2010/11 Annual Performance Report
Energy Distributors

May 2012

Economic Regulation Authority

WESTERN AUSTRALIA

Executive Summary

The 2010/11 report continues the Authority's oversight of the performance of electricity and gas distributors that supply small use customers.[1] In previous years, the Authority published separate reports on the performance of electricity and gas distributors; the 2010/11 report is the first to combine electricity and gas distribution performance reports into a single energy distribution performance report.

Energy Distribution Market

The number of electricity distributors who supply small use customers (three) has remained unchanged since 2006/07. The three distributors (Horizon Power, Rottnest Island Authority and Western Power) each operate distribution systems in non-overlapping areas of the State. The number of gas distributors who supply small use customers (three) is also unchanged since 2006/07. Again, the three distributors (ATCO Gas Australia, Esperance Power Station and Wesfarmers Kleenheat Gas) operate distribution systems in non-overlapping areas of the State.

In 2010/11, the state-wide number of customer connections on electricity distribution systems increased by 2.5% (from 1.03 to 1.05 million connections). The South West Interconnected Network (**SWIN**)[2] operated by Western Power accounts for 96% of these connections.

The number of connections on the SWIN increased by 2.4%, while connections in regional areas supplied by Horizon Power increased by 4.9%.[3] The state-wide total number of new electricity connections fell by 4.6% compared to 2009/10. New connections on the SWIN fell by 6.4% (from 26,304 to 24,614), while new connections on the Horizon Power distribution systems increased by 22.6% (from 1,764 to 2,157). Western Power was the only distributor to provide new connections outside of the time specified in the Obligation to Connect Regulations. Over the five years to 2010/11, their on-time delivery of new connections has improved from 79.6% to 96.4%.

The state-wide number of customer connections on gas distribution systems increased by 1.2% (from 629,589 to 637,427 connections). The ATCO distribution systems account for 99.82% of the state-wide total connections.

The number of connections on the ATCO systems increased by 1.2%, and the connections on the Esperance Power Station and Wesfarmers systems increased by 4.5% and 6.7% respectively. Compared to 2009/10, the state-wide number of new distribution connections increased by 15.9% (from 16,977 to 19,679 connections), of which less than 0.1% were not delivered on time.

Distribution System Reliability

Compared to 2009/10, the number of customers on the SWIN who experienced an extended supply interruption (>12 hours) fell by 51.6%, which was not unexpected as the 2009/10 interruptions included a significant storm event in Perth in March 2010. In

[1] Customers who consume not more than 160MWh of electricity or 1TJ of gas per annum.

[2] 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 predominantly (but not completely) comprises of the infrastructure that Western Power owns and operates.

[3] Rottnest Island Authority operates a small distribution system on Rottnest Island. The size of this network has remained unchanged for the past two years.

regional areas supplied by Horizon Power extended interruptions increased by 241% (from 334 to 1,138), compared to 2009/10, mostly due to the floods in Carnarvon and Cyclones Bianca and Carlos. The gas distributors reported that none of their customers experienced an extended interruption during 2010/11, the fourth consecutive year of zero interruptions.

Electricity distributors are required to report on the number of customers who experienced more than 9 supply interruptions in CBD & urban areas and 16 interruptions in the other areas of the State. Compared to 2009/10, the number of CBD & urban customers (supplied by Western Power) who experienced multiple interruptions fell by 46%. Multiple interruptions in the other areas of the State also fell, by 67.6% in areas supplied by Horizon Power and by 71.3% in areas supplied by Western Power.

The NQ&R Code[4] prescribes standards for the average total length of interruptions to customer premises (measured over a four year interval) for CBD, urban and other areas of the State. The standards apply to all interruptions, including those that are out of the reasonable control of the distributor. Over the past three years, Rottnest Island Authority is the only distributor to meet the standard for the other areas of the State. The total length of interruptions on the systems operated by Horizon Power and Western Power exceeded the relevant standard.

The measurement of interruptions under the 2002 SCONRRR Framework[5] (SAIDI, SAIFI and CAIDI)[6] is a more realistic measure of distributor system reliability because they allow for the exclusion of interruption events that caused by factors that are beyond the reasonable control of the distributor. Under the 2002 SCONRRR Framework, the distributors report the total and normalised values of total interruptions. The normalisation process removes days where the duration of interruptions significantly exceed the long-run average performance of the network.

In 2010/11, Horizon Power was the only distributor to report an increase in Total Network SAIDI, up from 125 minutes in 2009/10 to 164 minutes in 2010/11. The increase was the result of large increase in SAIDI on their short rural feeders (<200km long), which are a large proportion of their total network feeder population. Both Rottnest Island Authority and Western Power reported reductions in Total Network SAIDI, by 19.8% (from 177 to 142 minutes) and 18.9% (from 217 to 176 minutes) respectively.

Complaints

Electricity distributors are required to report on two distinct complaints categories: technical quality of service (**QoS**) complaints under the NQ&R Code and customer service complaints under the Electricity Customer Code.[7] Complaint reporting obligations for gas distributors are in the Gas Manual,[8] which covers supply quality & reliability, customer service and network charges and costs.

Compared to 2009/10, the number of QoS complaints received by electricity distributors increased by 3.6% (from 2,112 to 2,187 complaints).[9] The majority of the complaints were

[4] Electricity Industry (Network Quality and Reliability of Supply) Regulations 2005.

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

[6] System Average Interruption Duration Index, System Average Interruption Frequency Index and Customer Average Interruption Duration Index.

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

[8] Gas Compliance Report Manual, which is published by the Authority.

[9] Horizon Power and Western Power were the only distributors to receive complaints in 2010/11. Rottnest Island Authority has not received any complaints under the NQ&R Code and the Electricity Customer Code during the five years to 2010/11.

related to issues that did not fall into any of the seven defined categories (Table 14), followed by low voltage complaints.

In 2010/11, both Horizon Power and Western Power reported falls in the total number of complaints they received by 23% (from 178 to 137 complaints) and 36% (from 2,695 to 1,738 complaints) respectively, compared to the previous year. Both distributors reported that majority of the complaints they received in relation to the Electricity Customer Code were categorised as "other", which covers a range of issues other than administrative and customer service complaints.

In 2010/11, ATCO was the only distributor to receive complaints, which were distributed over all of the available complaint categories. Over the four years to 2010/11, the number of complaints received by gas distributors has varied between 30 and 39 per annum, which is much lower than the 4,000 complaints per annum received by electricity distributors.

Electricity distributors are also required to report on the proportion of complaints that they conclude within 15 working days. In 2010/11, Horizon Power and Western Power concluded 100% and 26% of complaints within 15 business days respectively. Western Power's complaint conclusion performance has deteriorated significantly over the past two years, and over the past four years the best performance was in 2008/09 (65%).

Call Centre Performance

Compared to 2009/10, the total volume of calls to electricity distributor call centres fell by 9% (from 629,130 to 572,149 calls), due to reductions in call volumes to the Horizon Power and Western Power call centres. In 2010/11, the proportion of calls answered within 30 seconds varied between 68% (Western Power) and 97% (Rottnest Island Authority). Over the past three years, the average proportion of calls answered within 30 seconds by the two large call centres was 87% (Horizon Power) and 68% (Western Power).

Compared to 2009/10, the total volume of calls to gas distributor call centres increased by 7% (from 213,212 to 228,155 calls), due to an increase in calls to the Wesfarmers call centre. Over the past three years, the proportion of calls answered within 30 seconds has averaged 89% for ATCO and 84% for Wesfarmers.

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Purpose of this Report

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

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

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

The purpose of this report is to bring transparency and accountability to the performance of energy distribution[10] businesses (electricity and gas) who supply small use customers (see below) and to benchmark, where possible, performance against similar businesses in other energy markets.

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

- All distributors:
    - Customer Connections: information about the total number of connections on the distribution network and the proportion of new connections that have been established by the distributor outside the prescribed time frames.
    - Customer Service: information about customer satisfaction with the service provided by the distributor as measured by level of complaints and customer contact centre responsiveness.
    - Network Reliability: information about the frequency and duration of supply interruptions on the distribution network.
    - Compensation Payments / Guaranteed Service Level Payments: information about the number of payments made by electricity distributors for failing to meet the service standards prescribed in either the *Code of Conduct for the Supply of Electricity to Small Use Customers* (**Electricity Customer Code**) and the *Electricity Industry (Network Quality and Reliability of Supply) Code 2005* (**NQ&R Code**), and payments made by the ATCO Gas Australia under their access arrangement.[11]
- Electricity distributors only:
    - Street Lighting: measures the proportion of faulty street lights that are repaired by a distributor within the prescribed standards.

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

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

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

Background information about energy distribution

Definition of a small use customer

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

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

Distribution Licence Performance Reporting Obligations

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

Electricity Licences

Electricity distribution licences include a condition that the licensee must provide to the Authority any information that the Authority may require to fulfil its functions under the *Electricity Industry Act 2004* (**Electricity Act**). The Authority has specified the non-financial performance information that is to be provided by the electricity distribution licensees who supply small use customers in the *Electricity Compliance Reporting Manual* (**Electricity Manual**) published by the Authority in July 2010. The Electricity Manual incorporates the record keeping requirements of the Electricity Customer Code, which in turn references the 2002 SCONRRR Framework.[12]

Gas Licences

Gas distribution licences include a condition that the licensee must provide to the Authority any information that the Authority may require to fulfil its functions under the *Energy Coordination Act 1994* (**Gas Act)**, and the reporting requirements contained in the Compendium of Gas Licence Obligations (**Gas Customer Code**[13]). The Authority has specified the non-financial performance information that is to be provided by the gas distribution licensees who supply small use customers in the Gas Compliance Reporting

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

[13] The Compendium of Gas Customer Licence Obligations (Gas Customer Code) is made by the Authority pursuant to section 11M and Schedule 1A of the Act.

Manual (**Gas Manual**) published by the Authority in July 2010.[14] The Gas Manual incorporates the record keeping requirements in Gas Customer Code.

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 Authority 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 SWIS, which comprises most, but not all of the South West Interconnected Network (**SWIN**).

The Access Code requires Western Power to provide third parties access to its transmission and distribution network through an Access Arrangement.[15] Access arrangements detail the terms and conditions, including prices, which apply to third parties seeking the use of regulated electricity networks. Western Power's access arrangement for the first access arrangement period (2006/07 to 2008/09, "AA1") was approved by the Authority on 26 April 2007, to become effective from 1 July 2007. Revisions to this access arrangement for the second access arrangement period (2009/10 to 2011/12, "AA2") were approved by the Authority on 19 January 2010, to become effective from 1 March 2010. The access arrangement for the third access arrangement period (2012/13 to 2016/17, "AA3") is currently under development.

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[16] 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 Authority an annual report on its performance against the service standard benchmarks.

Unlike the first two access arrangements, the third access arrangement incorporates price controls to encourage Western Power to deliver services at the lowest efficient cost.[17]

[14] Gas Compliance Reporting Manual, which can be found on the Authority's website: http://www.erawa.com.au/2/319/51/gas_licensing__regulatory_guidelines.pm

[15] Details of the Access Arrangement can be found on the Authority's website: http://www.erawa.com.au/3/882/48/electricity_access__western_powers_approved_access.pm

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

[17] This comprises two components: the service standard adjustment mechanism and the gain sharing mechanism, details of which can be found in Chapter 6 of the Access Code.

The development of the Western Australian energy market

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

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

Electricity distribution

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

- Electricity Networks Corporation (t/a Western Power): operates the majority of the transmission and distribution networks within the South West Interconnected System (**SWIS**);[18]
- 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 passing into law of the Electricity Act. 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:

a) Distribution – construct and operate electricity distribution networks.

b) Generation – construct and operate electricity generation plant.

c) Retail – sell electricity to customers.

d) Transmission – construct and operate electricity transmission networks.

e) Integrated Regional – undertake one or more of the activities listed in (a) to (d) above.

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

Since the introduction of the electricity licensing scheme in 2005, there has been a total of nine distribution licences issued by the Authority. Some of these licences have subsequently been surrendered, leaving a total of six distribution licences active as at 30 June 2011.

Appendix 1 (Figure 1) details the areas of the State that are subject to an electricity distribution licence, or an integrated regional licence, issued by the Authority as at 30 June 2011.[19]

Gas distribution

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

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

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

- Alinta Sales assumed ownership of the retailing operations of AlintaGas; and
- AlintaGas Networks[20] - assumed ownership of AlintaGas' distribution networks in the Coastal, Goldfields-Esperance and Great Southern licence areas.

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

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

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

Since the introduction of the gas licensing scheme in 1999 there has been a total of four gas distribution licences[21] issued by the Authority 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 2011.

[19] Details of electricity licenses can be found on the Authority's web site: http://www.era.wa.gov.au/2/245/51/licence_holders.pm

[20] Following a change of ownership in 2011, the AlintaGas Networks distribution networks are now owned by ATCO Gas Australia.

[21] 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.

Appendix 1 (Figure 2) shows the eight gas supply areas in the State[22] and the locations of gas distribution operations that were licensed by the Authority as at 30 June 2011.[23]

[22] Figure 2 shows the Albany area separately. However, this forms part of the Great Southern gas supply area.

[23] Details of gas licenses can be found on the Authority's web site:
http://www.erawa.com.au/2/315/51/gas_licensing__licence_holders.pm

Energy Distribution Market

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

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

Energy Distributors

The number of licensed electricity and gas distributors has remained almost unchanged since 2006/07. Table 1 details the number of licensed electricity and gas distributors during the five years ending 30 June 2011.

Electricity

When the Electricity Act commenced in 2005, existing retailers were required to obtain a licence from the Authority by 30 June 2006. The majority of the licensed electricity distributors who are currently active in the market were granted a licence in 2005 or 2006. Between 1 July 2006 and 30 June 2011, the total number of licences has fallen from eight to six following EDL NGD (WA) and Central Norseman Gold Corporation surrendering their distribution licences in 2010.[24]

Table 1: Number of licensed distributors

	2006/07	2007/08	2008/09	2009/10	2010/11
Electricity					
Licensed Distributors	8	8[25]	8	6	6
Distributing to small use customers	3	3	3	3	3
Gas					
Licensed Distributors[26]	3	4	4	3	3

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

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

[25] Central Norseman Gold Corporation (CNGC) was granted a distribution licence on 1 July 2007 following its takeover of the distribution assets of Croesus Mining. Croesus Mining surrendered its distribution licence to coincide with the granting of the CNGC licence.

[26] The licensing scheme in Part 2A of the Gas Act only covers distribution systems that supply small use customers.

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

Horizon Power operates the NWIS[27] and 36 islanded distribution systems in regional towns and remote communities across the State.

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

Gas

The Authority took over responsibility for licensing gas retailers from the Office of Energy in 2005. At that time there were three licensed gas distributors: AlintaGas Networks, Wesfarmers Kleenheat Gas (**Wesfarmers**) and WorleyParsons Asset Management (**WorleyParsons**). Between 1 July 2006 and 30 June 2011, one new distribution licence was issued to Origin Energy (in June 2008). Origin Energy subsequently surrendered its licence in June 2010.

Following a change in ownership in 2011, AlintaGas Networks is now called ATCO Gas Australia (**ATCO**). ATCO operates natural gas distribution systems supplying the coastal area from Geraldton to Busselton and Kalgoorlie. ATCO also operates the distribution system that supplies LPG[28] in Albany.

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

Customer Connections

Figure 1 details the total number of small use customer connections on electricity and gas distribution systems in the State. During 2010/11, the state-wide number of electricity customer connections increased by 2.5% (from 985,000 to 1,051,789 connections) and the state-wide number of gas customer connections increased by 1.3% (from 629,589 to 637,479 connections).

Table 2 details the number of customer connections on each electricity distributor's systems. Western Power, who operates the SWIN,[29] accounts for 96% of the total state-wide small use customer connections.

Western Power recorded a 2.4% increase in the number of connections, compared to 2009/10. Horizon Power recorded a 4.9% increase in connections, while the number of connections on the Rottnest Island Authority distribution system remained unchanged, over the same period.

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

[28] Liquified Petroleum Gas.

[29] South West Interconnected Network.

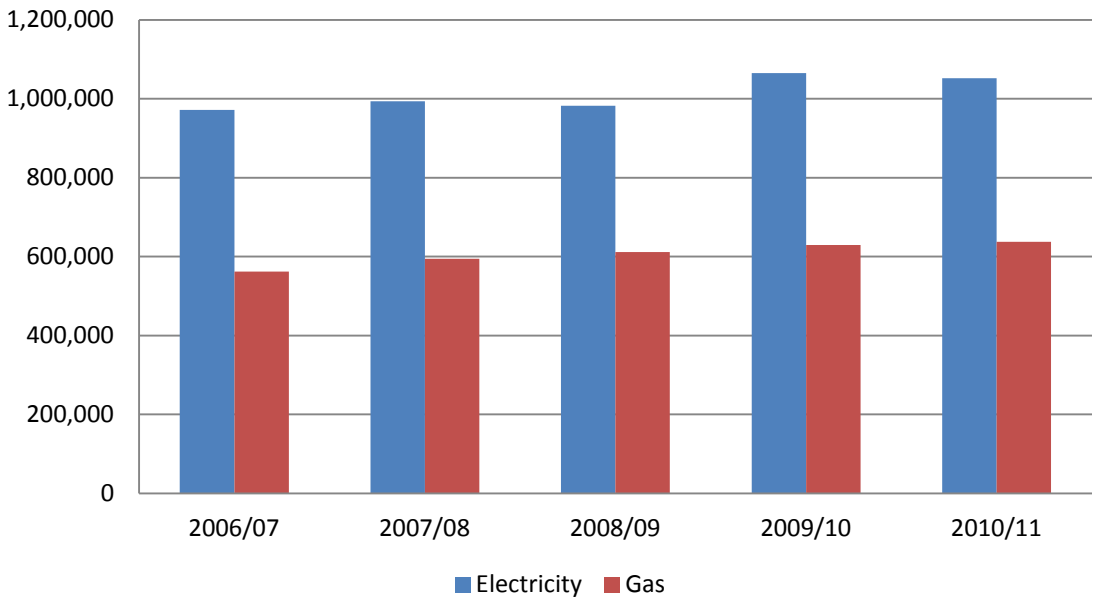


Figure 1: Small use customer connections

Connections on electricity distribution systems

Table 2: Small use electricity connections by distributor

Distributor	2006/07	2007/08	2008/09	2009/10	2010/11
Horizon Power	36,542	37,580	39,577	41,143	43,181
Rottnest Island Authority	98	99	191[30]	83	83
Western Power	935,393	955,551	942,381	985,000	1,008,525
State Total	**972,033**	**993,230**	**982,149**	**1,026,226**	**1,051,789**

Table 3 details the number of new connections established by electricity distributors in 2010/11 compared to the previous year. The total number of new connections on electricity distribution systems fell by 4.6%. Horizon Power reported a 22.3% increase, while Western Power recorded a 6.4% decrease, in new connections over this time.

Table 3: New connections on electricity distribution systems

	2009/10			2010/11		
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
Horizon Power	1,764	0	0.0	2,157	0	0.0
Rottnest Island Authority	0	0	0.0	0	0	0.0
Western Power	26,304	957	3.6	24,614	885	3.6
State Total	**28,068**	**957**	**-**	**26,771**	**885**	**-**

The *Electricity Industry (Obligation to Connect) Regulations 2005* prescribe the conditions for, and the time frames associated with, establishing a connection to an electricity distribution system for a small use customer. Electricity distributors are required to connect a customer within 20 business days for a new connection to the distribution

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

system.[31] As was the case in 2009/10, Western Power was the only distributor to report establishing connections outside the prescribed time limits. In 2010/11, the proportion of late connections was unchanged from the previous year (Table 3). Figure 2 shows the proportion of late connections established by Western Power over the past five years has fallen significantly, from just over 20.4% to 3.6%.

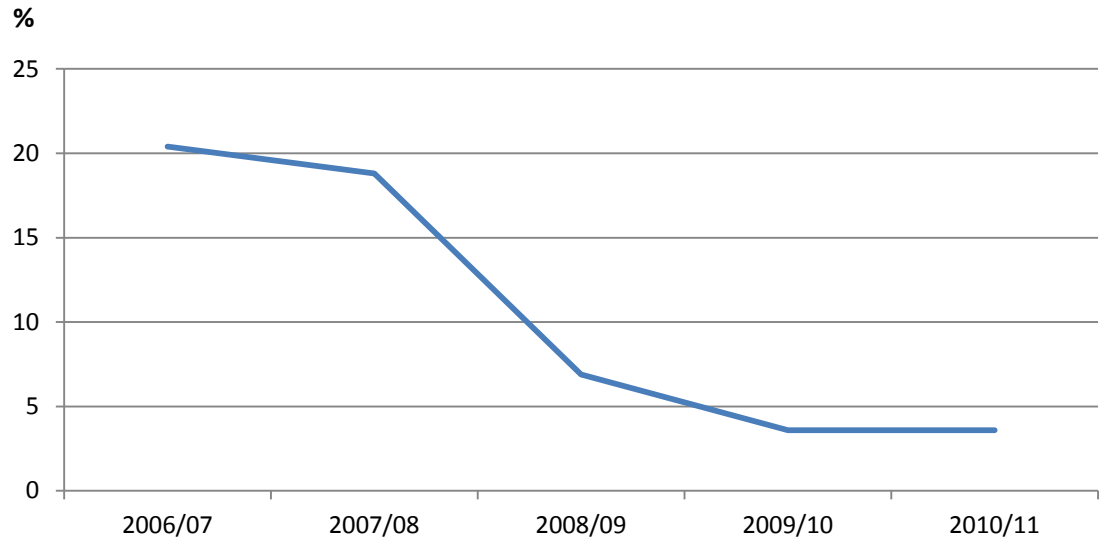


Figure 2: Proportion of late connections established by Western Power

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, with 99.82% of total gas connections in 2010/11.

Compared to 2009/10, ATCO recorded a 1.2% increase in the number of connections. Wesfarmers recorded a 6.7% increase in connections, and Esperance Power Station a 4.5% increase in connections.

Table 4: Small use gas connections by distributor

Distributor	2006/07	2007/08	2008/09	2009/10	2010/11
ATCO	561,437	593,634	610,294	628,537	636,323
Wesfarmers	636	791	831	808[32]	862
Esperance Power Station	197	209	242	266	280
State Total	**562,270**	**594,634**	**611,367**	**629,589**	**637,427**

Table 5 shows the number of new connections on each gas distributor's system and the proportion of these connections that were not provided in a time agreed with the customer.

[31] The 20 days is subject to conditions relating to the proximity of the customer premises to the distribution network, access to land and contractual agreements being in place.

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

Compared to 2009/10, the total number of new connections established increased by 15.9%, driven by the growth on the ATCO systems. The number of connections not provided at a time agreed with the customer remained relatively unchanged. Comparing Table 5 with Table 3 it can be seen that the proportion of late connections by gas distributors is much smaller than the level reported by electricity distributors.

Table 5: New connections on gas distribution networks

	2009/10			2010/11		
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	16,911	6	0.04	19,611	7	0.04
Wesfarmers	42	0	0.00	54	0	0.00
Esperance Power Station	24	0	0.00	14	0	0.00
State Total	**16,977**	**6**	**-**	**19,679**	**7**	**-**

Electricity Distribution System Reliability

Electricity Supply Interruptions

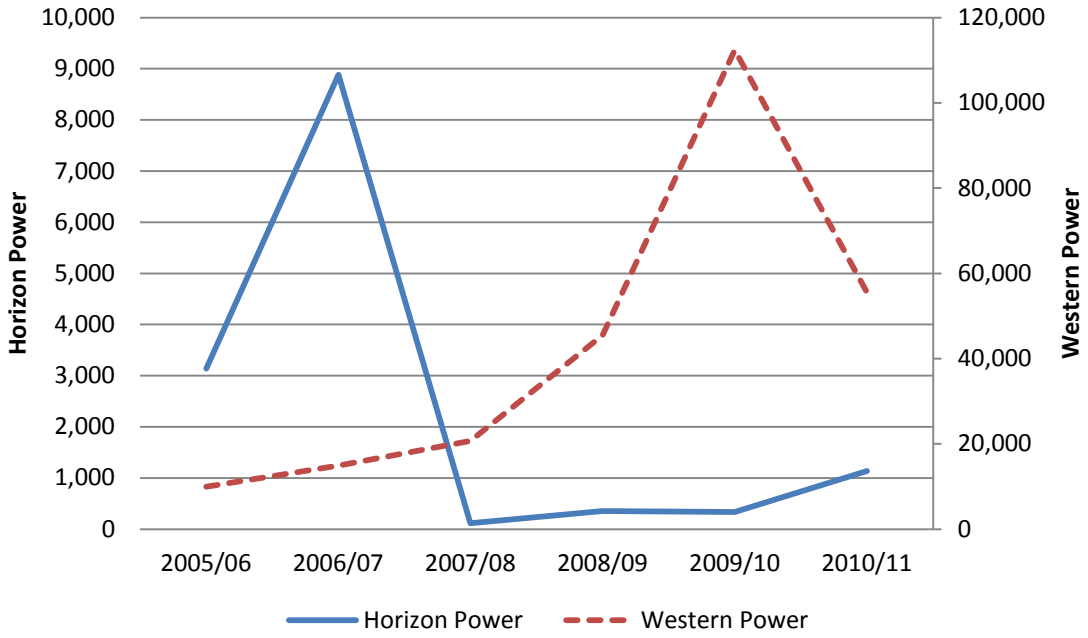
Section 12 of the NQ&R Code prescribes the following reporting standards in respect of interruptions to supply of small use customer premises:

- The number of customer premises that have experienced interruptions that exceed 12 hours continuously.
- The number of times customer premises in the Perth CBD and Urban areas[33] have experienced more than 9 interruptions during the reporting period.
- The number of times customer premises in the other areas of the State have experienced more than 16 interruptions during the reporting period.

Figure 3 shows the number of customer premises on the Horizon Power and Western Power distribution systems that experienced an extended interruption to supply (>12 hours continuously) over the past six years.[34]

Compared to 2009/10, Western Power recorded a 51.6% fall in the number of customer premises that have experienced extended interruptions. This is not to be unexpected, given that the large increase in interruptions in 2009/10 was the result of the significant storm event which affected the Perth metropolitan area in March 2010. Over the same period, Horizon Power reported extended interruptions increased by 240.7% (from 334 to 1,138).

Figure 3: Number of extended interruptions of Horizon Power and Western Power customers



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

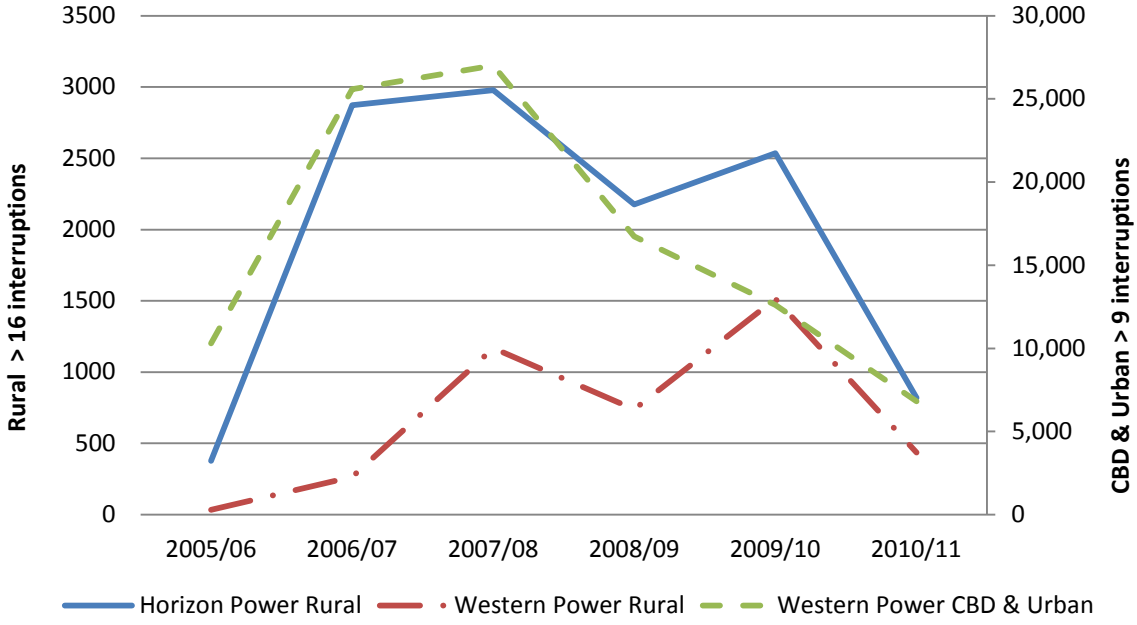
[34] Rottnest Island Authority is excluded from the comparison because it has not reported any extended interruptions over the past six years.

Horizon Power commented that more than half of the total number of extended interruptions were attributable to severe weather events, including the Carnarvon floods, Cyclones Bianca and Carlos, a mini-tornado in Karratha and flooding in Warmun.

Figure 4 details the number of multiple interruptions to customer premises in CBD and Urban areas, and in all other areas of the State (**Rural areas**). The Urban areas of the State are exclusively supplied by Western Power, whereas both Horizon Power and Western Power supply Rural areas.[35]

Compared to 2009/10, the number of customer premises in CBD & Urban areas that have experienced more than 9 supply interruptions fell by 46%. The total number of Rural area premises that experienced more than 16 supply interruptions also fell: by 67.6% for Horizon Power and by 71.3% for Western Power.

Figure 4: Multiple supply interruptions in specified areas of the State



Gas Supply Interruptions

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

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

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

[35] Rottnest Island Authority also supplies Rural areas, but it has not reported any multiple interruptions to customer premises since 2006/07. However, Table 45 details multiple interruption performance for all distributors over the past six years.

2010/11 is the fourth consecutive year that gas distributors have reported that they did not have any customer supply interruptions longer than 12 hours continuously, nor did any of their customers experience five or more supply interruptions during the reporting year.

Distribution Network Reliability Performance (Network Quality and Reliability Code)

Schedule 1[36] of the NQ&R Code requires distributors to report on the following measures of system reliability for each discrete area[37] of the State:

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

The values of the NQ&R Code reliability indices reported in this section do not exclude Major Event Days (**MED**),[38] in line with the requirements of the NQ&R Code. The approach taken in the NQ&R Code is unusual in that, by not excluding Major Event Days, the distributor reliability performance includes interruptions caused by factors that are generally outside the control of the distributor, such as third party action, severe storms and other natural disasters.

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

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

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

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

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

[37] The NQ&R Code defines 3 discrete areas for reliability reporting: Perth CBD, Urban and all other areas of the State. Distributors are also required to report on the reliability performance for each isolated system that they operate.

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

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

	The Perth CBD[39]	Urban areas (excluding Perth CBD)	Any other area of the State
Average total length of interruptions (minutes per annum)	30	160	290

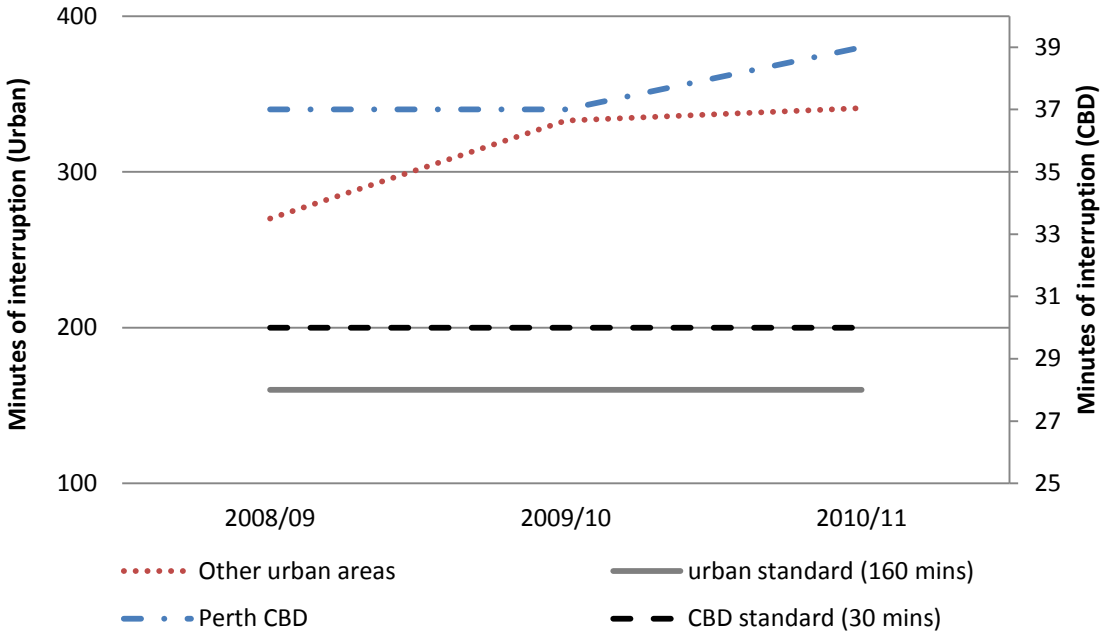
Horizon Power commented that:

> Clause 13(2) states "A transmitter or distributor must, so far as is reasonably practicable, ensure that for customer premises in an area referred to in the first column of the Table to this subsection the average total length of interruptions of supply, as calculated under subsection (3), does not exceed the number of minutes specified in the second column opposite the reference to that area." Hence the 290 reliability value that we are to achieve is the normalised value where we exclude faults that "so far as is reasonably practicable" are beyond our control. This document reads as if All faults should average under 290 minutes. We don't have an All Faults limit specified in the Code.

The Authority does not agree with Horizon Power's interpretation of clause 13 of the NQ&R Code. Clause 13(2) of the Code requires a distributor to take reasonable measures to ensure their network meets the required interruption standard. Clause 13(3) of the Code (which specifies the method of calculating the average interruption length) does not specify any criteria for excluding interruptions from the calculation of total average length of interruptions. Accordingly, the Authority considers the correct interpretation of clause 13(3) of the Code is to include all interruptions in the calculation.

System Reliability in the Perth CBD and Urban Areas

Figure 5: Average total duration of interruptions in the Perth CBD and other urban areas



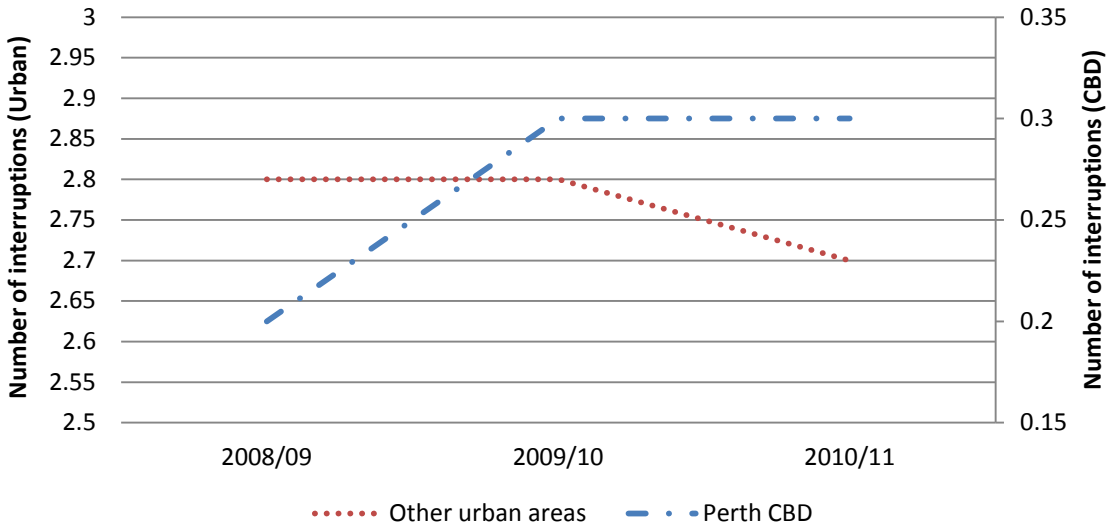
Western Power is the only distributor that supplies customers in the Perth CBD. Figure 5 details the average total length of interruptions for the three years to 30 June 2011. The total length of interruptions rose from 37 minutes in 2009/10 to 39 minutes in 2010/11, which exceeded the standard prescribed in the NQ&R Code (Table 6) by 9 minutes.

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

Western Power is also the sole electricity distributor supplying Urban areas. Figure 5 shows that the total length of interruptions increased from 333 minutes in 2009/10 to 341 minutes in 2010/11. The total length of interruptions in 2010/11 exceeded the standard prescribed in the NQ&R Code by 181 minutes; the third consecutive year that the standard has not been met.

Figure 6 shows that the average frequency of supply interruptions experienced by customers in the Perth CBD (0.30) is unchanged from 2009/10. Conversely, the frequency of supply interruptions in Urban areas decreased by from 2.8 to 2.7 over the same period.

Figure 6: Average frequency of supply interruptions in CBD and Urban areas



System Reliability in Other Areas of the State

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

Rottnest Island Authority is the only distributor that has met the 290 minutes of total interruptions to customer premises prescribed in the NQ&R Code (Table 6); 2010/11 is the third consecutive year that the standard has been met.

In 2010/11, Horizon Power exceeded the standard by 7 minutes, which is an improvement on the two previous years. Horizon Power commented that:

> ... Horizon Power includes Generation and Transmission outages which together constitute a significant portion (9.7%) of the All Faults Minutes of Interruption. Removing Generation & Transmission the number would reduce to 268 minutes.

The Authority is surprised that Horizon Power has been including generation outages in the calculation of network reliability. The intent of the NQ&R Code is to set standards for the performance of distribution and transmission networks therefore generation outages caused should not be included in the calculation of network reliability.

Compared to 2009/10, Western Power reported a 14% increase (from 679 to 777 minutes) in the total duration of interruptions. This is the second consecutive year that Western Power has reported an increase in the duration of interruptions.[40]

Figure 8 details the average frequency of interruptions to customer premises in other areas of the State.

Figure 7: Average total duration of interruptions in other areas of the State

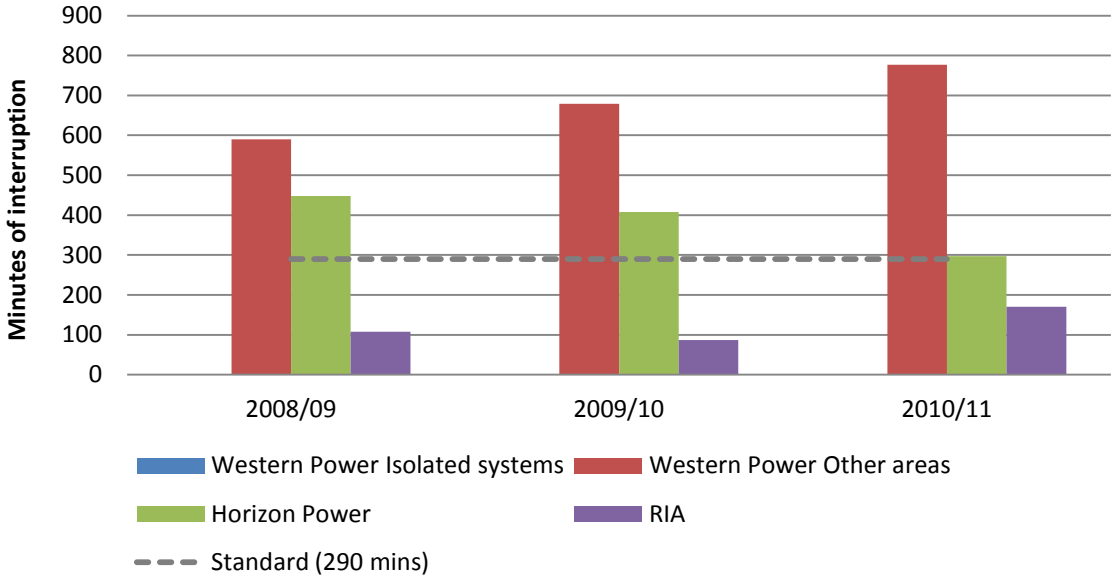
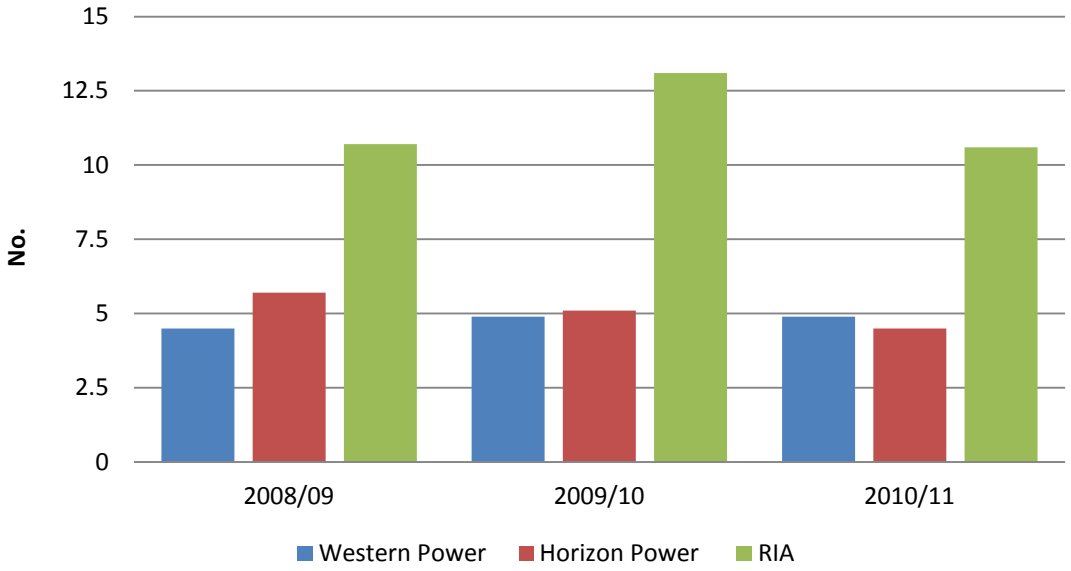


Figure 8: Average frequency of interruptions in other areas of the State



The frequency of interruptions on the Horizon Power and Western Power systems has remained relatively unchanged over the past three years. However, the frequency of

[40] Western Power also operate one isolated system (Ravensthorpe), which was detached from the SWIN in 2009. The two year average total duration of interruptions for Ravensthorpe was 646 minutes.

interruptions on the Rottnest Island Authority system has fallen to 10.6, down from a peak of 13.1 in 2009/10.

Electricity Distribution System Reliability Performance (2002 SCONRRR Framework)

The 2002 SCONRRR[41] reliability performance reporting indicators are based on the definitions in standard IEEE 1366-2003[42]. Measures of supply reliability include:

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

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

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

Prior to 2009/10, the calculation of the Normalised Distribution Network Unplanned measures was based on the definition in the 2002 SCONRRR Framework, which excludes outages that were beyond the reasonable control of the distributor and any outage (irrespective of the cause) that contributes more than three minutes to the network SAIDI value.

In November 2009, the Australian Energy Regulator[43] 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 Authority 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 Authority has adopted the MED method to exclude unplanned interruptions from the Normalised Distribution Network Unplanned SAIDI, commencing from the 2009/10 reporting period.

The 2002 SCONRRR Framework applies the SAIDI, SAIFI and CAIDI reliability measures to the four classes of distribution network feeders that are described in Table 20.

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

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

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

Table 7: Distribution feeder classifications (SCONRRR)

Description			
CBD[44]	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 CBD and Urban distribution 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. This is the third year that distributors have reported Total Network performance.

Two measures of SAIDI, SAIFI and CAIDI are presented in this section; Overall and Normalised Distribution Network - Unplanned. The 2002 SCONRRR[45] 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 generation outages, transmission outages, directed load shedding and unplanned outages where the daily SAIDI exceeds the MED threshold.

System Average Interruption Duration Index (SAIDI)

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

Of particular note is the much higher values of normalised SAIDI for the long rural feeders (>200km long) compared to the short rural feeders. The higher value of long rural feeder SAIDI is attributable to the relatively remote locations of these feeders and the increased time needed for a repair crew to attend site in the event of a line failure.

Table 8 shows that the much higher values of normalised SAIDI on long rural feeders have relatively little impact on the Total Network SAIDI because long rural feeders represent a small proportion of the overall feeder population in the Horizon Power and Western Power distributions systems.

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

[45] 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 - 2010/11

Distributor	Overall Average Interruption Duration (minutes per annum)				
	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	143	307	1400	329
Rottnest Island Authority	N/A	N/A	142	N/A	142
Western Power	42	223	475	1232	383
	Normalised Average Interruption Duration (minutes per annum)				
	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	93	147	677	164
Rottnest Island Authority	N/A	N/A	142	N/A	142
Western Power	30	120	192	529	176

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

Table 9 compares the normalised SAIDI values reported by distributors in 2010/11 with the previous year. It can be seen that Horizon Power was the only distributor to report an increase in Total Network SAIDI, driven by increases in Urban and Short Rural feeder SAIDI performance. Horizon Power commented that more than the increase in SAIDI was caused by severe weather events, including the Carnarvon floods, Cyclones Bianca and Carlos, a mini-tornado in Karratha and flooding in Warmun.

Western Power reported an 18.9% decrease in Total Network SAIDI, with the performance of all except CBD feeders contributing to the decrease.

Table 9: Comparison of normalised SAIDI for each electricity distributor in 2009/10 and 2010/11

Distributor	2009/10					2010/11				
	CBD	Urban	Short Rural	Long Rural	Total Network	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	19	60	1385	125	N/A	93	147	677	164
Rottnest Island Authority	N/A	N/A	177	N/A	177	N/A	N/A	142	N/A	142
Western Power	1	156	212	661	217	30	120	192	529	176

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

System Average Interruption Frequency Index (SAIFI)

Table 10 details the overall and normalised SAIFI values for all categories of feeder operated by the three distributors. Because the SAIFI associated with the interruptions that are excluded from the calculation of normalised SAIDI are also excluded from the calculation of normalised SAIFI, the normalised values of SAIFI in Table 10 are also smaller than the overall values.

The susceptibility of long rural feeders to interruptions can be seen in Table 10, where the SAIFI for the long rural feeders operated by Horizon Power and Western Power is between 3 and 4 times larger than that of the short rural feeders.

Only a small proportion of the SAIFI on Horizon Power's feeders was caused by factors beyond their control. This contrasts with Western Power, where between 54% and 72% of the SAIFI was caused by factors within their control.

Table 10: Overall and normalised SAIFI for each distributor – 2010/11

Distributor	Overall Distribution network - Average Interruption Frequency (per annum)				
	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	2.4	3.5	14.2	3.8
Rottnest Island Authority	N/A	N/A	5.0	N/A	5.0
Western Power	0.4	2.0	3.1	5.4	2.6
	Normalised Distribution network - Average Interruption Frequency (per annum)				
	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	1.9	3.0	10.3	3.2
Rottnest Island Authority	N/A	N/A	5.0	N/A	5.0
Western Power	0.2	1.3	2.1	3.9	1.8

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

Table 11 compares the normalised SAIFI values reported by distributors in 2010/11 with the previous year. It can be seen that the change in SAIFI for each distributor broadly follows the pattern for normalised SAIDI (Table 9).

Table 11: Comparison of normalised SAIFI for each electricity distributor in 2009/10 and 2010/11

Distributor	2009/10					2010/11				
	CBD	Urban	Short Rural	Long Rural	Total Network	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	0.2	1.0	10.0	1.4	N/A	1.9	3.0	10.3	3.2
Rottnest Island Authority	N/A	N/A	13.0	N/A	13.0	N/A	N/A	5.0	N/A	5.0
Western Power	0.02	1.6	2.3	4.2	2.0	0.2	1.3	2.1	3.9	1.8

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

Customer Average Interruption Duration Index (CAIDI)

Table 12 details the overall and normalised CAIDI values for all categories of feeder operated by the three distributors. The CAIDI values for each type of feeder are different to that of SAIDI and SAIFI values, because SAIDI and SAIFI measure the effect of interruptions averaged over all the customers that are supplied by each class of feeder whereas CAIDI measures the effect of interruptions only for those customers who have experienced at least one interruption during the reporting period.[46] For this reason, CAIDI is more representative of the actual customer experience than SAIDI.

In the CBD areas, comparing the overall CAIDI and overall SAIDI values show that the interruptions over the year affected relatively few of the customers connected to the CBD distribution system, but the average outage duration experience by each customer who

[46] Standard IEEE 1366-2003 defines CAIDI as being the ratio of SAIDI/SAIFI.

was interrupted was similar to that for a customer on the adjacent Urban distribution systems operated by Western Power.

Table 12: Overall and normalised CAIDI for each electricity distributor – 2010/11

Distributor	Overall Distribution Network - Average Interruption Duration (minutes per annum)				
	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	60	88	99	87
Rottnest Island Authority	N/A	N/A	27	N/A	27
Western Power	112	113	155	227	148
	Normalised Distribution Network - Average Interruption Duration (minutes per annum)				
	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	48	48	66	51
Rottnest Island Authority	N/A	N/A	27	N/A	27
Western Power	128	91	91	137	100

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

Table 13 compares the normalised CAIDI values reported by distributors in 2010/11 with the previous year.

Horizon Power reported a 42% fall in Total Network CAIDI (from 88 to 51 minutes), which is due to reductions in CAIDI for all three feeder categories. Western Power reported a 7.4% fall in Total Network CAIDI, which was the result of reductions in Urban and Long Rural CAIDI, and despite an almost fivefold increase in CBD feeder CAIDI.[47]

Table 13: Comparison of normalised CAIDI for each electricity distributor in 2009/10 and 2010/11

Distributor	2009/10					2010/11				
	CBD	Urban	Short Rural	Long Rural	Total Network	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	90	60	138	88	N/A	48	48	66	51
Rottnest Island Authority	N/A	N/A	14	N/A	14	N/A	N/A	27	N/A	27
Western Power	27	101	91	158	108	128	91	91	137	100

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

Gas Distribution System Reliability Performance (2002 SCONRRR Framework)

In previous years, the Authority's annual performance report on gas distributors has included distribution system reliability based on the 2002 SCONRRR Framework reliability reporting indicators (SAIDI, SAIFI and CAIDI). However, after giving careful consideration to the utility of the reliability data actually reported by the gas distributors, the Authority has decided to discontinue reporting against the 2002 SCONRRR reliability indicators for gas distribution systems.

[47] Because the CBD feeders are such a small proportion of the total distribution system, the CBD CAIDI does not contribute much to the Total Network CAIDI.

A key consideration in the Authority's decision making process is that the interruption of gas supply on a distribution main does not necessarily result in an interruption of supply to the customers connected downstream the quantity of gas stored under pressure in the main may continue to supply customers for some time after the interruption commences. This makes it difficult to determine how many customers actually experience an interruption of their supply and the duration of the interruption.

The Authority proposes to instead continue to report on planned and unplanned interruptions, including the two interruption measures currently in place (see earlier in this section) for unplanned interruptions, with the possibility of further expansion of the interruption reporting measures in future years.

Complaints

Electricity Distributors

Complaints Recorded under the SCONRRR 2002 Framework

Table 14 details of the technical quality of service (**QoS**) complaints that have been received by distributors during 2010/11.

Rottnest Island Authority did not receive any QoS complaints during 2010/11. A significant proportion of the complaints received by Horizon Power and Western Power were categorised as 'other' (technical matters not falling into the other complaint categories). This is consistent with previous years, where a high proportion of the QoS complaints to Horizon Power and Western Power have been categorised as "other".

Table 14: Technical Quality of Service (QoS) complaints – 2010/11

	Horizon Power	Western Power
Total number of technical QoS complaints	29	2,158
Complaint categories		
Low supply voltage complaints (%)	31.03	12.79
Voltage dip complaints (%)	0.00	0.00
Voltage swell complaints (%)	0.00	0.00
Voltage spike complaints (%)	0.00	0.00
Waveform distortion complaints (%)	0.00	0.00
TV or radio interference complaints (%)	0.00	9.45
Noise from appliances complaints (%)	0.00	0.00
Other complaints (%)	68.97	77.76

Table 15 details the number of QoS complaints received by distributors between 2007 and 2011. It can be seen that the the total number of QoS complaints received by distributors varies year on year, but there has been an upward trend in the number of complaints received by Western Power over the past two years.

Table 15: Technical Quality of Service (QoS) complaints over the five years to 2010/11

Distributor	2007/08	2008/09	2009/10	2010/11
Horizon Power	96	63	44	29
Rottnest Island Authority	0	1	0	0
Western Power	1,874	1,646	2,068	2,158
State Total	**1,970**	**1,710**	**2,112**	**2,187**

The 2002 SCONRRR Framework requires distributors to also report on the likely cause of the problems that led to a technical QoS complaint. Table 16 provides a breakdown of the cause of the technical QoS complaints received by Horizon Power and Western Power during 2010/11. Horizon Power reported that the majority of the QoS complaints it received were due to "network equipment faulty" (86.21%). Western Power reported that they were unable to identify the cause of just 43.8% of their QoS complaints, and that a further 39.6% of complaints were cause by factors other than the categories specified in the SCONRRR framework.

Table 16: Likely cause of technical Quality of Service (QoS) complaints – 2010/11

Likely cause of technical QoS complaints	Horizon Power	Western Power
Network equipment faulty (%)	86.21	4.68
Network interference by network service provider equipment (%)	0.00	0.00
Network interference by another customer (%)	0.00	0.00
Network limitation (%)	0.00	9.18
Customer internal problem (%)	0.00	1.81
No problem identified (%)	0.00	43.79
Environmental (%)	0.00	0.93
Other (%)	13.79	39.62

Complaints Recorded under the Electricity Customer Code

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

Rottnest Island Authority reported that it did not receive any complaints under the Electricity Customer Code in 2010/11, nor any of the preceding years.

Table 17 details the complaints received by Horizon Power and Western Power over the past five years. In 2010/11, both Horizon Power and Western Power reported falls in the total number of complaints (by 23% and 36% respectively) they received, compared to the previous year. Over the past five years, both distributors reported that the administrative and customer service complaints were in the minority.

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

	2006/07	2007/08	2008/09	2009/10	2010/11
Horizon Power					
Administrative and customer service complaints	0	51	77	65	58
Other complaints	0	207	72	113	79
Total complaints	185	118	149	178	137
Western Power					
Administrative and customer service complaints	266	263	253	181	101
Other complaints	1,672	2,228	2,592	2,514	1,637
Total complaints	1,938	2,491	2,845	2,695	1,738

The distributors are also required to report on their complaint resolution performance, which is measured as the proportion of complaints that they conclude within 15 business days of receipt.[48] Figure 9 shows the complaint resolution performance of Horizon Power and Western Power for the past four years.

Since reporting commenced in 2008, Horizon Power has resolved all of the complaints within 15 business days. However, Western Power has reported a significant decline in the proportion of complaints resolved within 15 business days over the past two years. In

[48] It should be noted that this measure applies to the combined complaints under the Electricity Customer Code and the NQ&R Code. As such, it is possible that the resolution performance for Electricity Customer Code complaints may differ slightly from the values presented here.

2010/11, only 26% of complaints were resolved within 15 business days, despite a significant fall in the total volume of complaints received. The Authority is of the view that Western Power needs to take measures to improve the timeliness with which it concludes customer complaints.

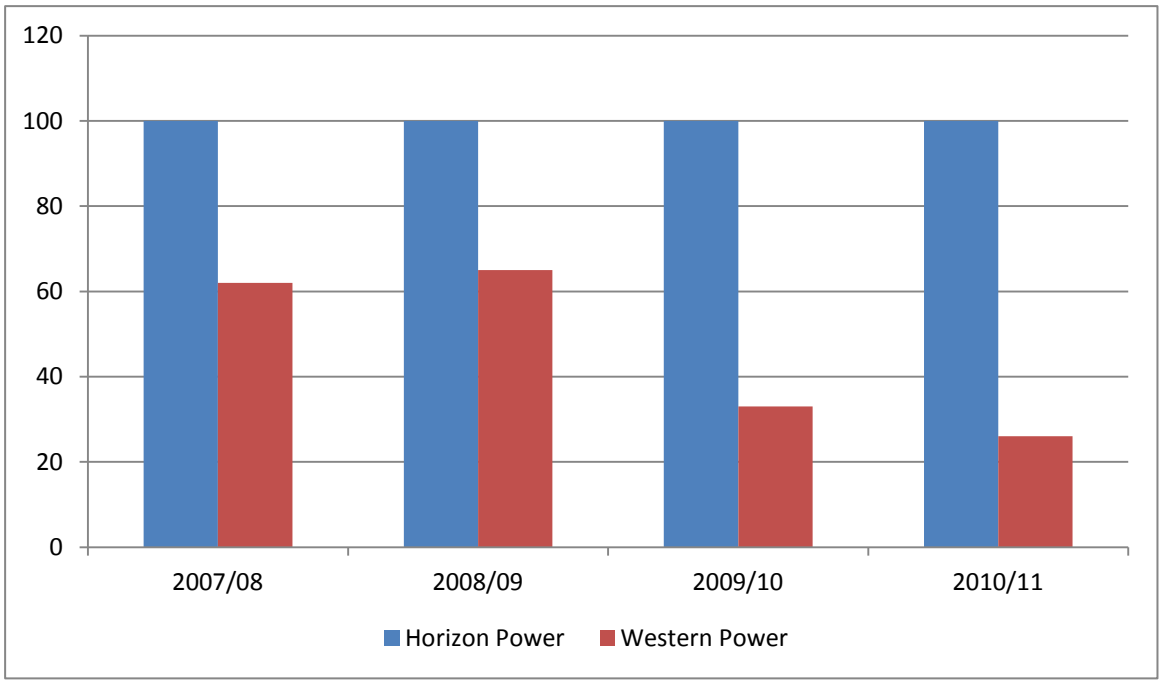


Figure 9: Electricity distributor complaint resolution performance (Electricity Customer Code)

Gas distributors

This is the fourth year that gas distributors have been required to report on the level of complaints. The Gas Manual has a complaint recording framework that is based on the SCONRRR 2002 Framework and regulatory reporting frameworks in other jurisdictions.

Table 18 details the number of complaints received by gas distributors over the past 4 years. Comparing Table 18 with Table 15 and Table 16, the level of complaints received by gas distributors is much lower than those received by electricity distributors.

Table 18: Complaints received by gas distributors

Distributor	2007/08	2008/09	2009/10	2010/11
ATCO	33	30	38	35
Esperance Power Station	0	0	1	0
Wesfarmers	0	0	0	0
State Total	**33**	**30**	**39**	**35**

Table 19 categorises the complaints received by the distributors in 2010/11. The only distributor to receive complaints was ATCO and the table shows that their complaints were distributed across all of the available complaint categories.

Table 19: Gas complaints by category - 2010/11

Complaint Category	ATCO	Esperance Power Station	Wesfarmers
Total Number of Complaints	35	0	0
Connection and Augmentation (%)	11.4	0.0	0.0
Reliability of Supply (%)	22.9	0.0	0.0
Quality of Supply (%)	5.7	0.0	0.0
Network Charges and Costs (%)	2.9	0.0	0.0
Administrative Processes or Customer Service (%)	5.7	0.0	0.0
Other (%)	51.4	0.0	0.0

Call Centre Performance

A customer call centre comprises a dedicated telephone infrastructure and customer service agents to handle customer enquiries. The telephone infrastructure is capable of recording a range of information about the calls that it is handling, including performance statistics.

Electricity Distributor Call Centres

All three distributors operated call centres during 2010/11. Horizon Power and RIA outsource their call centres to other service providers, while Western Power operates an in-house call centre to handle calls related to its distribution business. Horizon Power's call centre handles calls for both the distribution and retail sides of their business, so their call centre performance includes retail calls too.

Table 20 details the volume of calls to electricity distributor call centres over the past five years. Compared to 2009/10, the total volume of calls has fallen by 9%, mostly due to a similar reduction in the volume of calls to Western Power. However, it is notable that the volume of calls received by Western Power in 2009/10 was at an all time high because of the storm event in March 2010. However, the volume of calls to Western Power in 2010/11 is still nearly 33% higher than in 2008/09.

Rottnest Island Authority has also reported a substantial increase in the volume of calls to its call centre. This increase needs to be treated with caution because the call centre also handles calls for other parts of their business as well.

Table 20: Volume of calls to electricity distributor call centres

	2006/07	2007/08	2008/09	2009/10	2010/11
Horizon Power	111,919	85,356	94,018	89,200[49]	71,251
Rottnest Island Authority	N/A	N/A	N/A	1,027[50]	5,272
Western Power	66,351	360,114	373,761	538,903	495,626
State Total	**178,270**	**445,470**	**467,779**	**629,130**	**572,149**

Figure 10 details the percentage of calls responded to (answered by a customer service agent) within 30 seconds by electricity distributor call centres.

Since commencing the call centre service in 2009/10, Rottnest Island Authority has recorded the highest call response rate of the three distributors, even though there was a five-fold increase in calls during 2010/11 (Table 20). Over the past three years, the percentage of calls answered within 30 seconds by the Horizon Power and Western Power call centres has varied around an average of 87% and 68% respectively.

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

[50] 2009/10 was the first year that Rottnest Island Authority operated a call centre.

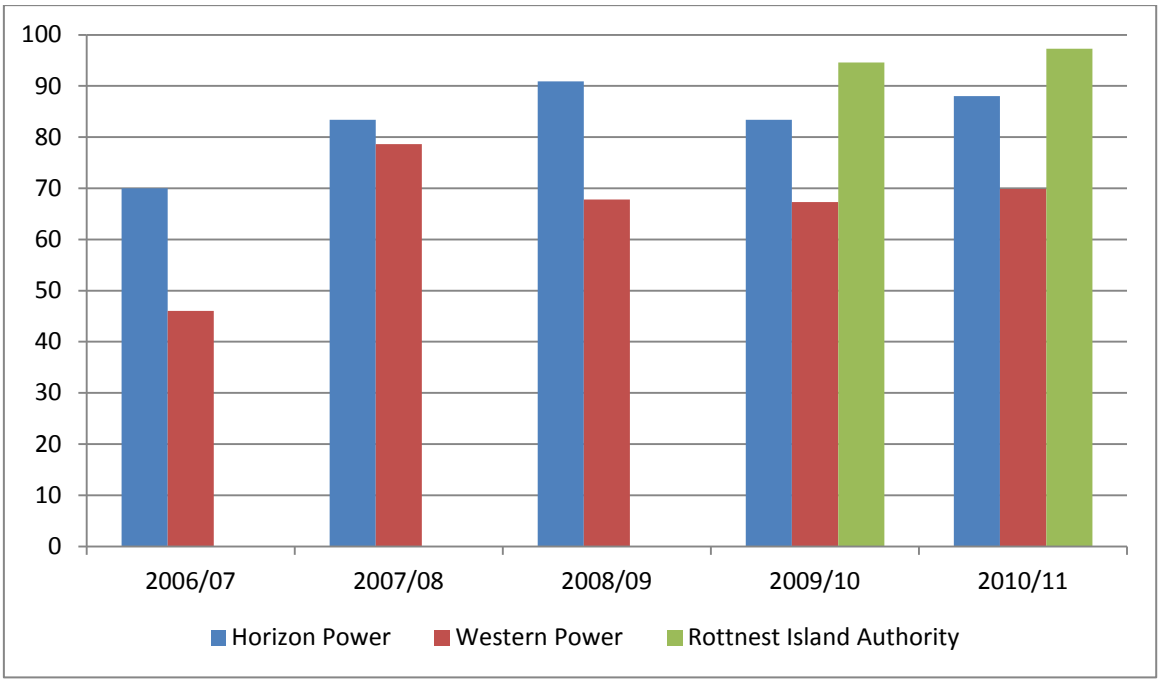


Figure 10: Percentage of electricity distributor calls answered within 30 seconds

Figure 11 details the average duration before a call is answered by the distributor call centres over the past four years. Customers calling the Western Power call centre have seen the average wait before their call is answered increase in each of the past three years, to a new high of 50 seconds in 2010/11. Both Horizon Power and Rottnest Island Authority recorded falls in their average time to answer calls to their call centres in 2010/11, although Horizon Power customers are still waiting longer for their calls to be answered than they did in the preceding years.

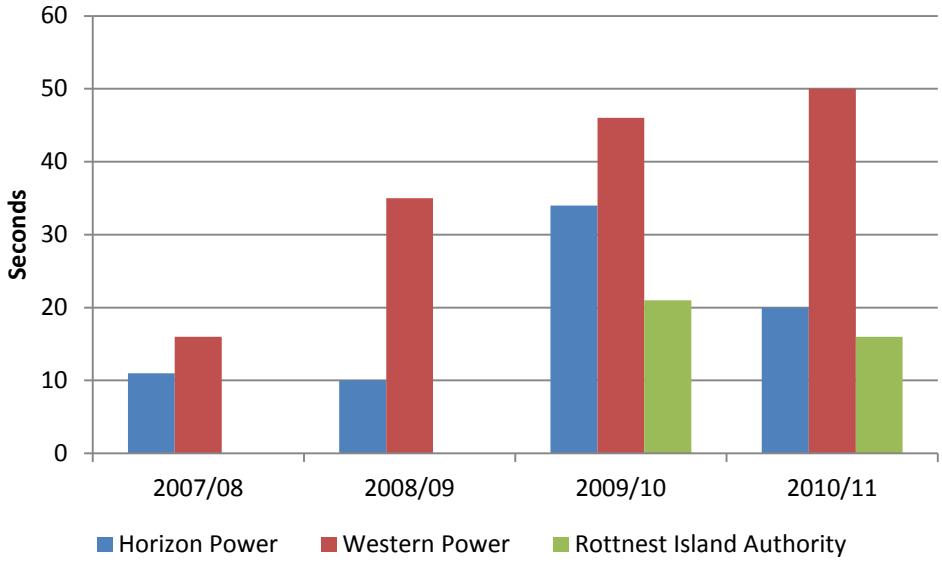


Figure 11: Average duration before a call is answered by electricity distributors

Figure 12 details the percentage of calls that are unanswered (the caller hangs up before the call is answered) by electricity distributor call centres. The data for the past two years presents a mixed picture, with Rottnest Island Authority reporting an increase, and Western Power reporting a decrease in abandoned calls, while Horizon Power's performance remained unchanged from the previous year.

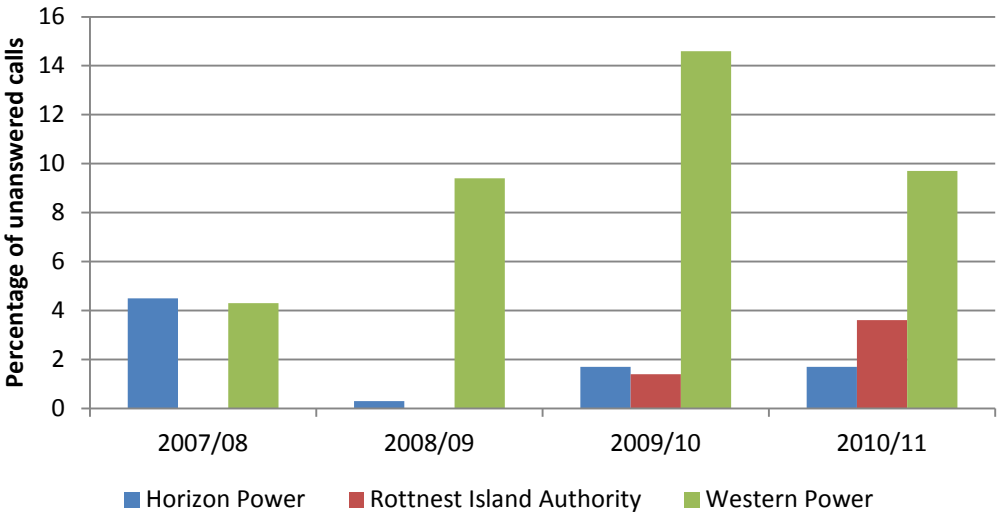


Figure 12: Percentage of calls that are unanswered by electricity distributors

Gas Distributor Call Centres

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

Table 21 details the volume of calls received by the ATCO and Wesfarmers call centres over the past four years. Compared to 2009/10, the total volume of calls increased by 7%, due to an increase in calls to the Wesfarmers call centre. The increase in the volume of call to the Wesfarmers call centre should be treated with caution because the call centre also handles calls for other parts of the Wesfarmers Kleenheat Gas business.

Table 21: Volume of calls to gas distributor call centres

	2007/08	2008/09	2009/10	2010/11
ATCO	n/a	59,802	41,132	37,391
Wesfarmers	179,119	147,202	172,080	190,764
State Total	**179,119**	**207,004**	**213,212**	**228,155**

Figure 13 details the percentage of calls responded to (answered by a customer service agent) within 30 seconds by gas distributor call centres.

Over the past three years, the percentage of calls answered within 30 seconds by the ATCO and Wesfarmers call centres has varied around an average of 89% and 84% respectively. The performance of the Wesfarmers call centre fell quite noticeably in 2010/11, following a much better than average performance in 2009/10.

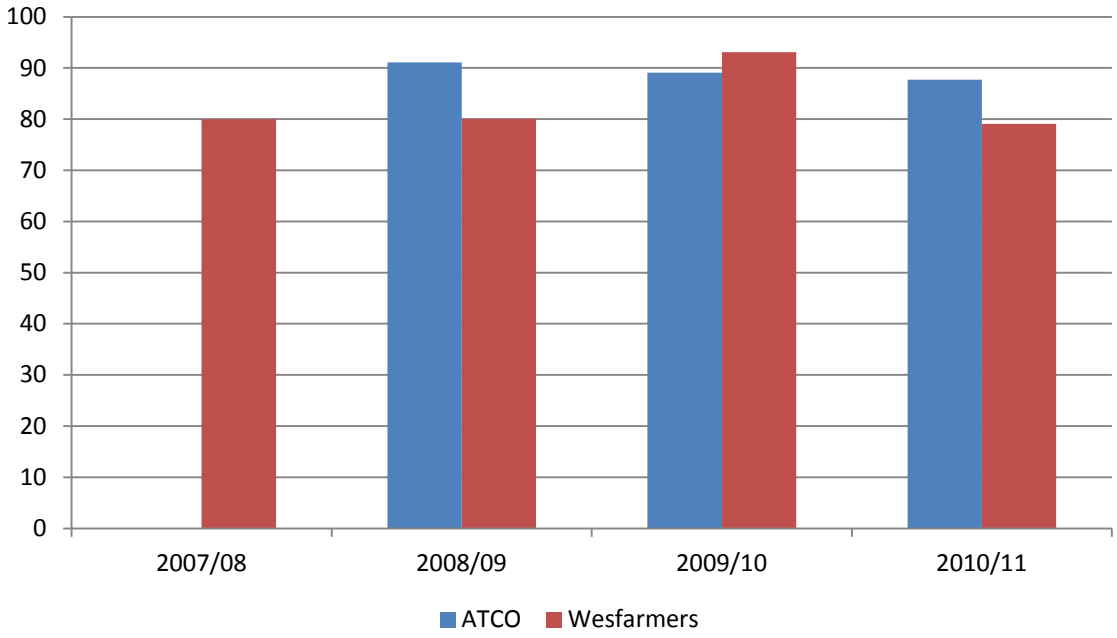


Figure 13: Percentage of gas distributor calls answered within 30 seconds

Figure 14 details the average duration before a call is answered by the distributor call centres over the past four years. Compared to 2009/10, customers calling the Wesfarmers call centre have seen the average wait before their call is answered increase by 61%, to 21 seconds. Conversely, callers to the ATCO call centre saw their average wait time fall by 41%, to 20 seconds over the same period, although it should be noted that the total volume of calls to the ATCO call centre were 9% lower in 2010/11.

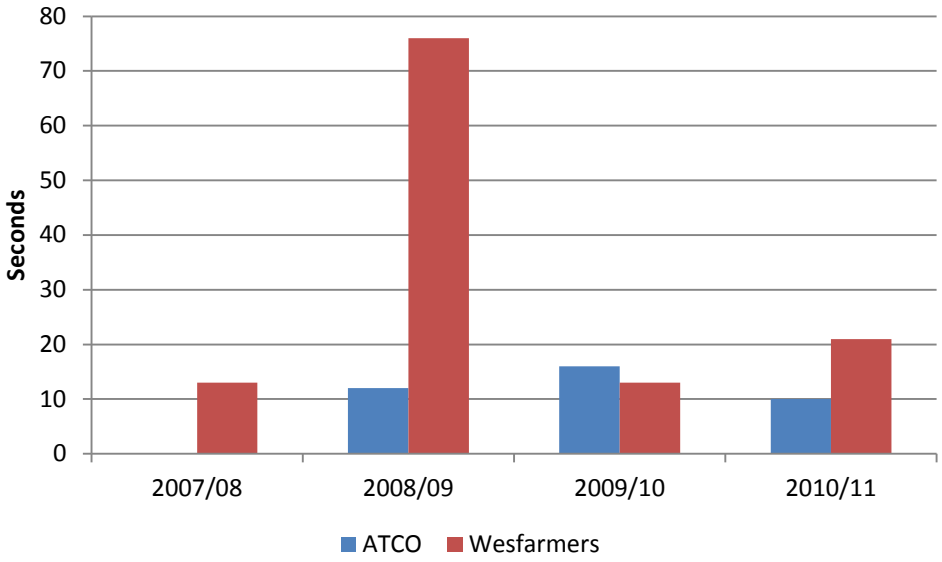


Figure 14: Average duration before a call is answered by gas distributors

Figure 15 details the percentage of calls that are unanswered (the caller hangs up before the call is answered) by gas distributor call centres. The data for the past three years show the level of calls unanswered by the ATCO call centre falling, while the level of unanswered calls by the Wesfarmers call centre has increased. This decline needs to be treated with caution because the call centre also handles calls for other Wesfarmers Kleenheat Gas businesses.

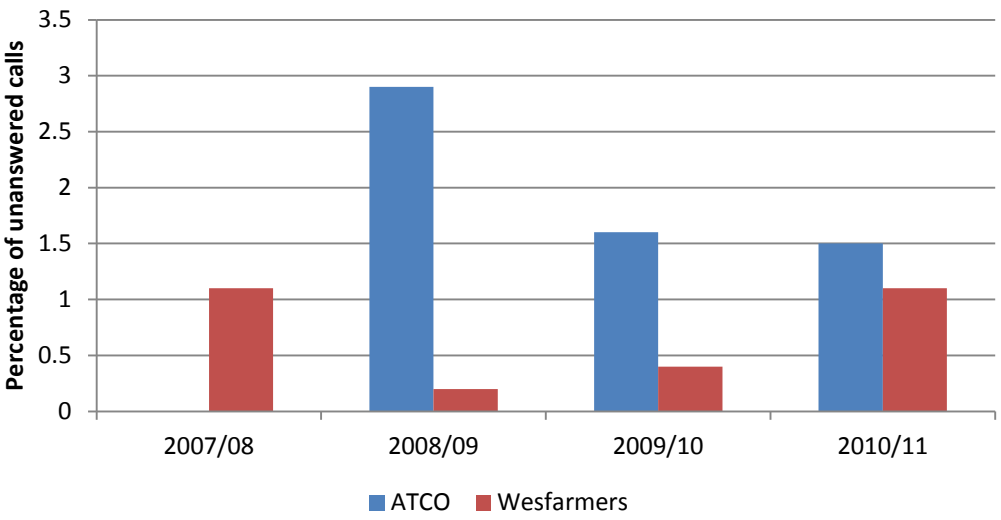


Figure 15: Percentage of calls that are unanswered by gas distributors

Service Standard Payments

Electricity Distributor Service Standard Payments

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

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

Part 3 of the NQ&R Code makes provision for service standard payments to 'eligible' small use customers[51] for:

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

Rottnest Island Authority did not make any service standard payments to customers in 2010/11, nor in any of the previous three years, so Table 22 provides details of payments made by Horizon Power and Western Power.

Compared to Western Power, Horizon Power has made relatively few service standard payments over the four years to 2010/11. Compared to 2009/10, Western Power made more payments for not providing 72 hours notice of planned power interruptions, but fewer payments for outages longer than 12 hours. In 2010/11, Horizon Power made substantially more payments for failing to give 72 hours notice of a planned interruption than in any of the three preceding years.

Table 22: Service standard payments made by electricity distributors

	2007/08	2008/09	2009/10	2010/11
Electricity Customer Code - clause 14.4				
Horizon Power	0	0	0	0
Western Power	1	4	0	1
NQ&R Code – section 18				
Horizon Power	1	2	1	0
Western Power	241	364	573	1,158
NQ&R Code – clause 19				
Horizon Power	27	31	71	589
Western Power	3,099	5,589	34,151	24,328

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

Gas Distributor Guaranteed Service Level Payments

ATCO (formerly WA Gas Networks) is subject to a guaranteed service level (**GSL**) payment scheme under the Access Arrangement for the Mid-West and South-West Gas Distribution Systems. GSL schemes are intended to provide incentives to service providers to ensure that the level of service delivered to individual end use consumers meets minimum standards. Where the service provider fails to deliver prescribed services within predetermined service levels, payments are made by the service provider to consumers by way of compensation.

This scheme provides for payments by ATCO to small gas users in circumstances of:

- late arrival for a gas fault or emergency appointment;
- late establishment of a gas service;
- more than four unplanned interruptions in a calendar year; and
- unplanned interruptions greater than 12 hours continuously.

ATCO reported a total of seven payments for the late establishment of a gas service, up from six payments in the previous year. No other GSL payments were made during 2010/11.

Appendix 1 - Gas Consumption and Unaccounted for Gas

Gas Consumption

The Gas Manual requires gas distributors to keep records of the amount of gas consumed by residential and non-residential customers and the peak gas demand on their distribution systems in the hour(s) of heaviest customer demand. Table 50 (Appendix 7) details gas consumption on each distributor's systems for the four years to 2010/11.

Table 23 compares gas consumption in 2010/11 with the previous year. During 2010/11, state-wide gas consumption decreased by 0.2%, comprising a 2.2% decrease in residential gas consumption and a 0.9% rise in non-residential gas consumption.

In 2010/11, ATCO accounted for 99.9% of residential and 99.8% of non-residential gas consumption. Examination of Table 23 shows that the overall changes in residential and non-residential gas consumption really reflect the consumption patterns of ATCO's customers.

There were relatively large changes in gas consumption on the smaller distribution systems operated by Esperance Power Station and Wesfarmers. Both distributors reported increases in residential gas consumption, by 5.8% and 22.9% respectively. Esperance Power Station's non-residential consumption increased by nearly a third and Wesfarmers consumption fell by a fifth.

Table 23: Change in gas consumption between 2009/10 and 2010/11

	Residential			Non-Residential		
Distributor	**2009/10**	**2010/11**	**Change (%)**	**2009/10**	**2010/11**	**Change (%)**
ATCO	10,806,658	10,563,707	-2.2	17,231,682	17,397,626	0.9
Esperance Power Station	2,893	3,060	5.8	19,303	25,152	30.3
Wesfarmers	5,100	6,268	22.9	315	250	-20.6
State Total	**10,814,651**	**10,573,035**	**-2.2**	**17,251,300**	**17,423,028**	**0.9**

Unaccounted for Gas

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

Table 24 details the level of UFG for the five years to 2010/11. In 2010/11, the state-wide level of UFG increased by 6.2%. This is the fourth successive year in which total UFG has increased.

Esperance Power Station has reported zero UFG for the past four years. This is not surprising given that their distribution network is only eight years old, and it is constructed using modern plastic piping.

Compared to 2009/10, both ATCO and Wesfarmers reported increases in the level of UFG, by 6.2% and 24.4% respectively.

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

Distributor	2006/07	2007/08	2008/09	2009/10	2010/11
ATCO	621,266	830,915	858,000	866,667	920,371
Esperance Power Station	50	0	0	0	0
Wesfarmers	804	415	344	931	1,158
State Total	**622,120**	**831,330**	**858,344**	**867,598**	**921,529**

Comparing Table 24 with Table 23 it can be seen that the state-wide total UFG represents 3.2% of the total gas entering the distribution systems. Individual distributor performance varies, with the level of UFG on the ATCO and Wesfarmers distribution systems representing 3.2% and 15.1%, respectively of the total gas entering their distribution systems.

The level of UFG on the ATCO distribution systems lies within the expected range given the construction and age of their distribution systems, whereas the level of UFG on the Wesfarmers distribution systems is higher than would be expected. However, it should be noted that there is the potential for higher levels of UFG on LPG distribution systems compared to natural gas systems due to metering errors, so it is possible that a proportion of the UFG is unrecorded gas supplied to customers rather than gas lost through leaks.

Appendix 2 - Leaks on Gas Distribution Systems

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

Table 25 details the number of repairs to low, medium and high pressure gas mains during the five years to 2010/11. Given the relative size of the ATCO gas distribution system in relation to the distribution systems operated by Esperance Power Station and Wesfarmers (Table 40), it is not surprising that ATCO accounts for nearly all of the mains leak repairs. Compared to 2009/10, ATCO reported a 34.6% decrease in the state-wide number of gas main leak repairs on their networks.

Table 25: Gas main leak repairs

	2006/07	2007/08	2008/09	2009/10	2010/11
ATCO	276	755[52]	706	916	600
Esperance Power Station	1	0	1	3	0
Wesfarmers	0	0	0	0	1
State Total	**277**	**755**	**707**	**919**	**601**

Table 26 details the number of leak repairs to property service connections during the four years to 2010/11. For the reasons specified above, ATCO accounts for nearly all of the repairs over the four year period. Compared to 2009/10, ATCO reported a 7.4% fall in the number of property service connection repairs carried out.

Table 26: Gas property service connection leak repairs

	2007/08	2008/09	2009/10	2010/11
ATCO	5,713	5,348	6,481	6,003
Esperance Power Station	2	1	0	1
Wesfarmers	0	0	0	0
State Total	**5,713**	**5,349**	**6,481**	**6,004**

Table 27 details the number of leak repairs to gas meters during the four years to 2010/11. ATCO was the only distributor to report repairing leaks to gas meters over the four year period. Over the past three years, the number of gas meter leak repairs by ATCO has remained relatively unchanged.

[52] From 2007/08, WA Gas Networks converted its leak detection systems from manual to automatic, which subsequently recorded several new categories of leaks.

Table 27: Gas meter leak repairs

	2007/08	2008/09	2009/10	2010/11
ATCO	787	1,006	1,079	1,008
Esperance Power Station	0	0	0	0
Wesfarmers	0	0	0	0
State Total	**787**	**1,006**	**1,079**	**1,008**

Appendix 3 - Street Lighting Repairs

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

- the total number of street lights they are responsible for the maintenance of in metropolitan[53] and regional areas; [54]
- the number of street lights reported faulty each month in metropolitan and regional areas;
- the number of occasions that they have failed to repair faulty street lights within:
  - 5 business days for the metropolitan area;
  - 9 business days for regional areas; and
- the average number of days to repair faulty street lights in metropolitan and regional areas.

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

Table 28 details the number of street lights in metropolitan and regional areas that are maintained by each distributor. Over the past four years the average annual growth of metropolitan and regional streetlights was 1.7% and 2.5% respectively. The streetlight population maintained by Horizon Power and Western Power has grown over time, which that for Rottnest Island Authority has remained unchanged, which reflects the limited amount of development on Rottnest Island.

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

	2007/08	2008/09	2009/10	2010/11
Metropolitan areas				
Horizon Power	4,344	4,636	5,017	5,293
Western Power	179,320	183,342	187,305	192,890
Total	**183,664**	**187,978**	**192,322**	**198,183**
Regional areas				
Horizon Power	8517	8,817	9,257	9,610
Rottnest Island Authority	190	190	190	190
Western Power	33,765	35,060	35,867	37,018
Total	**42,472**	**44,067**	**45,314**	**46,818**

Table 29 details the number of faulty street lights reported to the distributors over the past five years. .

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

[54]

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

Metropolitan	2006/07	2007/08	2008/09	2009/10	2010/11
Metropolitan areas					
Horizon Power	314	432	420	156	168
Western Power	21,560	27,554	40,508	39,978	35,912
Total	**21,874**	**27,986**	**40,928**	**40,134**	**36,080**
Regional areas					
Horizon Power	304	264	276	192	156
Rottnest Island Authority	13	30	48	24	36
Western Power	1,026	1,114	4,043	6,214	2,922
Regional Total	**1,343**	**1,408**	**4,367**	**6,430**	**3,114**

Figure 16 details the number of street light faults logged as a percentage of the total street light population maintained by each distributor in the metropolitan and regional areas. It can be seen that the proportion of faulty metropolitan street lights reported by Horizon Power and Western Power is higher than in the regional areas. It is not clear why this is the case, but it is possible that the detection rate for faulty street lights in regional areas is lower than in metropolitan areas due to their relatively isolated locations.

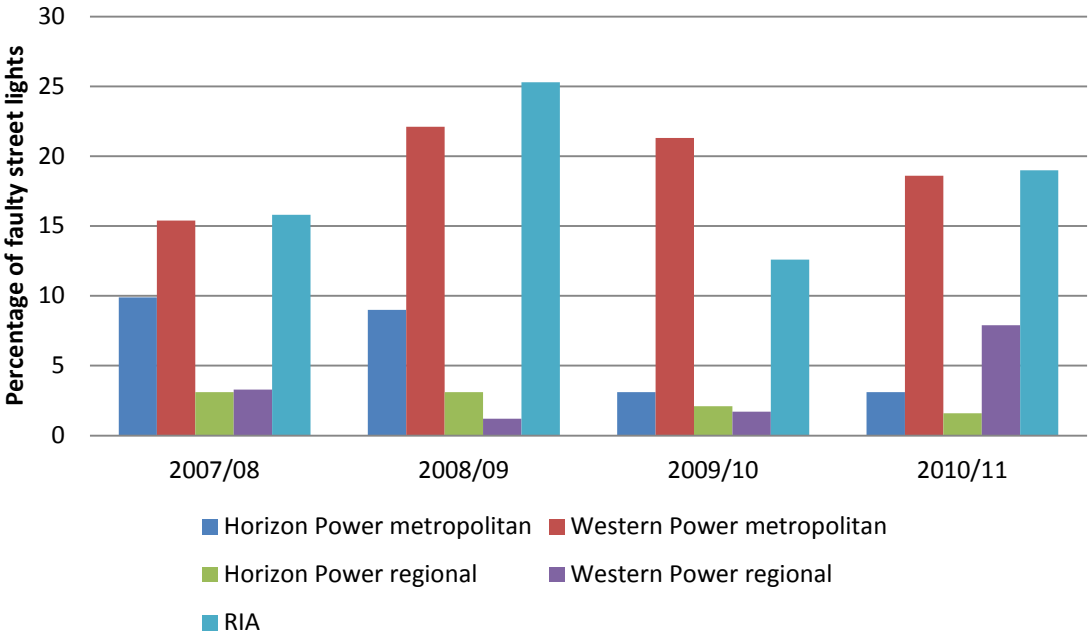


Figure 16: Percentage of faulty street lights by distributor and location

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

Over the five years, Western Power has significantly improved the timeliness of their metropolitan street light repairs; between 2005/06 and 2010/11, the proportion of repairs that took longer than five days has fallen from 35% to just over 3%. This contrasts with Horizon Power, where 28% of their repairs were outside the five day standard over the past two years.

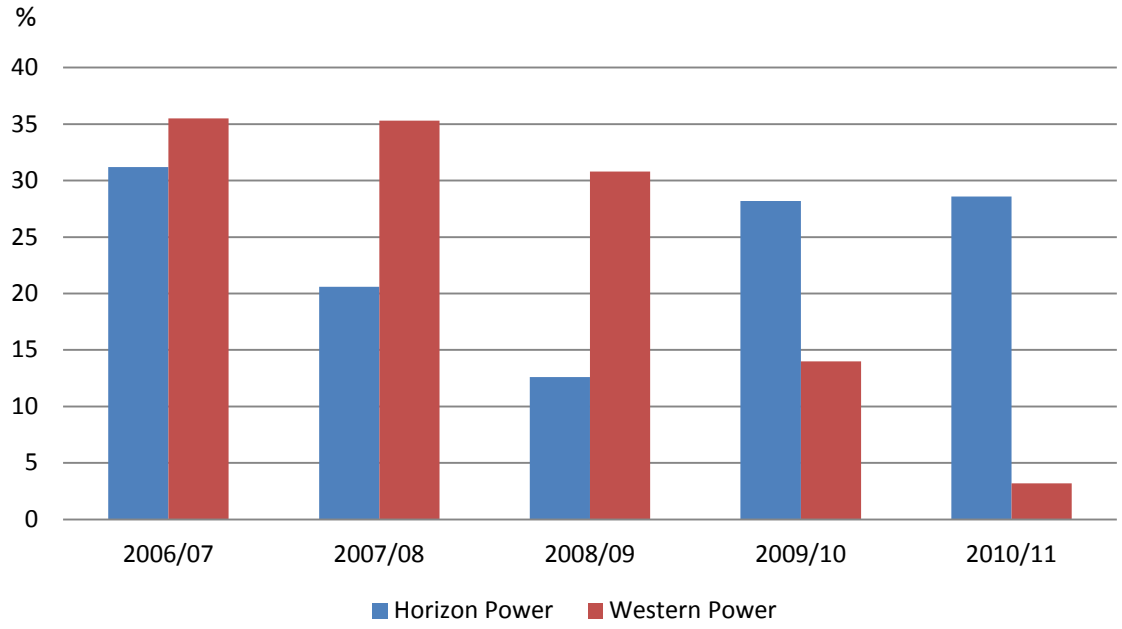


Figure 17: Percentage of faulty metropolitan street lights repaired after 5 days

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

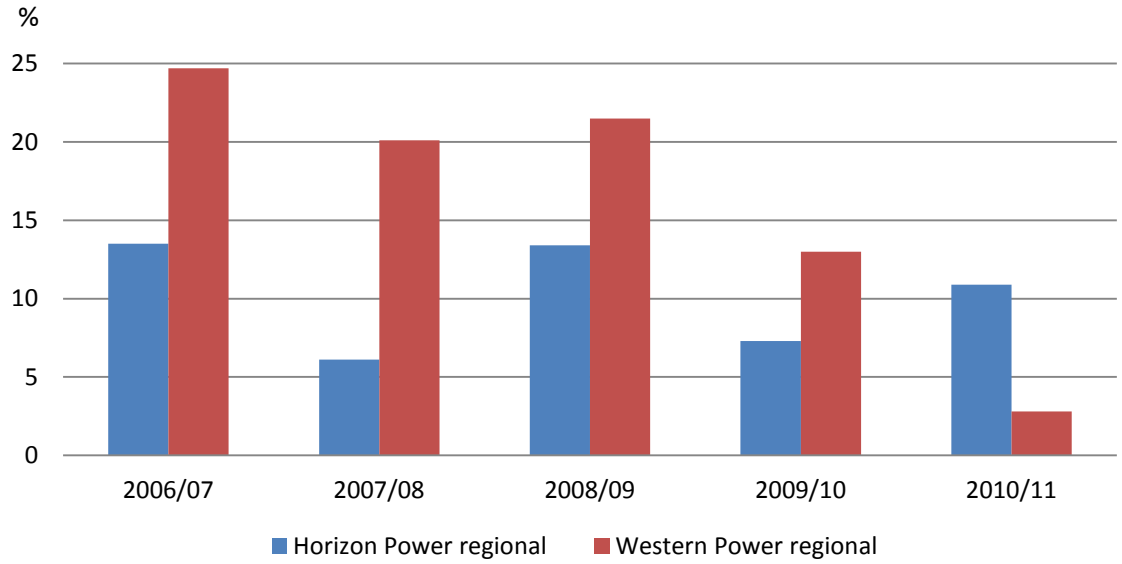


Figure 18: Percentage of faulty regional street lights repaired after 9 days

Over the five years, Western Power has improved the timeliness of their regional street light repairs; between 2005/06 and 2010/11, the proportion of repairs that took longer than nine days has fallen from 25% to 3%. Horizon Power's performance over the five years has been variable; between 6% and 13.5% of repairs have taken longer than nine 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;[55]

SAIDI

Table 30: Western Power SAIDI Performance – 2010/11

SAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	383	42	223	475	1232
Distribution Network (Planned)	79	3	70	88	121
Distribution Network (Unplanned)	276	32	135	361	1007
Normalised Distribution Network (Unplanned)	176	30	120	192	529

Table 31: Horizon Power SAIDI Performance – 2010/11

SAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	329	N/A	143	307	1400
Distribution Network (Planned)	61	N/A	13	34	711
Distribution Network (Unplanned)	200	N/A	110	197	598
Normalised Distribution Network (Unplanned)	164	N/A	93	147	677

[55] 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 – 2010/11

SAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	192	N/A	N/A	192	N/A
Distribution Network (Planned)	46	N/A	N/A	46	N/A
Distribution Network (Unplanned)	96	N/A	N/A	96	N/A
Normalised Distribution Network (Unplanned)	142	N/A	N/A	142	N/A

SAIFI

Table 33: Western Power SAIFI Performance – 2010/11

SAIFI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	2.58	0.37	1.97	3.07	5.43
Distribution Network (Planned)	0.30	0.01	0.25	0.33	0.59
Distribution Network (Unplanned)	1.91	0.24	1.36	2.39	4.33
Normalised Distribution Network (Unplanned)	1.76	0.23	1.31	2.11	3.86

Table 34: Horizon Power SAIFI Performance – 2010/11

SAIFI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	3.77	N/A	2.39	3.47	14.16
Distribution Network (Planned)	0.35	N/A	0.09	0.22	3.76
Distribution Network (Unplanned)	1.72	N/A	1.49	1.35	8.66
Normalised Distribution Network (Unplanned)	3.20	N/A	1.92	3.04	10.33

Table 35: Rottnest Island Authority SAIFI Performance – 2010/11

SAIFI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	5.00	N/A	N/A	5.00	N/A
Distribution Network (Planned)	0.00	N/A	N/A	0.00	N/A
Distribution Network (Unplanned)	5.00	N/A	N/A	5.00	N/A
Normalised Distribution Network (Unplanned)	5.00	N/A	N/A	5.00	N/A

CAIDI

Table 36: Western Power CAIDI Performance – 2010/11

CAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	148	112	113	155	227
Distribution Network (Planned)	259	263	274	265	206
Distribution Network (Unplanned)	145	133	99	151	232
Normalised Distribution Network (Unplanned)	100	128	91	91	137

Table 37: Horizon Power CAIDI Performance – 2010/11

CAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	87	N/A	60	88	99
Distribution Network (Planned)	173	N/A	145	154	189
Distribution Network (Unplanned)	116	N/A	74	1	69
Normalised Distribution Network (Unplanned)	51	N/A	48	48	66

Table 38: Rottnest Island Authority CAIDI Performance – 2010/11

CAIDI Measure	Total Network	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	27	N/A	N/A	27	N/A
Distribution Network (Planned)	326	N/A	N/A	326	N/A
Distribution Network (Unplanned)	9	N/A	N/A	9	N/A
Normalised Distribution Network (Unplanned)	27	N/A	N/A	27	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 (as at 30 June 2011)

Asset Type	Asset Sub-Type	Horizon Power	Rottnest Island Authority	Western Power
Number of metered supply points	CBD	N/A	N/R	6552
	Urban	8003	N/R	637020
	Short Rural	34595	N/R	288743
	Long Rural	583	N/R	91543
Feeder Length (km)	CBD	N/A	N/R	164.8
	Urban	101.0	N/R	17607.7
	Short Rural	2927.6	44.9	21004.5
	Long Rural	3545.1	N/R	50158.0
Number of Transformers	Sub-transmission	N/A	2	N/A
	Distribution	3,923	13	64,587
Total Capacity of Transformers (MVA)	Sub-transmission	N/A	2	N/A
	Distribution	623	3	8,153
Number of street lights		14,903	190	229,908
Number of Poles		56,808	50	751,725

Appendix 6 – Gas Distribution System Construction Information

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

Table 40: Gas distribution network construction information (as at 30 June 2011)

Asset Type	Asset Sub-Type	ATCO			Esperance Power Station			Wesfarmers		
		High Pressure	Medium Pressure	Low Pressure	High Pressure	Medium Pressure	Low Pressure	High Pressure	Medium Pressure	Low Pressure
Length of gas main (km) constructed from:	Cast Iron	0.0	0.0	36.4	0	0	0	0	0	0
	Unprotected Steel	0.0	80.0	130.9	0	0	0	0	0	0
	Protected Steel	758.4	14.4	0.0	0	0	0	0	0	0
	PVC	0.0	6010.5	3634.8	0	0	0		8.7	0
	Polyethylene	576.7	1678.7	45.3	0	35.2	0	0	42.1	0
	Other	0.2	50.0	32.9	0	0	0	0	0	0
Total length of distribution mains installed and in service (km)		1335.3	7833.6	3880.4	0	35.2	0	0	50.8	0
Number of service connections per km of gas mains			48.8			8.0			16.9	

Appendix 7 – Additional Electricity and Gas Distributor Performance Data

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

	Electricity						Gas				
	2006/07	2007/08	2008/09	2009/10	2010/11		2006/07	2007/08	2008/09	2009/10	2010/11
Horizon Power	36,542	37,580	39,577	41,143	43,181	ATCO	561,437	593,634	610,294	628,537	636,323
Rottnest Island Authority	98	99	191	83	83	Wesfarmers	636	791	831	808[56]	862
Western Power	935,393	955,551	942,381	1,023,341	1,043,364	Esperance Power Station	197	209	242	266	280
State Total	**972,033**	**993,230**	**982,149**	**1,064,567**	**1,086,628**	**State Total**	**562,270**	**594,634**	**611,367**	**629,589**	**637,427**

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

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

	Electricity						Gas				
	2006/07	2007/08	2008/09	2009/10	2010/11		2006/07	2007/08	2008/09	2009/10	2010/11
Horizon Power	853	1,749	1,793	1,764	2,157	ATCO	-	18,870	16,660	16,911	19,611
Rottnest Island Authority	6	1	2	0	0	Wesfarmers	-	73	40	42	54
Western Power	34,206	33,641	25,568	26,304	24,614	Esperance Power Station	-	16	33	24	14
State Total	**State Total**	**35,065**	**35,391**	**27,363**	**26,771**	**State Total**	**-**	**20,038**	**16,733**	**16,977**	**19,679**

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

	Number					Percentage of all new connections				
	2006/07	2007/08	2008/09	2009/10	2010/11	2006/07	2007/08	2008/09	2009/10	2010/11
Electricity										
Horizon Power	0	273	0	0	0	0.0	15.6	0.0	0.0	0.0
Western Power	6,995	6,325	1,771	957	885	20.4	18.8	6.9	3.6	3.6
RIA	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Gas										
ATCO	-	34	35	6	7	-	0.2	0.2	0.04	0.04
Wesfarmers	-	0	0	0	0	-	0.0	0.0	0.0	0.0
Esperance Power Station	-	0	0	0	0	-	0.0	0.0	0.0	0.0

Table 44: Number of small use electricity customer premises that have experienced interruptions of more than 12 hours continuously

Distributor	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Horizon Power	3,136	8,882	115	354	334	1,138
Rottnest Island Authority	0	0	0	0	0	0
Western Power	9,985	14,889	20,699	45,456	112,396	54,414
State Total	**13,121**	**23,771**	**20,814**	**45,810**	**112,730**	**55,552**

Table 45: 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					
	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Horizon Power	N/A	N/A	N/A	N/A	N/A	N/A	378	2,872	2,979	2,176	2,535	819
Rottnest Island Authority	N/A	N/A	N/A	N/A	N/A	N/A	0	98	0	0	0	0
Western Power	10,305	25,577	27,006	16,733	12,616	6,813	34	266	1,168	739	1,513	435
State Total	**10,305**	**25,577**	**27,006**	**16,733**	**12,616**	**6,813**	**412**	**3,236**	**4,147**	**2,915**	**4,048**	**1,254**

Table 46: Number of small use gas customers experiencing interruptions exceeding 12 hours continuously

Licensee	Customers with interruptions to supply >12 hours continuously				Customers with 5 or more supply interruptions			
	2007/08	2007/08	2007/08	2010/11	2007/08	2008/09	2009/10	2010/11
ATCO	0	0	0	0	0	0	0	0
Esperance Power Station	0	0	0	0	0	0	0	0
Wesfarmers	1	0	0	0	0	0	0	0
State Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Table 47: Complaints received by electricity distributors (Electricity Customer Code)

Electricity Distributor	2006/07	2007/08	2008/09	2009/10	2010/11
Total number of complaints					
Horizon Power	185	118	149	178	137
Western Power	1,938	2,491	2,845	2,695	1,738
Admin processes and customer service complaints					
Horizon Power	0	51	77	65	58
Western Power	266	263	253	181	101
Other Complaints					
Horizon Power	0	207	72	113	79
Western Power	1,672	2,228	2,592	793	1,637
Customer complaints concluded in 15 business days (% of all complaints)					
Horizon Power	NR	100%	100%	100%	100%
Western Power	NR	62%	65%	33%	26%

NR = Not rated

Table 48: Complaints received by gas distributors

Gas Distributor	2007/08	2008/09	2009/10	2010/11
ATCO	33	30	38	35
Wesfarmers	0	0	1	0
Esperance	0	0	0	0
State Total	**33**	**30**	**39**	**35**

Table 49: Call centre performance

Retailer	Total number of calls					Calls responded within 30 sec (%)				
	2006/07	2007/08	2008/09	2009/10	2010/11	2006/07	2007/08	2008/09	2009/10	2010/11
Horizon Power	111,919	85,356	94,018	89,200[57]	71,251	70.0	83.4	90.9	83.4	88.0
RIA	N/A	N/A	N/A	1,027	5,272	N/A	N/A	N/A	94.6	97.3
Western Power	66,351	360,114	373,761	538,903	495,626	46.0[58]	78.6	67.8	67.3	69.9
Electricity Total	**178,270**	**445,470**	**467,779**	**629,130**	**572,149**					
ATCO	N/A	N/A	59,802	41,132	37,391	N/A	N/A	91.1	89.1	87.7
Wesfarmers[59]	N/A	179,119	147,202	172,080	190,764	N/A	80.0	80.1	93.1	79.1
Gas Total	**N/A**	**179,119**	**207,004**	**213,212**	**228,155**					

	Average duration before a call is answered by an operator (seconds)					Unanswered calls (%)				
	2006/07	2007/08	2008/09	2009/10	2010/11	2006/07	2007/08	2008/09	2009/10	2010/11
Horizon Power	26.5	11	10	34	20	9.4	4.5	0.3	1.7	1.7
RIA	N/A	N/A	N/A	21	16	N/A	N/A	N/A	14.0	3.9
Western Power	166	16	35	46	50	0.1	4.3	9.4	14.6	9.7
ATCO	N/A	N/A	12	16	10	N/A	N/A	2.9	1.6	1.5
Wesfarmers	N/A	13	76	13	21	N/A	1.1	0.2	0.4	1.1

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

[58] The Western Power call centre measured calls answered within 15 seconds in 2006/07. The data for the following years is based on the standard 30 second answer period.

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

Table 50: Residential and non-residential Gas Consumption

	Residential Gas Consumption (GJ)				Non-residential Gas Consumption (GJ)			
	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11
ATCO	10,279,166	10,620,391[60]	10,806,658[61]	10,563,707	18,978,436	17,194,904[62]	17,231,682[63]	17,397,626
Esperance Power Station	2,474	2,644	2,893	3,060	17,783	19,038	19,303	25,152
Wesfarmers	19,935	22,875	5,100[64]	6,268	2,036	1,847	315[65]	250
State Total	**10,301,575**	**10,645,910**	**10,814,651**	**10,573,035**	**18,998,255**	**17,215,789**	**17,251,300**	**17,423,028**

Table 51: Unaccounted for gas (GJ)

	2006/07	2007/08	2008/09	2009/10	2010/11
WA Gas Networks	621,266	830,915	858,000	866,667	920,371
Esperance Power Station	50	0	0	0	0
Wesfarmers	804	415	344	931	1,158
State Total	**622,120**	**831,330**	**858,344**	**867,598**	**921,529**

[60] ATCO reported corrected figures for the periods 2008/09 and 2009/10.

[61] Ibid.

[62] Ibid.

[63] Ibid.

[64] For 2009/10, Wesfarmers has indicated that, in the licensee's opinion, Hopetoun is no longer considered to be captured by the requirements of the distribution licence. Additionally, while Leinster is considered to be captured by the distribution licence, its meters are no longer being read as gas is being bulk supplied and therefore its gas consumption is not included in either the 2009/10 residential or non-residential gas consumption figures.

[65] Ibid. Footnote 26.

Table 52: Percentage of unaccounted for gas on distribution systems

	Total gas consumption (GJ)				Unaccounted for gas (%)			
	2007/08	2008/09	2009/10	2010/11	2007/08	2008/09	2009/10	2010/11
ATCO	29,257,607	27,976,970	27,880,360	27,961,333	2.8	3.1	3.1	3.3
Wesfarmers	21,971	24,722	5,415	6,158	1.8	1.4	17.2	17.7
Esperance Power Station	20,257	21,682	22,196	28,212	0.0	0.0	0.0	0.0

Table 53: Number of gas main leak repairs

Licensee	Number of gas main leak repairs[66]					
	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
ATCO	217	276	755[67]	706	916	600
Esperance Power Station	N/A	1	0	1	3	0
Wesfarmers	0	0	0	0	0	1
State Total	**217**	**277**	**755**	**707**	**919**	**601**

[66] The data for 2004/05 to 2006/07 is based on the gas main breaks performance indicator in the old form distribution licence.

[67] From 2007/08, WA Gas Networks converted its leak detection systems from manual to automatic, which subsequently recorded several new categories of leaks.

Table 54: Number of street light faults logged (2008 Code of Conduct)

Metropolitan	Total number of streetlights					Street light faults logged				
	2006/07	2007/08	2008/09	2009/10	2010/11	2006/07	2007/08	2008/09	2009/10	2010/11
Horizon Power	NR	4,344	4,636	5,017	5,293	314	432	420	156	168
Western Power	NR	179,320	183,342	187,305	192,890	21,560	27,554	40,508	39,978	35,912
State total	**NR**	**183,664**	**187,978**	**192,322**	**198,183**	**21,874**	**27,986**	**40,928**	**40,134**	**36,080**

Regional	Total number of streetlights					Street light faults logged				
	2006/07	2007/08	2008/09	2009/10	2010/11	2006/07	2007/08	2008/09	2009/10	2010/11
Horizon Power	NR	8,517	8,817	9,257	9,610	304	264	276	192	156
RIA	NR	190	190	190	190	13	30	48	24	36
Western Power	NR	33,765	35,060	35,867	37,018	1,026	1,114	4,043	6,214	2,922
State total	**NR**	**42,472**	**44,067**	**45,314**	**46,818**	**1,343**	**1,408**	**4,367**	**6,430**	**3,114**

Table 55: Metropolitan and regional area street light faults that are repaired after the prescribed timeframes

Metropolitan	Number of faults fixed in > 5 days					%				
	2006/07	2007/08	2008/09	2009/10	2010/11	2006/07	2007/08	2008/09	2009/10	2010/11
Horizon Power	101	89	53	44	48	31.2	20.6	12.6	28.2	28.6
Western Power	7,654	9,738	12,494	5,598	1,134	35.5	35.3	30.8	14.0	3.2
State total	**7,755**	**9,827**	**12,547**	**5,642**	**1,182**					

Regional	Number of faults fixed in > 9 days					%				
	2006/07	2007/08	2008/09	2009/10	2010/11	2006/07	2007/08	2008/09	2009/10	2010/11
Horizon Power	41	16	37	14	17	13.5	6.1	13.4	7.3	10.9
RIA	0	0	3	0	0	0.0	0.0	6.3	0.0	0.0
Western Power	253	224	871	808	83	24.7	20.1	21.5	13.0	2.8
State total	**294**	**240**	**911**	**822**	**100**					

Appendix 8 – Licence Area Maps of the State

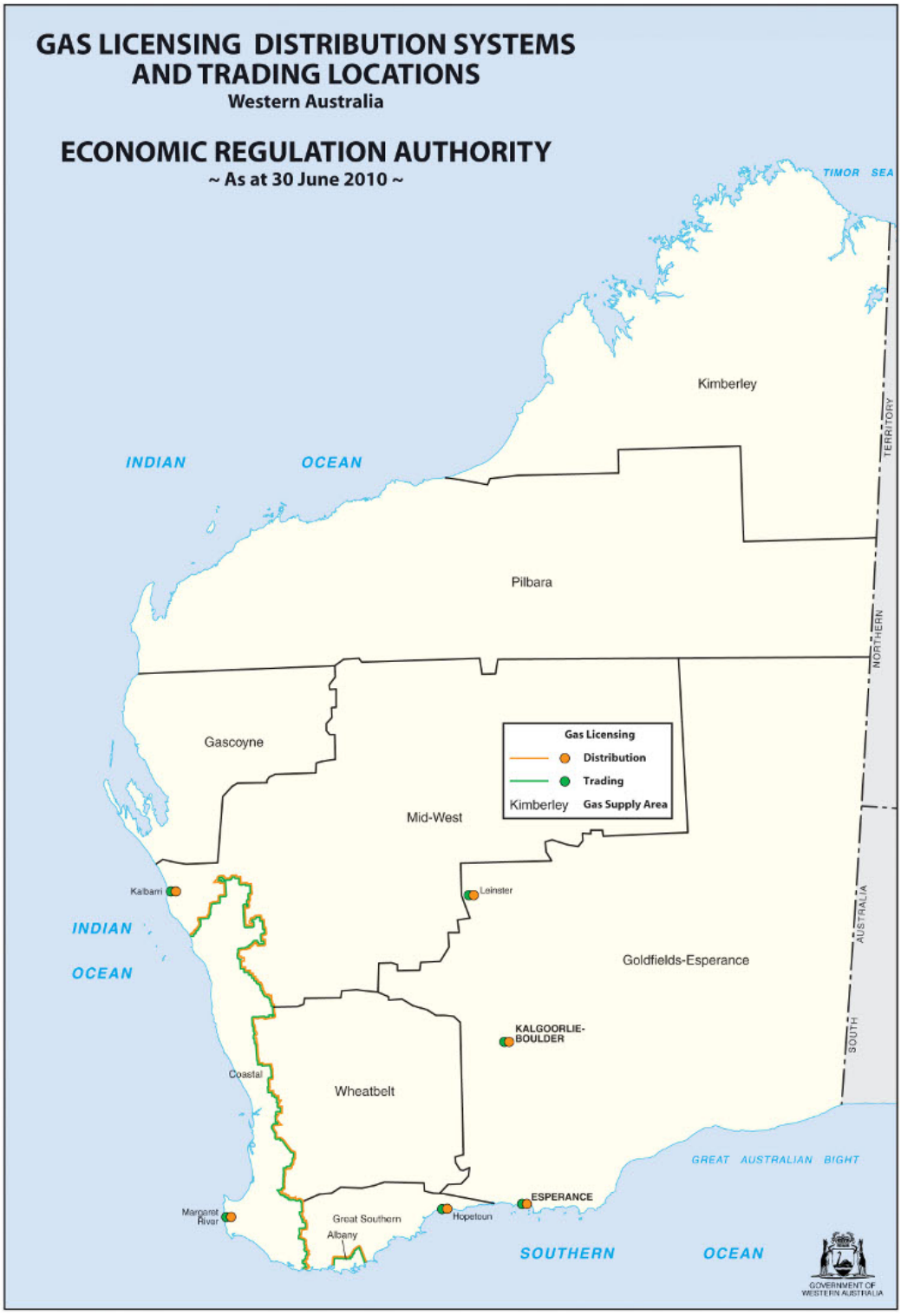


Figure 19: Gas supply areas in Western Australia

Figure 20: Electricity Licensing Areas in Western Australia