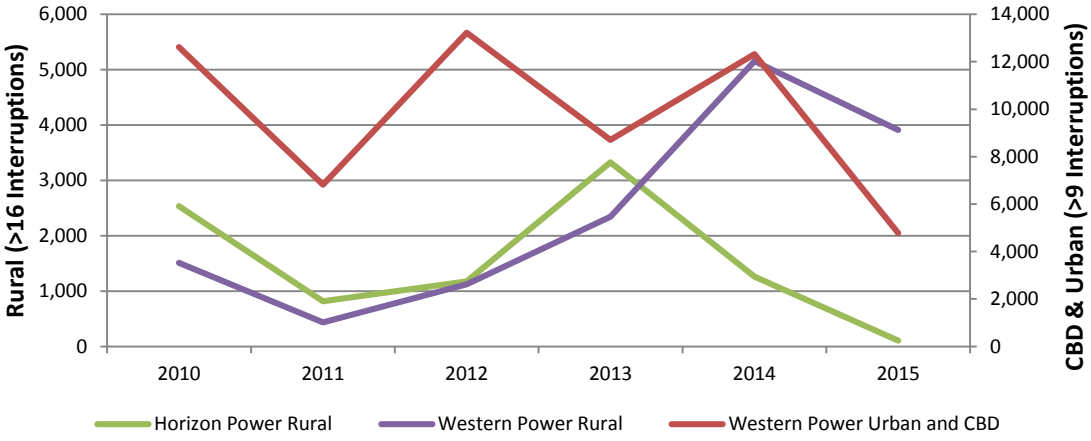
In 2015, only 3.4% of Western Power's customers experienced an interruption longer than 12 hours, which is a six year low.

The number of extended interruptions on the Horizon Power systems rose to a six year high in 2015, with 13.3% of customers affected. The majority of the interruptions were caused by Tropical Cyclones Olwyn and Quang.

Rottnest Island Authority reported that there were no extended interruptions to customer premises during 2015.

Figure 4 details the number of customer premises that experienced more than the prescribed number of interruptions (**excess interruptions**) in the Perth CBD and Urban areas,[28] exclusively supplied by Western Power, and in Rural areas,[29] which are supplied by all three distributors.[30]

Figure 4: Multiple supply interruptions on electricity distribution systems



Examination of Figure 4 shows that the number of customer premises experiencing excess interruptions is highly variable from year to year. In 2015, 4,755 customer premises in Urban areas and the Perth CBD experienced more than nine interruptions, which is a six year low. In Rural areas supplied by Western Power, 3,912 customer premises experienced more than 16 interruptions (62.1% higher than the six year average of 2,413).

In 2015, the number of customer premises on Horizon Power's Rural systems that experienced excess interruptions fell to a record low of 106; the six year average for Horizon Power is 1,538 affected customers per annum.

Multiple interruptions are often caused by external factors such as extreme weather conditions (storms etc.) and external factors (such as water damage or third party damage to powerlines) which result in significant variations in this indicator year on year.

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

[29] The NQ&R Code defines Rural areas as being all other areas of the State other than the Perth CBD and Urban areas.

[30] 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.

Gas Supply Interruptions

The performance measures for gas supply interruptions discussed in this section are:

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

The Gas Compendium and the ERA's *Gas Compliance Reporting Manual* (**Gas Manual**) require gas distributors to report on interruptions to supply of customer premises. These indicators are similar to the performance measures applying to electricity distributors detailed in the previous section.

In 2015, ATCO was the only distributor to report customer premises experiencing five or more supply interruptions during the reporting year: a single premises was affected. This is only the second time that a distributor has reported five or more interruptions of supply to a customer since reporting commenced seven years ago; ATCO reported one premises was affected in 2014.

ATCO reported that 743 customers experienced a supply interruption that exceeded 12 hours continuously during 2015, down from 1,534 customers in 2014. ATCO commented that 258 of the 743 customers experienced an interruption because of third party damage to a main, and the remaining 485 customers experienced interruptions because of 17 separate water ingress incidents.

Electricity Distribution Network Reliability

NQ&R Code

The NQ&R Code requires electricity distributors to report against a set of indicators in relation to the length of supply interruptions to customer premises. These indicators are intended to provide transparency on how often customers experience electricity outages and how long these outages last.

Schedule 1[31] of the NQ&R Code requires electricity 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 (the total length of all network interruptions divided by the total number of customer premises connected to the network);
- average length of interruption of supply to affected customer premises expressed in minutes (the total length of all interruptions divided by the total number of customer premises connected to the network that actually experienced a supply interruption);
- average number of interruptions of supply to affected customer premises (the total number of network interruptions divided by the total number of customer premises connected to the network); and
- average percentage of time that electricity has been supplied to customer premises.

Further, 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 the average length, and the average frequency, of interruptions.

Table 6 below 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 take into account the environmental, infrastructure and demographic factors that influence overall system reliability in each discrete area of the State. These standards are aspirational and there are no penalties imposed on distributors who fail to meet the standard.

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

	The Perth CBD[32]	Urban areas (excluding Perth CBD)	Any other area of the State
Average total length of interruptions (minutes per annum)	**30**	**160**	**290**

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

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

Note that the NQ&R Code reliability figures reported in this section do not exclude Major Event Days (**MED**).[33] 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 actions, severe storms, bushfires and other natural disasters.

System Reliability in the Perth CBD and Urban Areas

Western Power is the only distributor that supplies customers in the Perth CBD, and in the Urban areas.

Figure 5: Average total length of interruptions on Perth CBD and urban electricity distribution systems (expressed in minutes)

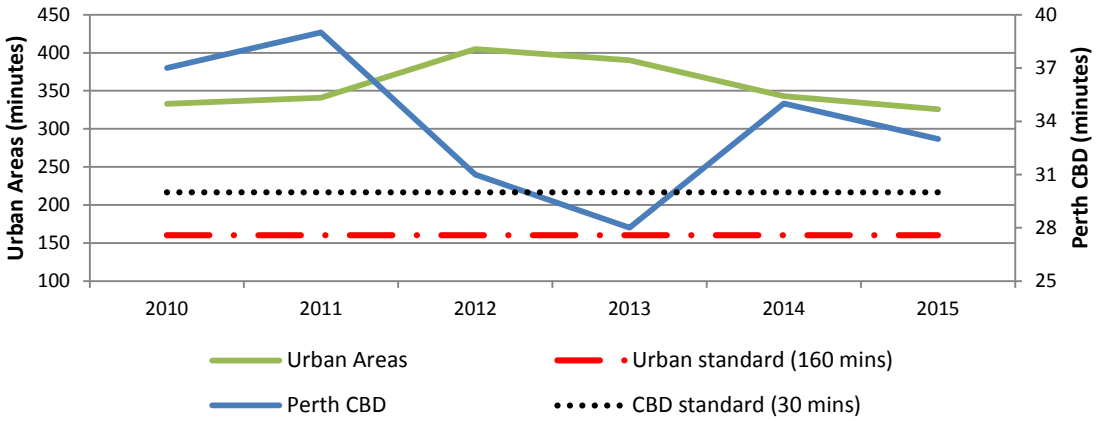
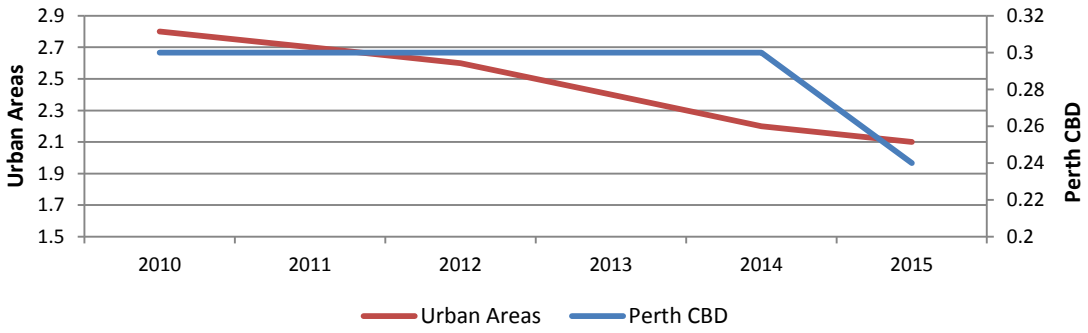


Figure 5 shows that the average total length of interruptions in the Perth CBD fell from 35 minutes in 2014 to 33 minutes in 2015. The average total length of interruptions in Urban areas also fell from 343 minutes in 2014 to 326 minutes in 2015. The total length of interruptions on both the Perth CBD and Urban systems exceeded their respective NQ&R standard – 30 minutes and 160 minutes respectively.[34]

Figure 6 shows that, in 2015, the average frequency of supply interruptions experienced by customers in the Perth CBD (0.24) and Urban areas (2.1) both fell to six year lows.

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



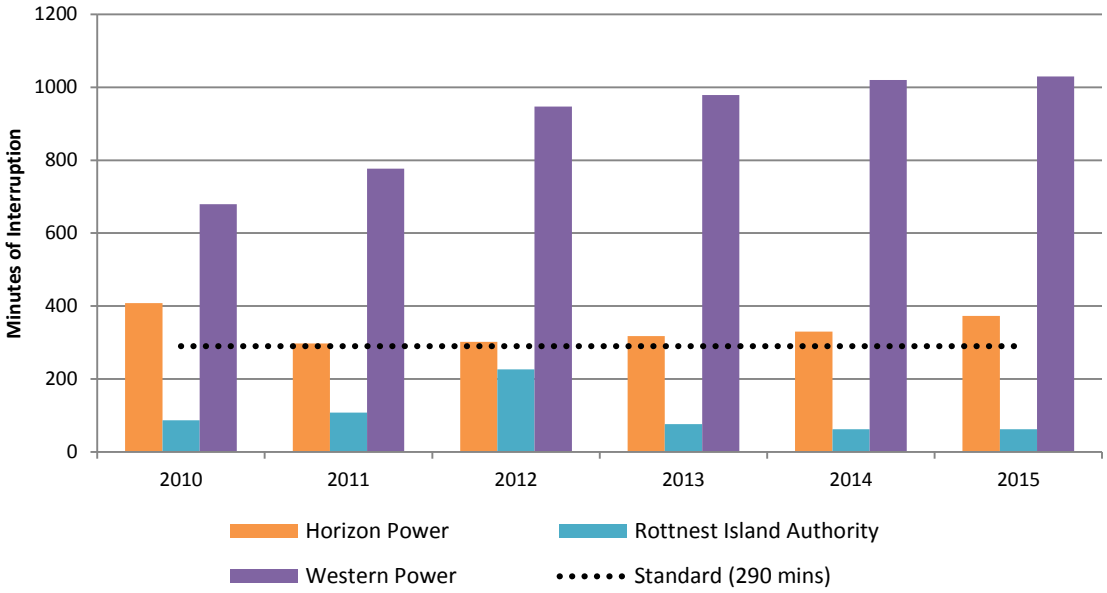
[33] Standard IEEE 1366-2003 - Guide for Electric Power Distribution Reliability Indices, Institute for Electrical and Electronic Engineers defines a Major Event Day as a day in which the system SAIDI exceeds a threshold value T_{med} minutes. T_{med} is calculated from a statistical analysis of the SAIDI data over a specified period of time to identify events that deviate significantly from the average performance of the network.

[34] See footnote 39.

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

Figure 7 details the average total length of interruptions for each distributor's Rural area systems.

Figure 7: Average total length of interruptions on electricity distribution systems in the Rural areas of the State



Rottnest Island Authority is the only distributor that met the 290 minute standard prescribed in the NQ&R Code; in 2015, the average length of interruptions in the Rottnest Island Authority's systems was 62 minutes, the same as last year.

The average length of interruptions on Horizon Power's systems rose from 330 minutes in 2014 to 373 minutes in 2015, a rise of 23%. This was caused by two Tropical Cyclones (Olwyn and Quang) in the north west of the State in March and May 2015.

The average length of interruptions on Western Power's distribution systems continued the long-term upward trend, rising from 1,020 minutes in 2014 to 1,030 minutes in 2015. The 2015 interruption figure exceeds the 290 minute standard by 740 minutes.[35]

Western Power commented that the deteriorating performance was predominantly due to:[36]

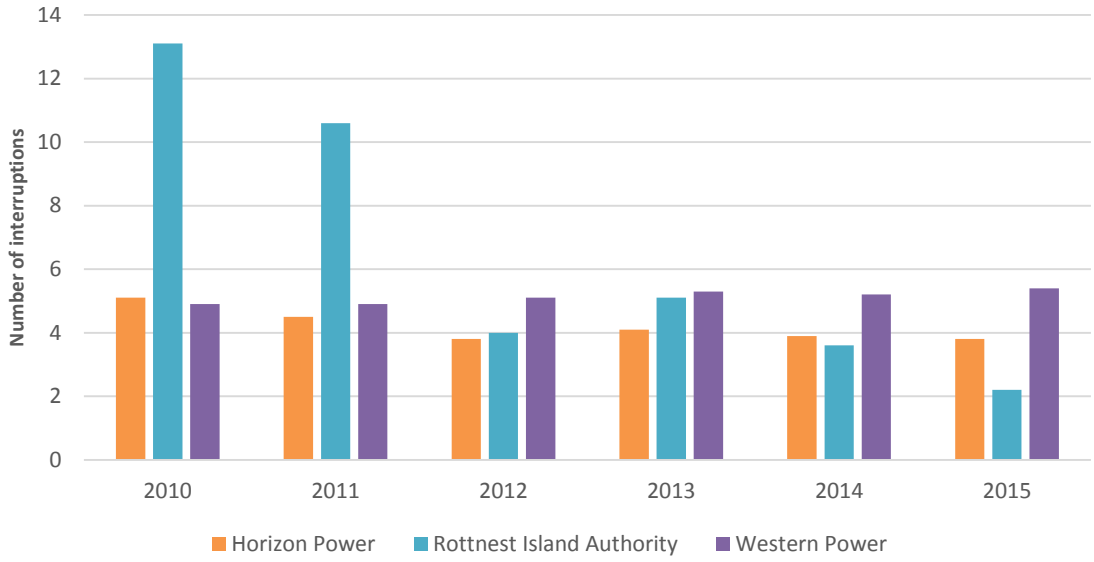
- planned outages resulting from remedial activities which were undertaken in specific areas, including maintenance repairs/alteration work on overhead lines, and repair work on reclosers, switching and protection devices; and
- lightning activity.

Figure 8 details the average frequency of interruptions for each distributor's Rural area systems. It can be seen that the performance of the Horizon Power and Western Power systems in 2015 is almost unchanged from last year. Rottnest Island Authority reported a reduction to 2.4 interruptions, a six year low.

[35] See footnote 39.

[36] Page 15, Western Power Annual Quality and Reliability Report For the period 1 July 2014 to 30 June 2015, dated September 2015.

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



System Reliability Performance (2002 SCONRRR Framework)

This section discusses distribution system reliability in relation to three key performance indicators taken from standard IEEE 1366-2003:

- 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 a sustained interruption as an interruption of more than one minute in duration.

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 (which is defined overleaf)

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.

Table 7: Distribution feeder classifications (SCONRRR)

Description			
CBD[37]	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.

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

Two measures of SAIDI, SAIFI and CAIDI are presented in this section: Overall Interruptions and Normalised Distribution Network – Unplanned Interruptions. The 2002 SCONRRR[38] 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 (see the box below).

Use of Major Event Days to Normalise Interruptions

Prior to 2010, the calculation of the Normalised Distribution Network – Unplanned Interruptions 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[1] 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.

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.

It should be noted that in general, the higher values of long rural feeder SAIDI, compared to the short 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 only represent a small proportion of the overall feeder population in their distribution systems.

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 in 2015.

[38] 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.

Table 8: Overall and normalised SAIDI for each electricity distributor in 2015

Distributor	Overall Average Interruption Duration (minutes per annum)				
	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	501	N/A	85	568	586
Rottnest Island Authority	62	N/A	N/A	62	N/A
Western Power	345	33	210	399	1,323
	Normalised Average Interruption Duration (minutes per annum)				
	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	151	N/A	60	150	457
Rottnest Island Authority	0.0	N/A	N/A	0.0	N/A
Western Power	169	26	103	183	677

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

Table 9 compares the normalised SAIDI values reported by distributors in 2014 and 2015.[39] Total Network SAIDI on the Western Power and Horizon Power networks was almost unchanged (down by 1.8% and 4.4% from the 2014 values respectively). The most significant changes on individual feeder classes were:

- Horizon Power's Long Rural SAIDI, which was down by 15.7% due to asset management projects undertaken on Horizon Power's long rural network;
- Horizon Power's Urban SAIDI, which was down by 27.7%[40]; and
- Western Power's CBD SAIDI, which was up by 44.4%.[41]

Table 9: Comparison of normalised SAIDI for each electricity distributor in 2014 and 2015

	2014					2015				
Distributor	Total Network	CBD	Urban	Short Rural	Long Rural	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	158	N/A	83	151	542	151	N/A	60	150	457
Rottnest Island Authority	0	N/A	N/A	0	N/A	0	N/A	N/A	0	N/A
Western Power	172	18	107	171	673	169	26	103	183	677

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

The normalised SAIDI on the Rottnest Island Authority Short Rural feeders was zero for the second consecutive year. In both 2014 and 2015 all of the interruptions were caused by generator outages.

[39] The comparison of distribution network reliability across the nation is difficult, because the Australian Energy Regulator only publishes a single value for the average unplanned SAIDI for all of the networks in the National Energy Market (NEM). The NEM average unplanned SAIDI was approximately 170 minutes in 2013-14, see figure 2.9 in the AER's *State of the energy market 2015* report which is available on the AER website: www.aer.gov.au

[40] Horizon Power commented that this decrease is a result of the Pilbara Underground Power Project, which has had a positive impact on reducing supply interruptions in Karratha, Port Hedland and South Hedland.

[41] Western Power commented that this increase in the CBD SAIDI was linked to emergency outages caused by an overheated fuse and water damage to switchgear on the underground network.

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 SAIFI values.

One notable exception is the Western Power CBD feeder SAIFI; both the overall and normalised values are 0.2, indicating all of the interruptions on the CBD feeders were unplanned interruptions that did not occur on a MED.

Table 10: Overall and normalised SAIFI for each electricity distributor in 2015

	Overall Distribution network - Average Interruption Frequency (per annum)				
Distributor	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	3.1	N/A	1.3	3.2	7.3
Rottnest Island Authority	2.2	N/A	N/A	2.2	N/A
Western Power	2.4	0.2	1.7	3.0	6.7
	Normalised Distribution network - Average Interruption Frequency (per annum)				
	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	2.7	N/A	1.1	2.8	6.4
Rottnest Island Authority	0.0	N/A	N/A	0.0	N/A
Western Power	1.6	0.2	1.1	2.0	4.4

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

Table 11 compares the normalised SAIFI values reported by distributors in 2014 and 2015. Horizon Power reported a decrease in Urban SAIFI and Short Rural SAIFI and an increase in Long Rural SAIFI. Comparing Horizon Power's Urban system data in Table 11 with that in Table 9 shows that there were fewer interruptions in 2015 than in 2014 and the average duration of each interruption was shorter.[42]

Table 11: Comparison of normalised SAIFI for each electricity distributor in 2014 and 2015

	2014					2015				
Distributor	Total Network	CBD	Urban	Short Rural	Long Rural	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	3.3	N/A	2.4	3.4	5.1	2.7	N/A	1.1	2.8	6.4
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	1.6	0.2	1.1	1.8	5.0	1.6	0.2	1.1	2.0	4.4

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

The SAIFI for all of the Western Power systems in 2015 was similar to 2014. Rottnest Island Authority reported zero SAIFI, which is consistent with the SAIDI result in Table 9.

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

[42] See footnote 35.

of feeder from the SAIDI and SAIFI values occur 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 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 2015

	Overall Distribution Network - Average Interruption Duration (minutes per annum)				
Distributor	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	161	N/A	65	177	81
Rottnest Island Authority	28	N/A	N/A	28	N/A
Western Power	144	166	123	133	197
	Normalised Distribution Network - Average Interruption Duration (minutes per annum)				
	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	55	N/A	53	54	71
Rottnest Island Authority	0.0	N/A	N/A	0.0	N/A
Western Power	108	158	94	92	154

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

Table 13 compares the normalised CAIDI values reported by distributors in 2014 and 2015.

Table 13: Comparison of normalised CAIDI for each electricity distributor in 2014 and 2015

	2014					2015				
Distributor	Total Network	CBD	Urban	Short Rural	Long Rural	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	47	N/A	35	44	106	55	N/A	53	54	71
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	106	93	95	93	135	108	158	94	92	154

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

Horizon Power reported an across the board increase in normalised CAIDI in every feeder category other than Long Rural, where the normalised CAIDI was 33% lower in 2015. This result is consistent with the lower normalised SAIDI on these feeders (Table 9).

The CAIDI on Western Power's CBD feeders was 69.9% higher, and the Long Rural feeder CAIDI was 14.1% higher, in 2015.

Complaints

Electricity Distributor Complaints

The purpose of recording complaints is to report on the level of satisfaction with the distributor's service and to examine the level of customer complaints in specified complaint categories. Electricity distributors record complaints under two different but complimentary regulatory frameworks that capture customer service complaints and technical quality of service complaints.

Complaints Recorded under the SCONRRR 2002 Framework

Table 14 details the technical quality of service (**QoS**) complaints that have been received by distributors during 2015. The historical data for QoS complaints is presented in Table 53 at the rear of this report.

Rottnest Island Authority has not receive any QoS complaints during the past six years. Past history has shown that a significant proportion of the complaints received by both Horizon Power and Western Power are categorised as 'other' (technical matters which do not fall into the more specific complaint categories); this was also the case during 2015.

Table 14: Technical Quality of Service (QoS) complaints received in 2015

	Horizon Power	Western Power
Total number of technical QoS complaints	32	1,889
Complaint categories		
Low supply voltage complaints	16	317
Voltage dip complaints	0	11
Voltage swell complaints	0	12
Voltage spike complaints	0	4
Waveform distortion complaints	0	0
TV or radio interference complaints	0	147
Noise from appliances complaints	0	0
Other complaints	16	1,398

Table 15 details the number of QoS complaints received by each distributor over the past six years.

Table 15: Technical Quality of Service (QoS) complaints

Distributor	2010	2011	2012	2013	2014	2015
Horizon Power	44	29	23	30	31	32
Rottnest Island Authority	0	0	0	0	0	0
Western Power	2,068	2,158	1,307	1,311	2,017	1,889
State Total	**2,112**	**2,187**	**1,330**	**1,341**	**2,048**	**1,921**

The number of complaints received by Horizon Power has remained within a fairly narrow band over the past six years, whereas the number of complaints received by Western Power has fluctuated between approximately 1,300 and 2,150.

The 2002 SCONRRR Framework requires distributors to report on the likely cause of the problems that led to a QoS complaint. Table 16 provides a breakdown of the cause of the technical QoS complaints received by Horizon Power and Western Power in 2015.

Horizon Power recorded 43.8% of the QoS complaints as "network equipment faulty" whilst no clear reason was identified for a further 40.6% of the complaints. The remaining 15.6% of the complaints related to environmental (such as weather) causes. Western Power was unable to categorise the cause for 54.6% of their QoS complaints, 16.6% of complaints were caused by "network equipment faulty" and a further 12.5% were caused by "network limitations".

Table 16: Likely cause of technical Quality of Service (QoS) complaints in 2015

Likely cause of technical QoS complaints	Horizon Power	Western Power
Network equipment faulty	14	313
Network interference by network service provider equipment	0	17
Network interference by another customer	0	0
Network limitation	0	237
Customer internal problem	0	42
No problem identified	13	1,031
Environmental	5	8
Other	0	241

Complaints Recorded under the Electricity Customer Code

The customer complaint categories in the Electricity Customer Code exclude complaints that are dealt with by the NQ&R Code and the 2002 SCONRRR Framework. Table 17 details the complaints received by Horizon Power and Western Power over the past six years.

In 2015, Horizon Power reported 244 complaints in the Electricity Customer Code framework, which is in line with Horizon Power's six year average of 242 complaints per annum. Administrative and customer service complaints were lower in 2015, down from 94.2% of total complaints in 2014 to 68.9% of total complaints in 2015.[43]

Western Power recorded a total of 660 complaints in 2015, whereas the six year average for Western Power is 1,169 complaints per annum. Historically, the majority of complaints received by Western Power are categorised as "Other". This was also the case in 2015 with 89.7% falling into this category.

Rottnest Island Authority received a single administrative and customer service complaint in 2015.

[43] Horizon Power's complaints data covers both retail and distribution related complaints.

Table 17: Complaints received by electricity distributors 2010-2015 (Electricity Customer Code)

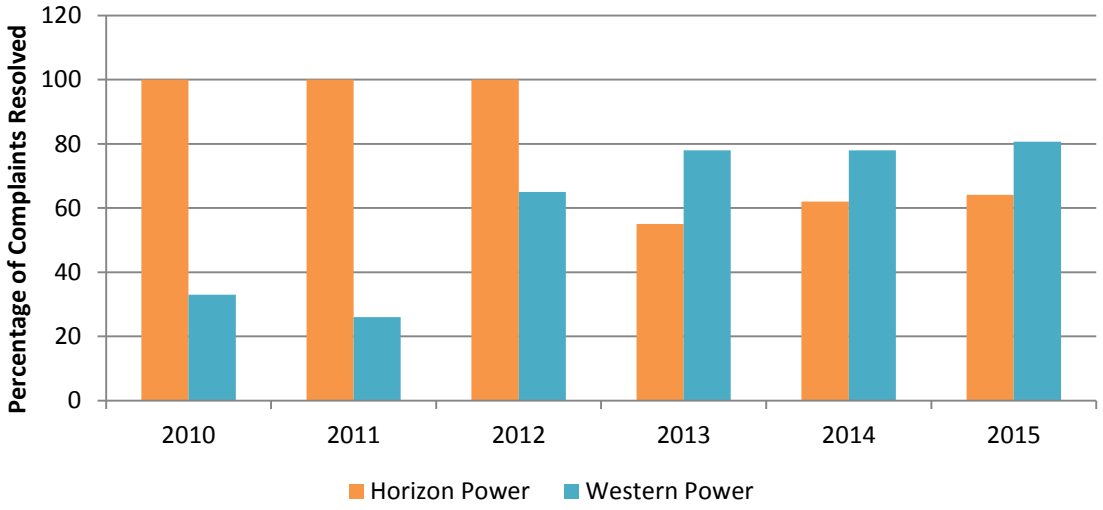
	2010	2011	2012	2013	2014	2015
Horizon Power[44]						
Administrative and customer service complaints	65	58	86	414	274	168
Other complaints	113	79	51	55	17	76
Total complaints	**178**	**137**	**137**	**469**	**291**	**244**
Western Power						
Administrative and customer service complaints	181	101	33	25	41	68
Other complaints	2,514	1,637	679	639	506	592
Total complaints	**2,695**	**1,738**	**712**	**664**	**547**	**660**

Complaints Resolution Performance

The ERA requires electricity distributors to report on their complaint resolution performance measured as the percentage of Electricity Customer Code and NQ&R Code complaints received that are concluded within 15 business days of receipt.

Figure 9 shows the total complaint resolution of Horizon Power and Western Power for complaints received under both Codes.

Figure 9: Electricity distributor complaint resolution performance (percentage of complaints resolved in 15 business days)



Until and including 2012, Horizon Power resolved 100% of complaints within 15 business days, but in 2013 this fell to 55% because of a large increase in complaints related to metering issues caused by a change of metering contractor. Since 2013, Horizon Power has improved their performance, resolving 64.1% of all complaints within 15 business days in 2015.

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

Western Power has significantly improved their complaints resolution performance during the past six years: in 2010, only 33% of complaints were resolved within 15 business days, rising to 80.7% by 2015. Western Power commented:

> Western Power has changed its performance objective to resolve complaints from the 20 days Electricity Customer Code obligation to the 15 days SCONRRR Framework target. Processes, systems, and internal business support have been aligned to the 15 day target with a corresponding improvement each year in meeting that target. In 2014/15, Western Power resolved 99.8% of Electricity Customer Code complaints within 15 business days.

The single complaint received by the Rottnest Island Authority was resolved within 15 business days.

Gas distributors - complaints

Gas distributors, like electricity distributors, are required to record customer complaints, but the regulatory framework governing complaints handling differs from electricity. The complaint reporting categories and obligations for gas distributors are described in the Gas Compendium.

Table 18 details the number of complaints received by gas distributors over the past six years. Kleenheat received three complaints and Esperance Power Station received zero complaints in 2015.

Table 18: Complaints received by gas distributors

Distributor	2010	2011	2012	2013	2014	2015
ATCO	38	35	36	25	25	236
Esperance Power Station	1	0	0	0	0	0
Kleenheat	0	0	2	0	0	3
State Total	**39**	**35**	**38**	**25**	**25**	**239**

In 2015, ATCO reported a near tenfold increase in the number of complaints received. This was due to ATCO recording complaints that were resolved during the first contact with the customer for the first time in 2015. This means that the data for previous years did not accurately account for the total number of complaints received by ATCO because only those complaints that were escalated through their complaints handling process were included. ATCO commented:

> In January 2015, ATCO […] implemented a system enhancement to allow for [all of the received complaints] to be captured, which has resulted in an increase to the complaint statistic for this reporting period. Approximately half of the (236) complaints relate to ATCO's meter reading contractors, who perform approx. 2.8 million reads annually.

Table 19 categorises the complaints received by ATCO in 2015. The majority of the complaints related to "Administrative Processes or Customer Service" (55.9% of the total), followed by "Other" (30.0% of the total), and "Connection and Augmentation" (7.2% of the total).

Table 19: Categorisation of complaints received by ATCO in 2015

Complaint Category	ATCO
Complaint category	
Connection and Augmentation	16
Reliability of Supply	4
Quality of Supply	5
Network Charges and Costs	8
Administrative Processes or Customer Service	132
Other	71
Total	**236**

Call Centre Performance

The majority of a customer's interaction with their distributor is by telephone. This section discusses the call centre performance of the distributors. 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.

Collecting Data from the Call Centres

The larger distributors operate call centres with multiple customer service representatives to handle enquiries and complaints. The distributors that have a call centre are able to record a range of information about the incoming calls, including performance statistics. Smaller distributors offer a simpler telephone service, such as switchboard, which then connects the customer to the appropriate contact person.

The Rottnest Island Authority call centre handles calls about distribution matters and calls about other areas of their business without being able to separately record and report on the distribution calls. Consequently, the call centre performance presented in this report will be for the combined distribution and other calls.

If the distributor call centre uses Interactive Voice Response equipment 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 without distinguishing between them, 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 significant reduction in the volume of calls to Horizon Power's call centre in 2014 was the result of system changes that enabled them to separately record and report calls about distribution matters.[45]

[45] Prior to 2014, Horizon Power reported performance on distribution and retail calls combined.

Table 20: Volume of calls to electricity distributor call centres

	2010	2011	2012	2013	2014	2015
Horizon Power	89,200[46]	71,215	82,587	103,301	14,437	11,452
Rottnest Island Authority	1,027	5,272	5,840	6,173	4,850	5,250
Western Power	538,903	495,626	531,554	510,935	455,368	388,358
State Total	**629,130**	**572,149**	**619,981**	**620,409**	**474,655**	**405,060**

From 2014 to 2015, the volume of calls to the two largest call centres fell by 20.7% (Horizon Power) and 14.7% (Western Power);[47] whereas the volume of calls to the Rottnest Island Authority's call centre increased by 8.2%.

Horizon Power commented the reduction in calls to their call centre:

> [It] can partly be attributed to Horizon Power increasing its social media presence as an additional communication channel. Twitter and Facebook are updated regularly with information during planned and unplanned power interruptions, including cyclones and storms […] during Tropical Cyclone Olwyn, 12,768 people were reached on just one day through this crisis communication channel. The improvement in reliability on the long rural feeders is also likely to have resulted in this decrease.

Western Power explained the reduction in calls to their call centre were:

> […] a result of improved reliability on the distribution network and the introduction of a mobile phone friendly outage webpage. In March 2014 Western Power introduced a mobile phone friendly outage webpage, which has resulted in an increase in customers obtaining their power restoration information from our webpage. Reflecting customer transition to smart phones, in 2014-15 mobile phones accessed the outage page on Western Power's website on 341,061 occasions, compared to 105,081 in the previous year. This contributed to a reduction in telephony fault [calls about distribution system faults] calls.

In order to assess the overall performance of the distributor's call centres it is prudent to examine all three call centre responsiveness measures together. Figures 10, 11 and 12 show the average waiting time before the call is answered by the call centre, the percentage of calls that are answered within 30 seconds, and the percentage of calls that are unanswered.

Figure 10 shows that, in 2015, a caller to the Western Power call centre faced an average waiting time of 11 seconds, which is a six year low. Callers to the Horizon Power call centre faced an average waiting time of 25 seconds, which is a significant improvement over the previous two years and is probably related to a decrease in call volumes each year. Finally, callers to the Rottnest Island Authority call centre waited for an average of 12 seconds, a similar performance to the previous three years.

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

[47] The ERA notes that the recent falls in the number of calls handled by the Horizon Power and Western Power call centres is in part due to the availability of alternative sources of information about power outages. This gives rise to the possibility that call volumes to these call centres may continue the current downward trend as more customers access the alternative information sources.

Figure 10: Average duration before a call was answered by electricity distributors

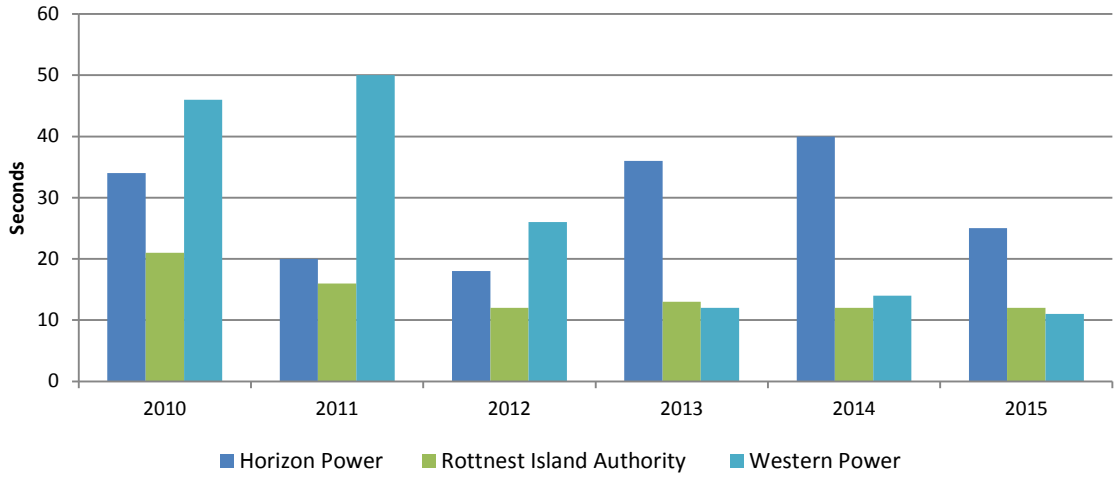


Figure 11: Percentage of electricity distributor calls answered within 30 seconds

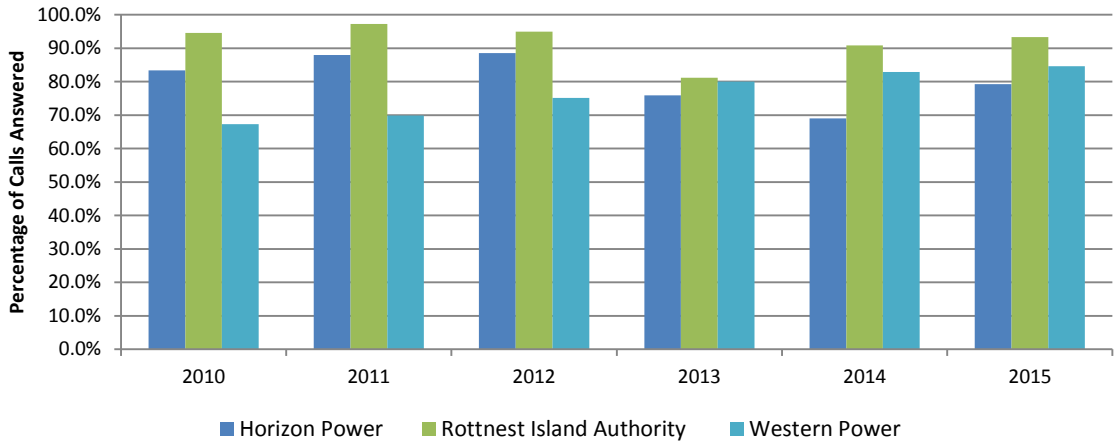


Figure 11 shows that Western Power answered 84.6% of the calls within 30 seconds, a six year high. 2015 is the fifth consecutive year that Western Power has improved its performance since 2010, when only 67.3% of the calls were answered within 30 seconds. Table 20 shows that Western Power has improved its performance each year despite some variation in the annual volume of calls to the call centre.

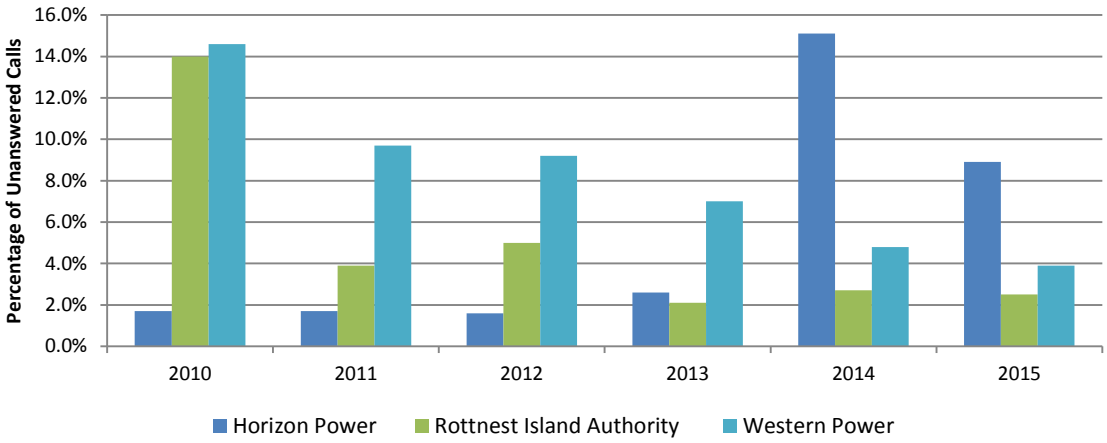
Horizon Power improved their call centre performance in 2015: 79.3% of the calls were answered within 30 seconds, compared to 69.0% in 2014. However, the 2015 performance is still below the six year peak of 88.5% in 2012.

Rottnest Island Authority has the smallest call centre operation of the three distributors. In 2015, their call centre answered 93.3% of calls within 30 seconds. Their call centre has achieved over 90% of calls answered within 30 seconds for five of the last six years, the exception was 2013 (81.2%).

A call is deemed to be unanswered if the caller ends the call before it was answered by a call centre operator.[48] Figure 12 shows the percentage of unanswered calls for the three distributor call centres.

[48] Calls to an IVR system that are terminated by the customer prior to selecting an option indicating they wish to speak with a call centre operator are not included in this measure.

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



For the fifth consecutive year, Western Power recorded a fall in the percentage of unanswered calls, reaching a six year low of 3.9% in 2015.

Rottnest Island Authority reported a modest reduction in unanswered calls: down from 2.7% in 2014 to 2.5% in 2015. The percentage of unanswered calls in the past three years has been much lower than in the preceding three years.

The percentage of calls to Horizon Power that were unanswered fell in 2015, down from 15.1% in 2014 to 8.9% in 2015. However, the percentage of unanswered calls for the past two years is still much higher than in the preceding four years. Horizon Power commented:

> Horizon Power changed its reporting criteria in 2014 to exclude unanswered calls to the general Customer Contact Centre number. Unanswered calls to the Faults and Emergencies phone number are now solely reported on. The effectiveness of the automated messaging to customers calling the Faults and Emergencies phone number which provides customers with information about unplanned power interruptions and estimated restoration times without the need to speak to a call-taker accounts for the increase in unanswered calls from pre-2014.

Gas Distributor Call Centres

ATCO and Kleenheat are the only gas distributors that operate call centres. Due to the nature and small scale of its phone support, Esperance Power Station does not record performance statistics. Accordingly, the remainder of this section of the report will focus on ATCO and Kleenheat. Caution is needed when interpreting the performance of the Kleenheat call centre as it handles both retail and distribution calls as well as calls related to other areas of their business.

Table 21 details the volume of calls received by the ATCO and Kleenheat call centres over the past six years.

The combined total calls to the ATCO and Kleenheat call centres increased by 1.4% between 2014 and 2015; ATCO reported an 8.7% increase in call volume, and Kleenheat reported a 0.1% decrease in call volume. It is not possible to provide a six year analysis of ATCO's call volumes because they had excluded all scheduling calls for the years prior to 2012; however, the 2015 call volume does represent a four year peak. The volume of calls to the Kleenheat call centre in 2015 was marginally lower than the six year peak of last year.

Table 21: Volume of calls to gas distributor call centres

	2010	2011	2012	2013	2014	2015
ATCO	41,132	37,391	65,098	66,933	77,388	84,106
Kleenheat	172,080	190,764	214,280	220,710	235,698	233,363
State Total	**213,212**	**228,155**	**279,378**	**287,643**	**313,086**	**317,469**

Figure 13 presents the percentage of calls that were answered within 30 seconds by the two call centres. In 2015, the percentage of calls answered within 30 seconds by both call centres was almost the same: ATCO achieved 75.8% and Kleenheat achieved 76.6%. Both distributor's performance has been close to the same level since 2011.

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

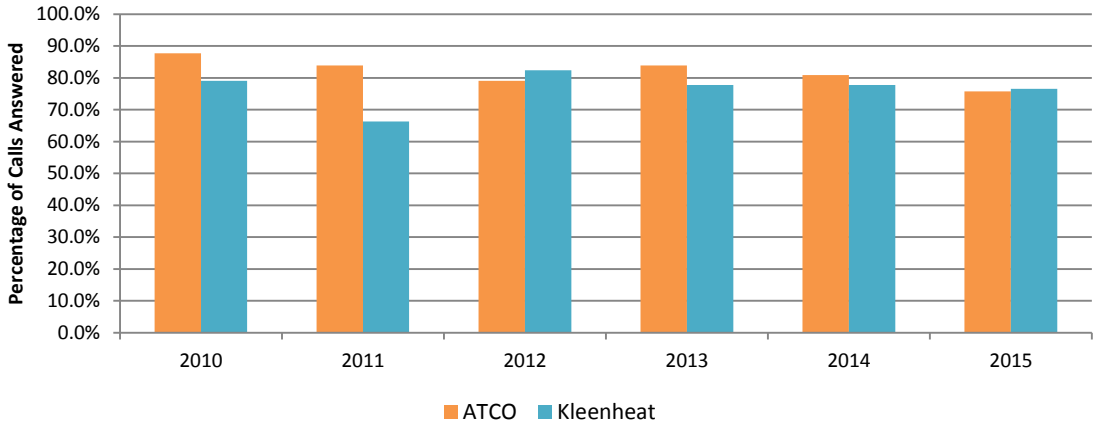
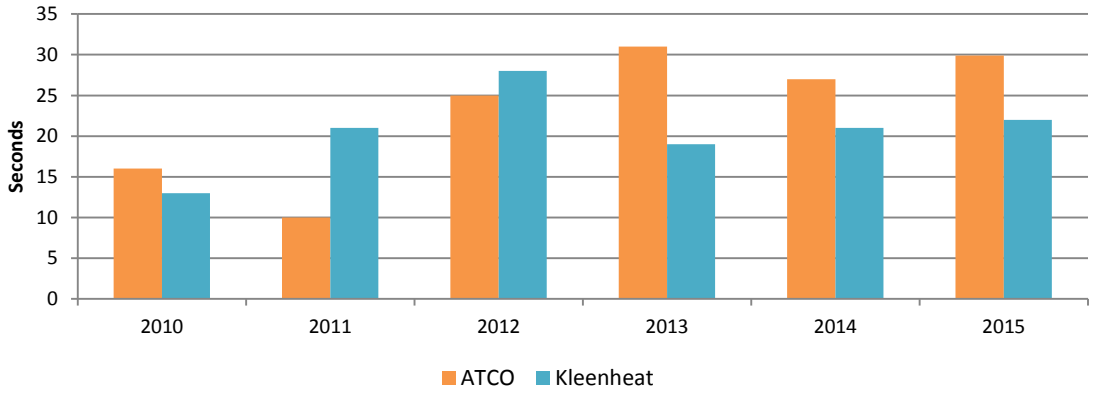


Figure 14 details the average duration before a call is answered by a call centre operator for the two call centres.

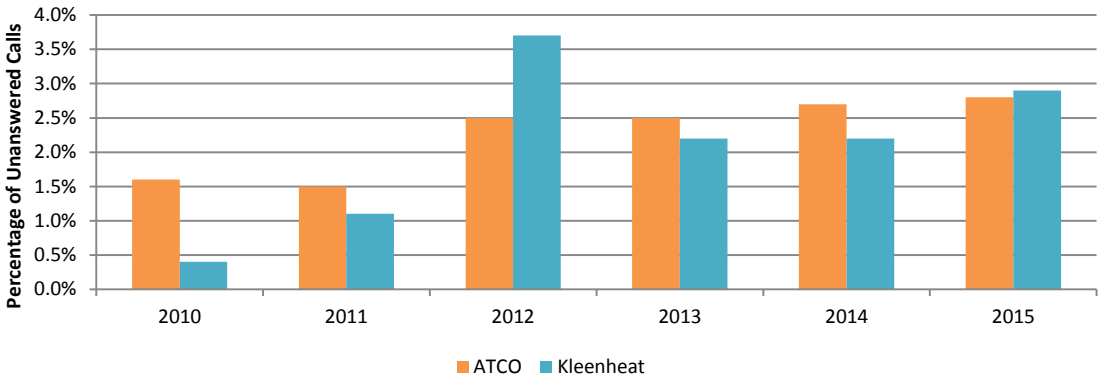
Figure 14: Average duration before a call was answered by gas distributors



In 2015, a caller waited on average 30 seconds when calling the ATCO call centre and 22 seconds when calling the Kleenheat call centre. It can be seen that the performance of the two call centres has been quite variable over the past six years.

Figure 15 presents the percentage of calls that went unanswered by both call centres.

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



In 2015, the percentage of unanswered calls for both call centres was almost the same: ATCO achieved 2.8% and Kleenheat achieved 2.9%.

Service Standard Payments

Electricity Distributor Service Standard Payments

This section discusses the service standard payments made by the distributors. Electricity distributors are obliged to pay service standard payments to customers as follows:

- $20 per occurrence for failure to acknowledge or respond to a written customer query or complaint within set timeframes (Electricity Customer Code, clause 14.4).
- $100 for each day that the customer was wrongfully disconnected in specified circumstances (Electricity Customer Code, clause 14.5).
- $20 per occurrence to eligible small use customers for a failure to give at least 72 hours' notice of a planned supply interruption (NQ&R Code, clause 18).
- $80 per occurrence to eligible small use customers for supply interruptions that exceed 12 hours in duration (NQ&R Code, clause 19).

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

Table 22: Service standard payments made by electricity distributors

	2010	2011	2012	2013	2014	2015
Electricity Customer Code - clause 14.4						
Horizon Power	0	0	0	0	0	0
Western Power	0	1	4	0	0	1
Electricity Customer Code - clause 14.5						
Horizon Power	-	-	-	-	4	2
Western Power	-	-	-	-	14	1
NQ&R Code – section 18						
Horizon Power	1	0	9	1	10	1
Western Power	573	1,158	968	683	751	341
NQ&R Code – section 19						
Horizon Power	71	589	32	34	89	1,618
Western Power	34,151	24,328	28,800	47,523	15,166	7,509

Compared to last year, Western Power reported a significant reduction in the number of payments made for wrongful disconnection in 2015. Both Horizon Power and Western Power reported significant reductions in the number of service standard payments for failure to give customers at least 72 hours' notice of a planned supply interruption. The 341 payments made by Western Power in 2015 is a six year low.

The 1,618 payments made in 2015 by Horizon Power to customers who experienced interruptions exceeding 12 hours in duration is a six year peak. Horizon Power commented that the majority of payments were linked to Tropical Cyclones Olwyn (March 2015 in Carnarvon) and Quang (May 2015 in Exmouth). The 7,509 payments made by Western Power in 2015 is a six year low, and correlates with the reported reduction in the number of extended interruptions on Western Power's networks (see Figure 3).

Appendices

Appendix 1 - Gas Consumption and Unaccounted for Gas

Gas Consumption

The ERA requires the 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 23 compares residential and non-residential (business) gas consumption in 2014 and 2015. During 2015, state-wide residential gas consumption decreased by 2.7%, reflecting a similar decrease in consumption on ATCO's distribution systems. Kleenheat reported a 10.6% increase in residential gas consumption in its small LPG distribution systems.

Table 23: Comparison of gas consumption in 2014 and 2015

	Residential			Non-Residential		
Distributor	**2014**	**2015**	**Change (%)**	**2014**	**2015**	**Change (%)**
ATCO[49]	10,087,162	9,816,762	-2.7%	1,263,629	1,286,095	1.8%
Esperance Power Station	3,969	3,981	0.3%	28,276	32,669	15.5%
Kleenheat	6,770	7,489	10.6%	195	225	15.4%
State Total	**10,097,901**	**9,828,232**	**-2.7%**	**1,292,100**	**1,318,989**	**2.1%**

All three distributors reported increases in non-residential gas consumption in 2015, which translated into a 2.1% increase in state-wide consumption.

The residential and non-residential gas consumption for the past six years can be found in Table 57 (Appendix 7).

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 at the start and end point of the system. UFG can be reduced by improving maintenance of 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 2015.

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

Distributor	2010	2011	2012	2013	2014	2015
ATCO[50]	858,000	866,667	920,371	813,898	707,191	705,987
Esperance Power Station	0	0	0	0	0	0
Kleenheat	344	931	1,158	866	943	529
State Total	**858,344**	**867,598**	**921,529**	**814,764**	**708,134**	**706,516**

[49] ATCO's gas consumption data is based on calendar year from January to December. The consumption data included in the 2015 performance report is for the 2014 calendar year.

[50] 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.

For the sixth consecutive year, Esperance Power Station has reported zero UFG. The level of UFG on the ATCO and Kleenheat distribution systems in 2015 were both lower than last year, which resulted in the state-wide total UFG reaching a six year low.

Comparing Table 24 with Table 23 it can be seen that in 2015 UFG accounted for 6.9% of the total gas entering the Kleenheat distribution systems, which is much lower than the 13.3% reported last year.

It is not possible to calculate what percentage of gas supplied into the system becomes UFG on the ATCO networks because ATCO's reported gas consumption data is for small use customers only, whereas the UFG represents a total figure for the system, including large use customers.

Appendix 2 - Leaks on Gas Distribution Systems

The level of leaks in gas distribution systems over time is influenced by asset condition. Leak data can be used as an input to asset operation and maintenance strategies.

The distributors report leaks to the ERA in categories of: mains, (customer) service connections and meters. Each are further sub-categorised into low (≤7kPa), medium (7-210kPa) and high (>210kPa) operating pressure segments of the systems.

Table 25 details the number of repairs to low, medium and high pressure gas mains over the past six years.

Table 25: Gas mains leak repairs

	2010	2011	2012	2013	2014	2015
ATCO	916	600	830	835	842	575
Esperance Power Station	3	0	0	2	0	0
Kleenheat	0	1	0	1	1	25
State Total	**919**	**601**	**830**	**838**	**843**	**600**

Given the relative size of the ATCO gas distribution system in comparison to the distribution systems operated by Esperance Power Station and Kleenheat (Table 40), it is not surprising that ATCO accounts for nearly all of the mains leak repairs.

In 2015, ATCO reported a 31.7% decrease in the number of gas main leak repairs on their systems compared to last year. Kleenheat reported a significant increase in gas mains leak repairs in 2015, to a level that is much higher than in previous years. Kleenheat advised that this is due to their improved leak detection methodology.

Table 26 details the number of leak repairs to property service connections over the past six years.

Table 26: Gas property service connection leak repairs

	2010	2011	2012	2013	2014	2015
ATCO	6,481	6,003	5,657	6,614	7,182	5,575
Esperance Power Station	0	1	0	3	0	1
Kleenheat	0	0	0	0	0	42
State Total	**6,481**	**6,004**	**5,657**	**6,617**	**7,182**	**5,618**

In 2015, ATCO reported a decrease of 22.4% in the number of leak repairs to property service connections compared to last year. This reduction is partly due to the reclassification of leak repairs in ATCO's reporting, which is discussed under leak repairs to gas meters. 2015 is the only year that Kleenheat reported making service connection repairs over the six year period covered by Table 26. Kleenheat attribute this change to having a better leak detection methodology in place.

Table 27 details the number of leak repairs to gas meters during the six years to 2015.

ATCO reported a large increase in the number of leak repairs to gas meters in 2015, due to changes in ATCO's reporting capability regarding gas meter leak identification.

Table 27: Gas meter leak repairs

	2010	2011	2012	2013	2014	2015
ATCO	1,079	1,008	816	486	471	3,527
Esperance Power Station	0	0	0	0	0	0
Kleenheat	0	0	1	0	2	0
State Total	**1,079**	**1,008**	**817**	**486**	**473**	**5,527**

Appendix 3 - Street Lighting Repairs

The ERA requires electricity distributors to maintain records of the street lights that they are responsible for, including information on:

- The total number of street lights they are responsible for maintaining in metropolitan and regional areas.
- 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; or
  - 9 business days for regional areas.
- The average number of days to repair faulty street lights in metropolitan and regional areas (calculated from the time the distributor becomes aware of the fault).

Table 28 details the number of street lights in metropolitan and regional areas that have been maintained by each distributor over the past six years. The state-wide total number of streetlights increased by 2.8% in metropolitan areas and by 0.7% in the regional areas. Western Power reported increases in both metropolitan (up by 3.1%) and regional (up by 1.7%) street lights. In contrast, the streetlight population maintained by Horizon Power shrank for the first time in six years; down by 3.6% in metropolitan areas, and by 2.6% in regional areas.

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

	2010	2011	2012	2013	2014	2015
Metropolitan areas						
Horizon Power	5,017	5,293	5,441	5,993	8,325	8,022
Western Power	187,305	192,890	198,070	199,767	207,146	213,526
Total	**192,322**	**198,183**	**203,511**	**205,760**	**215,471**	**221,548**
Regional areas						
Horizon Power	9,257	9,610	9,978	10,331	11,298	11,007
Rottnest Island Authority	190	190	190	190	190	189
Western Power	35,867	37,018	37,595	37,907	38,539	39,202
Total	**45,314**	**46,818**	**47,763**	**48,428**	**50,027**	**50,398**

Table 29 details the number of faulty street lights reported to the distributors for the past six years. The total number of metropolitan streetlight faults reached a six year low in 2015; the number of faults has followed a downward trend since 2010. According to Western Power:

> The performance of streetlight repair since 2010 has steadily improved through the dedicated contractors repairing streetlight faults and the introduction of the Bulk Globe replacement program that ran from 2008/09 to 2013/14. The program […] [lead to a] decrease in the number of faults reported.

If we exclude the data from 2010, the number of regional streetlight faults reported by Horizon Power and Western Power each year has been relatively consistent; both distributors reported above average fault levels in 2010. The number of faults reported by Rottnest Island Authority has been very variable over the past six years however, the 112

faults reported in 2015 is much higher than in previous years, which Rottnest Island Authority explained as follows:

> Rottnest Island's security guard reports each faulty light to the call centre, which logs each call as a separate fault. It is possible that some duplicate reports were made. Normally we repair each faulty street light within one business day by changing the bulb. There was one cable issue during the year which affected 13 lamps altogether.

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

Metropolitan	2010	2011	2012	2013	2014	2015
Metropolitan areas						
Horizon Power	156	168	180	108	149	158
Western Power	39,978	35,912	34,271	36,525	33,447	28,647
Metropolitan Total	**40,134**	**36,080**	**34,451**	**36,633**	**33,596**	**28,805**
Regional areas						
Horizon Power	192	156	168	166	168	177
Rottnest Island Authority	24	36	18	46	4	112
Western Power	6,214	2,922	3,137	3,414	3,220	3,428
Regional Total	**6,430**	**3,114**	**3,323**	**3,626**	**3,392**	**3,717**

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.

Historically the proportion of faulty metropolitan street lights reported to Horizon Power and Western Power has been higher than in the regional areas. The most likely explanation for this difference is that the detection rate for faulty street lights in the regional areas is lower due to the relatively isolated locations of the lights.

Comparing Figure 16 with Table 29 it can be seen that the percentage of faulty streetlights correlates to the number of faults reported by each distributor, which implies that the failure rate for each population of streetlights is in proportion to the number of streetlights.

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

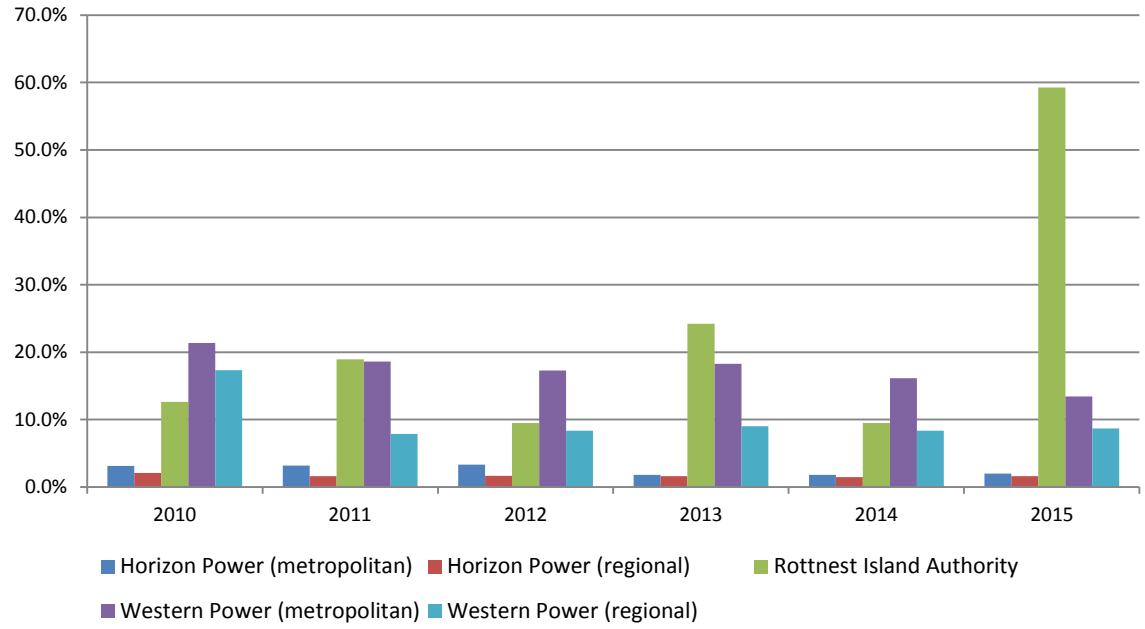


Figure 17 details the percentage of faulty metropolitan street lights that were repaired more than five business days after having been reported. In 2015, the percentage of faulty metropolitan streetlights repaired after five days by Horizon Power hit a six year low of 6.3%. Horizon Power's performance over the past six years has been quite variable, in four of the six years repairs 20% of all repairs exceeded five business days. The percentage of faulty metropolitan streetlights repaired after five business days by Western Power (0.8%) was marginally higher than the six year low achieved last year. There has been a steady improvement in the timeliness of Western Power's streetlight repairs over the past five years.

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

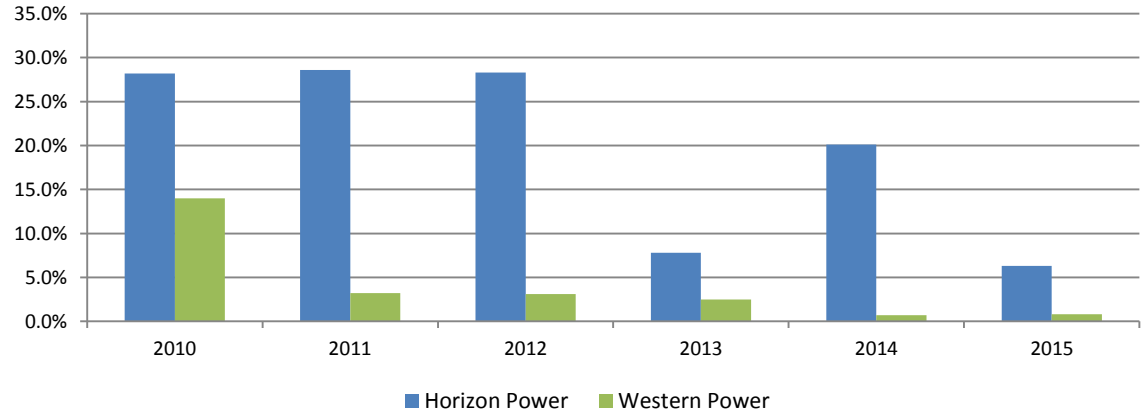
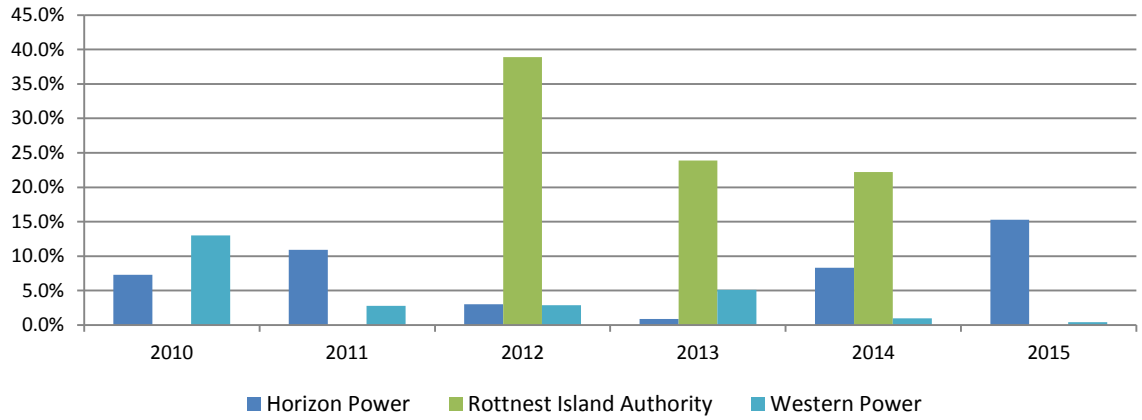


Figure 18 details the percentage of faulty regional street lights that were repaired more than nine business days after having been reported. Western Power continued to improve their regional streetlight repair performance; in 2015, the percentage of regional streetlights repaired after nine business days reached a six year low of 0.4%. In contrast, Horizon Power reported a six year peak (at 15.3%) in the percentage of regional streetlights repaired after nine business days (27 out of 177 faulty streetlights).

Rottnest Island Authority repaired all faulty street lights within nine business days in 2015.

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;[51]

SAIDI

Table 30: Western Power SAIDI performance in 2015

SAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	344.7	33.0	210.3	399.3	1,323.1
Distribution Network (Planned)	105.3	4.2	54.6	151.1	412.6
Distribution Network (Unplanned)	216.7	26.3	134.8	224.4	873.8
Normalised Distribution Network (Unplanned)	168.8	26.2	103.0	182.6	677.5

Table 31: Horizon Power SAIDI performance in 2015

SAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	501	N/A	85	568	586
Distribution Network (Planned)	28	N/A	19	25	105
Distribution Network (Unplanned)	473	N/A	66	543	481
Normalised Distribution Network (Unplanned)	151	N/A	60	150	457

[51] 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 2015

SAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	62.2	N/A	N/A	62.2	N/A
Distribution Network (Planned)	9.2	N/A	N/A	9.2	N/A
Distribution Network (Unplanned)	52.9	N/A	N/A	52.9	N/A
Normalised Distribution Network (Unplanned)	0.0	N/A	N/A	0.0	N/A

SAIFI

Table 33: Western Power SAIFI performance in 2015

SAIFI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	2.40	0.20	1.71	2.99	6.71
Distribution Network (Planned)	0.32	0.02	0.17	0.45	1.20
Distribution Network (Unplanned)	1.79	0.17	1.26	2.27	5.08
Normalised Distribution Network (Unplanned)	1.56	0.17	1.09	1.98	4.41

Table 34: Horizon Power SAIFI performance in 2015

SAIFI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	3.1	N/A	1.3	3.2	7.3
Distribution Network (Planned)	0.2	N/A	0.1	0.2	0.5
Distribution Network (Unplanned)	2.9	N/A	1.2	3.0	6.8
Normalised Distribution Network (Unplanned)	2.7	N/A	1.1	2.8	6.4

Table 35: Rottnest Island Authority SAIFI performance in 2015

SAIFI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	2.22	N/A	N/A	2.22	N/A
Distribution Network (Planned)	0.10	N/A	N/A	0.10	N/A
Distribution Network (Unplanned)	2.12	N/A	N/A	2.12	N/A
Normalised Distribution Network (Unplanned)	0.00	N/A	N/A	0.00	N/A

CAIDI

Table 36: Western Power CAIDI performance in 2015

CAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	144.0	166.0	123.0	133.0	197.0
Distribution Network (Planned)	333.0	226.0	323.0	332.0	345.0
Distribution Network (Unplanned)	121.0	158.0	107.0	99.0	172.0
Normalised Distribution Network (Unplanned)	108.0	158.0	94.0	92.0	154.0

Table 37: Horizon Power CAIDI performance in 2015

CAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	161	N/A	65	177	81
Distribution Network (Planned)	154	N/A	137	146	224
Distribution Network (Unplanned)	161	N/A	57	179	71
Normalised Distribution Network (Unplanned)	55	N/A	53	54	71

Table 38: Rottnest Island Authority CAIDI performance in 2015

CAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	28.0	N/A	N/A	28.0	N/A
Distribution Network (Planned)	90.0	N/A	N/A	90.0	N/A
Distribution Network (Unplanned)	25.0	N/A	N/A	25.0	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 2015

Asset Type	Asset Sub-Type	Horizon Power	Rottnest Island Authority	Western Power
Number of metered supply points	CBD	N/A	N/A	5,976
	Urban	6,746	N/A	774,457
	Short Rural	39,322	190	213,656
	Long Rural	2,128	N/A	94,107
Feeder Length (km)	CBD	N/A	N/A	193
	Urban	333.6	N/A	23,108
	Short Rural	3942.2	44.9	16,598
	Long Rural	3266.3	N/A	52,601
Number of Transformers	Sub-transmission	N/A	2	N/A
	Distribution	4,396	15	67,554
Total Capacity of Transformers (MVA)	Sub-transmission	N/A	2	N/A
	Distribution	767	4	9,577
Number of street lights		19,029	189	252,728
Number of Poles		58,841	56	770,535

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 Kleenheat. It can be seen that the distribution systems installed and in service for Esperance Power Station and Kleenheat 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 2015

Asset Type	Asset Sub-Type	ATCO			Esperance Power Station			Kleenheat		
		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	16.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unprotected Steel	98.8	40.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Protected Steel	0.0	54.8	725.8	0.0	0.0	0.0	0.0	0.0	0.0
	PVC	3,587.3	6,017.6	0.0	0.0	0.0	0.0	0.0	8.7	0.0
	Polyethylene	70.9	2,927.3	275.5	0.0	0.0	0.0	0.0	42.3	0.0
	Other	13.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total length of distribution mains installed and in service (km)		3,787.2	9040.7	1,001.3	0.0	35.2	0.0	0.0	51.0	0.0
Number of service connections per km of gas mains		51.7			10.1			18.1		

Appendix 7 - Additional Electricity and Gas Performance Data

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

	Electricity							Gas					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**		**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Horizon Power	41,143	43,181	44,328	45,866	46,508	47,832	ATCO	628,537	636,323	652,808	673,878	692,988	714,488
Rottnest Island Authority	83	83	527[52]	527	527	527	Esperance Power Station	266	280	313	332	342	357
Western Power	1,023,341	1,043,364	1,015,679	1,050,232	1,060,588	1,085,657	Kleenheat	808[53]	862	903	940	956	922
State Total	**1,064,567**	**1,086,628**	**1,060,534**	**1,096,625**	**1,107,623**	**1,134,016**	**State Total**	**629,589**	**637,427**	**654,024**	**675,150**	**694,286**	**715,767**

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

	New connections on electricity systems							New connections on gas systems					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**		**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Horizon Power	1,764	2,157	1,780	2,401	2,797	1,576	ATCO	16,911	19,611	14,752	15,423	20,273	23,734
Rottnest Island Authority	0	0	0	0	0	0	Esperance Power Station	24	14	20	3	8	12
Western Power	26,304	24,614	21,420	23,994	29,532	33,925	Kleenheat	42	54	41	37	15	43
State Total	**28,068**	**26,771**	**23,200**	**26,395**	**32,329**	**35,501**	**State Total**	**16,977**	**19,679**	**14,813**	**15,463**	**20,296**	**23,789**

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

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

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					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Electricity												
Horizon Power	0	0	2	15	22	16	0.0	0.0	0.1	0.6	0.8	1.0
RIA	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	957	885	446	361	223	189	3.6	3.6	2.1	1.5	0.7	0.6
Gas												
ATCO	6	7	3	2	2	14	0.04	0.04	0.02	0.01	0.01	0.1
Esperance Power Station	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0
Kleenheat	0	0	0	0	0	8	0.0	0.0	0.0	0.0	0.0	19

Table 44: Customer reconnections on electricity and gas distribution systems

	Reconnections on electricity systems							Reconnections on gas systems					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**		**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Horizon Power	-	-	-	1,641	3,502	3,889	ATCO	-	-	-	3,692	2,820	7,112
Rottnest Island Authority	-	-	-	0	0	0	Esperance Power Station	-	-	-	2	25	30
Western Power	-	-	-	13,908	15,520	16,740	Kleenheat	-	-	-	4	2	10
State Total	**-**	**-**	**-**	**14,003**	**19,022**	**20,629**	**State Total**	**-**	**-**	**-**	**3,698**	**2847**	**7,152**

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					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Electricity												
Horizon Power	-	-	-	5	12	26	-	-	-	0.3	0.3	0.7
Rottnest Island Authority	-	-	-	N/A	N/A	N/A	-	-	-	N/A	N/A	N/A
Western Power	-	-	-	227	224	177	-	-	-	1.6	1.4	1.1
Gas												
ATCO	-	-	-	22	15	1	-	-	-	0.6	0.5	0.0
Esperance Power Station	-	-	-	0	0	0	-	-	-	0.0	0.0	0.0
Kleenheat	-	-	-	0	0	0	-	-	-	0.0	0.0	0.0

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

Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Horizon Power	334	1,138	1,875	587	3,785	6,382
Rottnest Island Authority	0	0	3	0	0	0
Western Power	112,396	54,414	179,694	38,820	43,750	37,280
State Total	**112,730**	**55,552**	**181,572**	**39,407**	**47,535**	**43,662**

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					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Horizon Power	N/A	N/A	N/A	N/A	N/A	N/A	2,535	819	1,176	3,327	1,263	106
Rottnest Island Authority	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0
Western Power	12,616	6,813	13,224	8,702	12,326	4,755	1,513	435	1,125	2,341	5,154	3,912
State Total	**12,616**	**6,813**	**13,224**	**8,702**	**12,326**	**4,755**	**4,048**	**1,254**	**2,301**	**5,668**	**6,417**	**4,018**

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					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
ATCO	0	0	0	640	1,534	743	0	0	0	0	1	1
Esperance Power Station	0	0	0	0	0	0	0	0	0	0	0	0
Kleenheat	0	0	0	0	0	0	0	0	0	0	0	0
State Total	**0**	**0**	**0**	**640**	**1,534**	**743**	**0**	**0**	**0**	**0**	**1**	**1**

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

	Duration of Interruptions						Frequency of Interruptions					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
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	39	31	28	35	33	0.3	0.3	0.3	0.3	0.3	0.2

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

	Duration of Interruptions						Frequency of Interruptions					
Distributor	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015
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	333	341	405	390	343	326	2.8	2.7	2.6	2.4	2.2	2.1

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					
Distributor	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015
Horizon Power	408	297	302	318	330	373	5.1	4.5	3.8	4.1	3.9	3.8
Rottnest Island Authority	87	108	226	76	62	107	13.1	10.6	4	5.1	3.6	3.6
Western Power	679	777	947	979	1,020	1,030	4.9	4.9	5.1	5.3	5.2	5.4

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

	Duration of Interruptions						Frequency of Interruptions					
Distributor	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015
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					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Electricity Customer Code Complaints						
Horizon Power	178	137	137	469	291	244
Rottnest Island Authority	0	0	0	0	0	1
Western Power	2,695	1,738	712	664	547	660
Admin processes and customer service complaints						
Horizon Power	65	58	86	414	274	168
Rottnest Island Authority	0	0	0	0	0	1
Western Power	181	101	33	25	41	68
Other Complaints						
Horizon Power	113	79	51	55	17	76
Rottnest Island Authority	0	0	0	0	0	0
Western Power	793	1,637	679	639	506	592
Technical Quality of Supply (QoS) complaints						
Horizon Power	44	29	23	30	31	32
Rottnest Island Authority	0	0	0	0	0	0
Western Power	2,068	2,158	1,307	1,311	765	1,889
Customer complaints concluded in 15 business days (% of total Technical Quality of Supply and Electricity Customer Code complaints)						
Horizon Power	29	23	30	31	62	177
Rottnest Island Authority	0	0	0	0	-	1
Western Power	1,588	1,204	919	1,017	1,021	1,320

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

	Year ending 30 June					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Total number of complaints						
ATCO	38	35	36	16	2	203
Esperance Power Station	0	0	0	0	0	0
Kleenheat	1	0	2	0	0	3
Admin processes and customer service complaints						
ATCO				6	0	132
Esperance Power Station				0	0	0
Kleenheat				0	0	0
Other Complaints						
ATCO				10	2	71
Esperance Power Station				0	0	0 0
Kleenheat				0	0	3
Customer complaints concluded in 15 business days (Combined total of Gas Compendium and Quality & Reliability Complaints)						
ATCO				92.0%	100.0%	89.0%
Esperance Power Station	-	-	-	-	-	-
Kleenheat				-	-	100.0%

[54] 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					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Total number of complaints						
ATCO	-	-	-	9	23	263
Esperance Power Station	-	-	-	0	0	0
Kleenheat	-	-	-	0	0	0
Connection and augmentation complaints						
ATCO	-	-	-	4	6	16
Esperance Power Station	-	-	-	0	0	0
Kleenheat	-	-	-	0	0	0
Reliability of supply complaints						
ATCO	-	-	-	2	10	4
Esperance Power Station	-	-	-	0	0	0
Kleenheat	-	-	-	0	0	0
Quality of supply complaints						
ATCO	-	-	-	3	5	5
Esperance Power Station	-	-	-	0	0	0
Kleenheat	-	-	-	0	0	0
Network charges and costs complaints						
ATCO	-	-	-	0	2	8
Esperance Power Station	-	-	-	0	0	0
Kleenheat	-	-	-	0	0	0

Table 56: Electricity and gas distributor call centre performance

	Total number of calls						Calls responded within 30 sec (%)					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Horizon Power	89,200[55]	71,215	82,587	103,301	14,437[56]	11,452	83.4	88.0	88.5	75.9	69.0	79.3
RIA	1,027	5,272	5,840	6,173	4,850	5,250	94.6	97.3	95.0	81.2	90.8	93.3
Western Power	538,903	495,626	531,554	510,935	455,368	388,358	67.3	69.9	75.1	80.0	82.9	84.6
Electricity Total	**629,130**	**572,149**	**619,981**	**620,409**	**474,655**	**405,060**						
ATCO	41,132	37,391	65,098	66,933	77,388	84,106	89.1	87.7	83.9	79.1	80.9	75.8
Kleenheat[57]	172,080	190,764	214,280	220,710	235,698	233,363	93.1	79.1	66.3	82.4	77.8	76.6
Gas Total	**213,212**	**228,155**	**279,378**	**287,643**	**313086**	**317,469**						

	Average duration before a call is answered by an operator (seconds)						Unanswered calls (%)					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Horizon Power	34	20	18	36	40	25	1.7	1.7	1.6	2.6	15.1	8.9
RIA	21	16	12	13	12	12	14.0	3.9	5.0	2.1	2.7	2.5
Western Power	46	50	26	12	14	11	14.6	9.7	9.2	7.0	4.8	3.9
ATCO	16	10	25	31	27	30	1.6	1.5	2.5	3.2	2.7	2.8
Kleenheat	13	21	28	19	21	22	0.4	1.1	3.7	2.2	2.2	2.9

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

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

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

Table 57: Residential and non-residential gas consumption

	Residential gas consumption (GJ)						Non-residential gas consumption (%)					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
ATCO[58]	10,806,658	10,563,707	9,528,366	10,017,511	10,087,162	9,816,762	17,231,682	1,203,416[59]	1,177,507	1,241,075	1,263,629	1,286,095
Esperance Power Station	5,100	6,268	5,506	3,567	3,969	3,981	315	250	243	26,481	28,276	32,669
Kleenheat	2,893	3,060	3,536	6,293	6,769	7,489	19,303	25,152	4,666	227	194	225
State Total	**10,814,651**	**10,573,035**	**9,537,408**	**10,027,371**	**10,193,727**	**9,828,232**	**17,251,300**	**17,423,028**	**16,638,050**	**1,267,783**	**1,865,260**	**1,318,989**

Table 58: Unaccounted for gas (GJ)

Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
ATCO	858,000	866,667	920,371	813,898	707,191	705,987
Esperance Power Station	0	0	0	0	0	0
Kleenheat	344	931	1,158	866	943	529
State Total	**858,344**	**867,598**	**921,529**	**814,764**	**708,134**	**706,516**

Table 59: Percentage of unaccounted for gas on distribution systems

	Total gas consumption (GJ)						Unaccounted for gas (%)					
Distributor	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
ATCO[60]	27,880,360	11,767,123[61]	10,705,873	11,258,586	11,350,791	11,102,857	-	-	-	-	-	-
Esperance Power Station	22,196	28,212	8,202	30,048	32,245		0.0	0.0	0.0	0.0	0.0	0.0
Kleenheat	5,415	6,158	5,749	6,520	6,963	7,714	17.2	17.7	3.0	13.3	13.5	6.9

[58] 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.

[59] 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.

[60] 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.

[61] See the above footnote. *Why is this footnote required for 2011? Footnote 55 already applies it to all years.*

Table 60: Gas main leak repairs

Distributor	2010	2011	2012	2013	2014	2015
ATCO	916	600	830	835	842	575
Esperance Power Station	3	0	0	2	0	0
Kleenheat	0	1	0	1	1	25
State Total	**919**	**601**	**830**	**838**	**843**	**600**

Table 61: Gas meter leak repairs

Distributor	2010	2011	2012	2013	2014	2015
ATCO	1,079	1,008	816	486	471	3,527[62]
Esperance Power Station	0	0	0	0	0	0
Kleenheat	0	0	1	0	2	0
State Total	**1,079**	**1,008**	**817**	**240**	**473**	3,527

Table 62: Gas property service connection meter repairs

Distributor	2010	2011	2012	2013	2014	2015
ATCO	6,481	6,003	5,657	6,614	7,182	5,575
Esperance Power Station	0	1	0	3	0	1
Kleenheat	0	0	0	0	0	42
State Total	**6,481**	**6,004**	**5,657**	**2,131**	**7,182**	**5,618**

[62] ATCO commented that "the increase in Meter Leaks is due to the inclusion of Regulator Leaks, which were previously included in the Connection Leaks statistic. During the reporting period, ATCO enhanced its reporting process to enable Regulator Leaks to be distinguished from other Connection Leaks, and more accurately categorising them as Meter Leaks".

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

	Total number of streetlights						Street light faults logged					
Metropolitan	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Horizon Power	5,017	5,293	5,441	5,993	8,325	8,022	156	168	180	108	149	158
Western Power	187,305	192,890	198,070	199,767	207,146	213,526	39,978	35,912	34,271	36,525	33,447	28,647
State total	**192,322**	**198,183**	**203,511**	**205,760**	**215,471**	**221,548**	**40,134**	**36,080**	**34,451**	**36,633**	**33,596**	**28,805**
	Total number of streetlights						**Street light faults logged**					
Regional	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Horizon Power	9,257	9,610	9,978	10,331	11,298	11,007	192	156	168	166	168	177
RIA	190	190	190	190	190	189	24	36	18	46	18	112
Western Power	35,867	37,018	37,595	37,907	38,539	39,202	6,214	2,922	3,137	3,414	3,220	3,428
State total	**45,314**	**46,818**	**47,763**	**48,428**	**50,027**	**50,398**	**6,430**	**3,114**	**3,323**	**3,626**	**3,406**	**3,717**

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	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Horizon Power	44	48	51	13	30	10	28.2	28.6	28.3	7.8	20.1	6.3
Western Power	5,598	1,134	1,050	899	218	215	14.0	3.2	3.1	2.5	0.7	0.8
State total	**5,642**	**1,182**	**1,101**	**912**	**248**	**225**						
	Number of faults fixed in > 9 days						**Percentage**					
Regional	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Horizon Power	14	17	5	1	14	27	7.3	10.9	3.0	0.9	8.3	15.3
RIA	0	0	7	11	4	0	0.0	0.0	38.9	23.9	22.2	0.0
Western Power	808	83	91	173	32	15	13.0	2.8	2.9	5.1	1.0	0.4
State total	**822**	**100**	**103**	**185**	**50**	**32**						

Appendix 8 – Regulation of Energy Distribution

Licensing Energy Distributors

Definition of a small use customer

The following definitions of a customer are used in this report:

- Customer - means a (small use) customer connection that:
  - consumes not more than 1TJ (or approximately $28,500 to $43,000, depending on the customer's location) of gas per annum, or
  - consumes not more than 160MWh (or approximately $58,000) 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.

The ERA has created a set of handbooks, manuals and guidelines to assist licensees with their reporting obligations. These documents (described below) are available on the ERA website: https://www.erawa.com.au/home under Electricity Licensing Regulatory Guidelines or Gas Licensing Regulatory Guidelines, as applicable.

Electricity Licences

The ERA requires licensees to provide information to fulfil the ERA's 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 its *Electricity Distribution Licence Performance Reporting Handbook* (**Electricity Handbook**).

Gas Licences

The ERA requires licensees to provide information to fulfil the ERA's functions under the *Energy Coordination Act 1994* (**Gas Act**) and to meet the reporting requirements contained in the *Compendium of Gas Licence Obligations* (**Gas Compendium**).[63] 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 its *Gas Distribution Performance Reporting Handbook* (**Gas Handbook**).[64]

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[63] 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.

[64] Gas Compliance Reporting Manual, which can be found on the Authority's website: *Should this refer to the Handbook instead?*

http://www.erawa.com.au/gas/gas-licensing/regulatory-guidelines

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 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**).[65]

The Access Code requires Western Power to provide third parties access to its transmission and distribution network through an Access Arrangement.[66] Access Arrangements detail the terms and conditions, including prices, which apply to third parties seeking the use of regulated electricity networks.

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[67] 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.

Access Arrangements approved by the ERA

Western Power's Access Arrangement for the first access arrangement period (2006/07 to 2008/09), "AA1", commenced on 1 July 2007.

Revisions to this Access Arrangement for the second access arrangement period (2009/10 to 2011/12), "AA2", became 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 published a Further Final Decision on 29 November 2012 after considering Western Power's Amended Proposed Access Arrangement[1], which commenced on 1 February 2013.

More information on Western Power's Access Arrangement is available on the ERA website:

https://www.erawa.com.au/electricity/electricity-access/western-power-network/access-arrangement/access-arrangement-period-2012-2017

[65] The SWIS covers the geographical area from Kalbarri to Albany and from Perth to the Goldfields. The distribution and transmission systems that supply this area are collectively known as the South West Interconnected Network (**SWIN**).

[66] 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

[67] 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 licensing schemes for electricity and gas distribution network providers.

Electricity distribution

Western Power Corporation restructure

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 reason 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, the Electricity Generation and Retail Corporation, trading as Synergy.

Electricity licence types and current licensees

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 and new licences have been granted, leaving a total of seven distribution licences active as at 30 June 2015; of which three licensees supply small use customers and four licensees exclusively supply large use customers.[68]

Gas distribution

AlintaGas restructure

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.

In August 2011, the AlintaGas Networks distribution business (which had previously changed its name from AlintaGas Networks to WA Gas Networks) was acquired by ATCO Australia Pty Ltd, and began trading as ATCO Gas Australia.

Gas licence types and current licensees

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[69] 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 2015.

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

[69] 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.