

# 2009/10 Annual Performance Report Electricity Distributors

March 2011

Economic Regulation Authority

 WESTERN AUSTRALIA

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## Purpose of the Report

The purpose of this report is to bring transparency and accountability to the performance of electricity distribution<sup>1</sup> businesses who supply small use customers<sup>2</sup>.

All 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 (EIA)*. The Authority has specified the performance information to be provided by electricity distribution licensees in the Electricity Compliance Reporting Manual (**Reporting Manual**) published by the Authority in April 2008<sup>3</sup>. The Reporting Manual combines the record keeping requirements of the *Electricity Industry (Network Quality and Reliability of Supply) Code 2005 (NQ&R Code)* and the *Code of Conduct for the Supply of Electricity to Small Use Customers 2008 (2008 Code of Conduct)*. This report focuses on the performance data provided by electricity distributors in accordance with the performance reporting obligations set out in the Reporting Manual.

The report focuses on performance in the following areas:

**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.

**Network Reliability:** information about the frequency and duration of supply interruptions on the distribution network.

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

**Customer Service:** information about customer satisfaction with the service provided by the distributor as measured by level of complaints and customer contact centre responsiveness.

**Compensation Payments:** information about the number of compensation payments made by distributors for failing to meet the service standards prescribed in the 2008 Code of Conduct and the NQ&R Code.

## Electricity Distribution Market Structure

The EIA includes provisions for the licensing of electricity supply. Part 2 of the EIA sets out the provisions pertaining to the licensing scheme for electricity service providers. The EIA prescribes five classes of electricity licence:

- a) Distribution – construct and operate electricity distribution networks.
- b) Generation – construct and operate electricity generation works.
- c) Retail – sell electricity to customers.

<sup>1</sup> Including Integrated Regional licensees who distribute electricity to small use customers.

<sup>2</sup> Small use customers consume less than 160MWh of electricity per annum.

<sup>3</sup> The Reporting Manual has been updated and a new version was published on the Authority's website on 1 July 2010, however, the new version is not applicable for the 2009/2010 Performance Report.

- d) Transmission – construct and operate electricity transmission networks.
- e) Integrated Regional – one or more of the activities detailed in (a) to (d) above.

In order to facilitate greater scope for competition in the Western Australian electricity market, the Government restructured the former Western Power Corporation into four new statutory Corporations in April 2006:

- Electricity Networks Corporation (t/a Western Power): operates transmission and distribution networks in the South West Interconnected System<sup>4</sup> (**SWIS**).
- Electricity Retail Corporation (t/a Synergy): retails electricity within the SWIS.
- Regional Power Corporation (t/a Horizon Power): operates a vertically integrated electricity business that operates in areas of the State outside the SWIS.
- Electricity Generation Corporation (t/a Verve Energy): operates power stations in the SWIS.

Figure 1 details the 40 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 2010.<sup>5</sup> Western Power has a licence to operate the largest single distribution network in the State, known as the South West Interconnected Network (**SWIN**), which lies within the SWIS. Horizon Power has an integrated regional licence to operate the North West Interconnected System (**NWIS**)<sup>6</sup> and 33 smaller, isolated distribution networks in regional areas of the State. The Rottnest Island Authority (**RIA**) operates a small distribution network on Rottnest Island and there are 4 private companies<sup>7</sup> who operate distribution networks in the Midwest-Goldfields area.

Western Power is the monopoly distribution network provider to small use customers within the SWIS. Horizon Power is the monopoly distribution network provider to small use customers in areas of the State outside the SWIS, other than Rottnest Island whose distribution network is operated by the RIA.

Western Power supplies the majority of small use customers in the State, with just under 985,000 customer connections (approximately 96% of the State total) and close to 87,700km of distribution lines. Horizon Power operates the second largest distribution network with close to 42,500 customer connections and approximately 8,000km of distribution lines. The RIA distribution network comprises 83 customer connections and just under 45km of distribution lines.

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<sup>4</sup> South West Interconnected System, which includes the coastal area from Kalbarri to Bremer Bay and the Goldfields.

<sup>5</sup> Details of electricity licenses can be found on the Authority's website:  
[http://www.era.wa.gov.au/2/245/51/licence\\_holders.pm](http://www.era.wa.gov.au/2/245/51/licence_holders.pm)

<sup>6</sup> The interconnected system located in the Pilbara region of the State that is supplied by generation plants in Dampier, Port Hedland and Cape Lambert

<sup>7</sup> Because these networks do not supply small use customers, their performance is not covered by this report.



Figure 1: Electricity Licensing Areas in Western Australia



The *Electricity Networks Access Code 2004* requires Western Power to provide third parties access to its transmission and distribution network through an Access Arrangement.<sup>8</sup> The Access Arrangement, which is reviewed at least every five years, sets out a number of reference services that may be purchased from Western Power by a third party. The majority of the reference services relate to the distribution network. Reference services come with minimum service standards, which are measured and subject to reporting by the Authority on an annual basis. There is no regulatory framework in place to provide third party access to the Horizon Power and RIA distribution networks at this time.

## Review of the Code of Conduct

The Electricity Code Consultative Committee (**ECCC**) completed the inaugural review of the 2004 Code of Conduct in September 2007. As required by section 88 of the EIA, the ECCC submitted a report to the Authority for its consideration. The Authority approved the final report of the ECCC, including an amended Code, in October 2007 and published the 2008 Code of Conduct in January 2008.

The electricity distribution indicators in Part 13 (Record Keeping) of the 2008 Code of Conduct have been aligned with the 2002 SCORRRR Framework.<sup>9</sup> However, the 2008 Code of Conduct retained some indicators that are not included in the 2002 SCORRRR Framework, such as compensation payments, that are specific to the Western Australian distribution market.

The ECCC has, as required by the legislation, undertaken a further review of the Code of Conduct. The ECCC released a draft review report for public comment in February 2009. The final review report was provided to the Authority in August 2009. After considering the review report, the Authority published its response in September 2009. The Authority accepted all except one of the ECCC recommendations, related to service standard payments for street light repairs, and proposed further amendments in relation to wrongful disconnections. The Authority referred these matters back to the ECCC for advice. In October 2009, the ECCC invited public comments on the amendments to the 2008 Code of Conduct proposed by the Authority.

On 29 January 2010, the Authority announced that it will be making a new Code of Conduct (**2010 Code of Conduct**). The 2010 Code of Conduct includes a number of amendments resulting from the Authority's consideration of the final review report provided by the ECCC. The 2010 Code of Conduct commenced operation on 1 July 2010.

## Review of the Network Quality and Reliability Code

The NQ&R Code was amended in September 2007. The amendment removed the requirement for a distributor or transmitter to prepare an annual network quality and reliability report, and an audit report under section 26 of the NQ&R Code, if they did not supply small use customers at any time during the year ending 30 June.

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<sup>8</sup> Details of the Access Arrangement can be found on the Authority's website:  
<http://www.era.wa.gov.au/1/264/48/electricity.pm>

<sup>9</sup> National Regulatory Reporting for Electricity Distribution and Retailing Businesses, Utility Regulators Forum Steering Committee on National Regulatory Reporting Requirement, March 2002

The intention of the NQ&R Code amendment is to exclude distributors who do not supply small use customers from the performance reporting regime. Consistent with this approach, the Authority no longer requires distributors who are exempt from reporting under the NQ&R Code to provide annual reports in accordance with the performance reporting framework in the Reporting Manual.

## Updated Electricity Compliance Reporting Manual

The Authority published a Reporting Manual in April 2008. The Reporting Manual includes details of the reports that electricity licensees must provide to the Authority and the timing of these reports. The performance reporting obligations in the Reporting Manual were updated to align with the record keeping obligations in Part 13 of the 2008 Code of Conduct.

The Reporting Manual requires distributors to provide to the Authority annual performance reports by 20 September each year. The Authority has published MS Excel Distribution Datasheets and an Electricity Distribution Licence Performance Reporting Handbook<sup>10</sup> to assist distributors with the reporting process.

The Reporting Manual has been updated to incorporate the compliance and performance reporting obligations in the 2010 Code of Conduct. The Authority published the amended Reporting Manual on 1 July 2010 (**2010 Manual**). It should be noted that the performance data used to prepare this report is based on the Reporting Manual published in April 2008. The first annual report based on the 2010 Manual will cover data provided by distributors for the year ending 30 June 2011.

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<sup>10</sup> Electricity Distribution Licence Performance Reporting Handbook which can be found on the Authority's website: [http://www.era.wa.gov.au/2/281/51/regulatory\\_guid/pm](http://www.era.wa.gov.au/2/281/51/regulatory_guid/pm)

## Highlights

This is the fifth annual report published by the Authority that examines the performance of electricity distributors who supply small use customers in Western Australia. However, due to significant changes to the distributor performance reporting framework that occurred during 2007, this report only covers the past four years in order to preserve data integrity and comparability for performance measures that have been impacted by the changes.

### Customer Connections

During 2009/10, the total number of small use customer connections on distribution networks increased by 4.5% to 1,026,226 connections. This is the first time that the number of connections has exceeded one million.

Western Power, who operates the SWIN, is the largest distributor with 985,000 connections, which represents 96.0% of the total connections in the State. Horizon Power, who operates a number of smaller distribution networks outside the SWIN, had 42,474 connections, or 4.0% of the total connections in the State. RIA operates a small distribution network on Rottnest Island, which has a total of 83 connections.

During 2009/10, the total number of new customer connections established by the three distributors increased by 2.6%, to 28,068 connections, driven by a 3% increase in new connections by Western Power. There was a substantial reduction in the number of connections not established within the prescribed time frames. Both Horizon Power and RIA reported zero late connections, and Western Power reported a 46% reduction in the number of late connections.

### Network Reliability

#### *Interruptions to Supply*

During 2009/10, the total number of customer premises that experienced an interruption longer than 12 hours was 112,730, an increase of 146% compared to 2008/09. Western Power reported a 147% increase (to 112,396 premises), a large proportion of which was caused by a major storm event in Perth on 22 March 2010.

During 2009/10, 25% fewer customers in CBD and Urban areas experienced more than 9 supply interruptions and 39% more customers in other areas of the State experienced more than 16 supply interruptions compared to 2008/09.

#### *NQ&R Code Reliability Measures*

The NQ&R Code prescribes standards for the total length of interruptions to customer premises of 30 minutes in the Perth CBD, 160 minutes in Urban areas and 290 minutes in other areas of the State.<sup>11</sup> During 2009/10, the reliability of both the Horizon Power and Western Power networks did not meet the prescribed standards.

In the Perth CBD and Urban areas, which are exclusively supplied by Western Power, the standards were exceeded by 23.3% and 108% respectively. In other areas of the State, Horizon Power exceeded the standard by 40.7% (down from 54.5% in 2008/09), Western

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<sup>11</sup> This standard is calculated by taking the average total length of interruptions of supply during each year of a four year period, and then taking the average of the 4 annual figures.

Power exceeded the standard by 134% (up from 103% in 2008/09) and RIA met the standard with an average interruption duration of 87 minutes.

### *2002 SCONRRR Framework Reliability Measures*

The 2002 SCONRRR Framework measures the average duration of interruptions to customer supply using SAIDI<sup>12</sup> for each class of distribution feeder<sup>13</sup> in the network and an overall weighted average for the whole distribution network. The data is normalised to remove interruptions that are caused by factors that are beyond the reasonable control of the distributor. In 2009/10 the Authority has changed the normalisation method used by distributors to incorporate the Major Event Day method in standard IEEE1366:2003.

Compared to 2008/09, all three distributors reported lower SAIDI values for each class of feeder except RIA (Short Rural feeders up 27%) and Western Power (Long Rural feeders up 12%).

Between 2008/09 and 2009/10, RIA reported a significant increase in the whole of network SAIDI (up 27%) while both Horizon Power and Western Power reported decreases, by 32% and 3.6% respectively.

### **Street Lighting**

Compared to 2008/09, the number of faulty metropolitan street lights reported to distributors fell by 1.9% and the number of faulty regional street lights reported to distributors fell by 47%.

The proportion of metropolitan faults that were not repaired within 5 days improved from 30.7% in 2008/09 to 14.1% in 2009/10. Similarly, the proportion of regional faults that were not repaired within 9 days improved from 20.9% in 2008/09 to 12.8% in 2009/10.

### **Complaints**

The 2008 Code of Conduct requires distributors to record complaints, other than quality and reliability complaints. Complaints regarding supply quality and reliability are captured under the reporting obligations in the NQ&R Code.

Between 2008/09 and 2009/10, Horizon Power reported a 19.5% increase, and Western Power reported a 5.3% decrease, in the number of customer complaints related to matters covered by the 2008 Code of Conduct. The majority of the complaints were related to "other" issues, which includes meter reading, privacy considerations, health and safety issues, and any other matter not falling into the other complaint categories.

Between 2008/09 and 2009/10, the total number of supply quality and reliability complaints received by distributors increased by 23.5%. Approximately 67% of these complaints related to matters that were not covered by the specific categories defined in the 2002 SCONRRR Framework. Horizon Power attributed almost 48% of its quality of service (QoS) complaints to network equipment failure, which contrasts with Western Power who attributed just under 7% of its complaints to equipment failure. Western Power reported that it was not able to identify the problem for just over half of the QoS complaints it received.

<sup>12</sup> System Average Interruption Duration Index, which is defined in standard IEEE 1366-2003. Measured as minutes of interruption per annum.

<sup>13</sup> There are 4 classes of feeder: CBD, urban, short rural and long rural.

## **Service Standard Payments**

The number of service standard payments made by Western Power for failure to give the required notice of a planned interruption to supply increased by 57% compared to 2008/09. Over the past five years the number of payments made has increased from 30, in 2005/06, to 573 in 2009/10.

During 2009/10, Horizon Power reported a 129% increase (to 71 payments) and Western Power a 511% increase (to 34,151 payments) in the number of payments for supply interruptions greater than 12 hours. The increase reported by Western Power is mostly due to claims arising from the storm event in Perth on 22 March 2010.

## **Call Centre Performance**

All three distributors operated call centres during 2009/10<sup>14</sup> that handled a total of 629,130 calls.

Between 2008/09 and 2009/10, the call centre performance for both Horizon Power and Western Power deteriorated. Horizon Power reported a decrease in the proportion of calls answered within 30 seconds from 90.9% to 83.4% and an increase in the proportion of unanswered calls from 0.3% to 1.74%. Western Power reported a decrease in the proportion of calls answered within 30 seconds from 67.8% to 67.3% and an increase the proportion of unanswered calls from 9.4% to 14.6%.

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<sup>14</sup> This is the first year that RIA has operated a call centre.

# **DISTRIBUTOR PERFORMANCE**

## Customer Connections

The *Electricity Industry (Obligation to Connect) Regulations 2005 (Connection Regulations)* prescribe the conditions for, and the time frames associated with, establishing a connection to the distribution network for a small use customer. In general terms the time frames are:

- 20 business days for a new connection to the distribution network;<sup>15</sup>
- between 1 and 2 business days for an existing connection to be energised in the metropolitan area; and
- between 5 and 6 business days for an existing connection to be energised outside the metropolitan area.

Table 1 shows that, compared to 2008/09, the number of small use customer connections increased by 4.5%, exceeding one million connections for the first time. Western Power accounted for 96.0% of total connections, followed by Horizon Power (4.0%) and RIA (< 0.01%).

Western Power, who operates the SWIN, recorded a 4.5% increase in the number of connections compared to 2008/09. Horizon Power, who operate the NWIS and 33 other isolated systems across regional areas, recorded a 4.0% increase in connections over the same period. RIA recorded a 56.5% decrease in connections compared to 2008/09.

RIA commented that:

It appears last year's [2008/09] figures included all connections, not just small use customers.

**Table 1: Total small use customer connections**

Distributor	2006/07	2007/08	2008/09	2009/10
Horizon Power	36,542	37,580	39,577	41,143
Rottnest Island Authority	98	99	191	83
Western Power	935,393	955,551	942,381	985,000
<b>State Total</b>	<b>972,033</b>	<b>993,230</b>	<b>982,149</b>	<b>1,026,226</b>

Table 2 shows that the number of new connections established increased by 2.6% compared to 2008/09. Western Power recorded a 2.9% increase, and Horizon Power reported a 1.6% decrease, in new connections over this time.

**Table 2: Establishment of new connections**

Distributor	Number of connections established
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<sup>15</sup> 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.



	2005/06	2006/07	2007/08	2008/09	2009/10
Horizon Power	3,496	853	1,749	1,793	1,764
Rottnest Island Authority	1	6	1	2	0
Western Power	18,786	34,206	33,641	25,568	26,304

Table 3 provides details of the number of new connections that were not established within the time frame prescribed in the Connection Regulations, for the five years to 30 June 2010.

In 2009/10, Western Power continued the downward trend in the percentage of connections not established within the prescribed time frames, with a 46% reduction compared to 2008/09.

Horizon Power has reported a zero value for connections not established within the prescribed time frames for a second consecutive year.

**Table 3: Number of connections not established within the prescribed time frames**

Distributor	2005/06		2006/07		2007/08		2008/09		2009/10	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Horizon Power	0	0.0	0	0.0	273	15.6	0	0.0	0	0.0
Rottnest Island Authority	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Western Power	3,931	20.9	6,995	20.4	6,325	18.8	1,771	6.9	957	3.6

## Distribution Network 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<sup>16</sup> 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.

Table 4 details the number of customer premises that have experienced interruptions of more than 12 hours continuously. Compared to 2008/09, Western Power recorded an increase of 147.3% in the number of premises, whilst Horizon Power recorded a decrease of 5.6%. It can be seen that Horizon Power's performance has improved over the past five years. However, Western Power's performance has deteriorated significantly over the same period, with the 2009/10 level of interruptions being 11.3 times greater than that recorded in 2005/06.

Western Power commented that:

The increase in customer interruptions over the 5 year period was predominantly due to events beyond Western Power's control such as adverse weather conditions and bushfire events. It should be noted that in 2005/06, no significant environmental events occurred. Whereas, in 2008/09 there were five days of significant storm activity, the highest number over the four years leading up to that year.

In 2009/10, approximately 80% (90,000 out of 112,396) of small use customers experienced extended outages as a result of the 22-23 March 2010 storm, where lightning and strong winds (up to and above 100kph) caused extensive damage to the network, resulting in outages to approximately 250,000 customers.

The West Australian Premier Colin Barnett designated the event a natural disaster, and the Insurance Council of Australia declared the storm an insurance catastrophe. Equipment failure on the distribution network during the days immediately following the storm also contributed to extended outages.

**Table 4: Number of premises of small use customers that have experienced interruptions of more than 12 hours continuously**

Distributor	2005/06	2006/07	2007/08	2008/09	2009/10
Horizon Power	3,136	8,882	115	354	334
Rottnest Island Authority	0	0	0	0	0
Western Power	9,985	14,889	20,699	45,456	112,396
<b>State Total</b>	<b>13,121</b>	<b>23,771</b>	<b>20,814</b>	<b>45,810</b>	<b>112,730</b>

Table 5 provides details of multiple interruptions to customer premises in CBD and Urban areas, which are exclusively supplied by Western Power. Compared to 2008/09, the

<sup>16</sup> The NQ&R Code defines urban areas as being the Perth metropolitan area (excluding the CBD), Albany, Bunbury, Geraldton, Kalgoorlie and Mandurah.

number of customer premises that have experienced more than 9 interruptions to supply fell by 24.6%.

**Table 5: Multiple interruptions to customer premises in the Perth CBD and Urban areas**

Distributor	Customers who have experienced more than 9 interruptions to supply				
	2005/06	2006/07	2007/08	2008/09	2009/10
Western Power	10,305	25,577	27,006	16,733	12,616

Table 6 provides details of multiple interruptions to customer premises in all other areas of the State. Compared to 2008/09, the number of premises that have experienced more than 16 interruptions to supply has increased by 16.5% for Horizon Power and by 104.7% for Western Power.

**Table 6: Multiple interruptions to customer premises in all other areas of the State**

Distributor	Customer premises that have experienced more than 16 interruptions to supply				
	2005/06	2006/07	2007/08	2008/09	2009/10
Horizon Power	378	2,872	2,979	2,176	2,535
Rottnest Island Authority	0	98	0	0	0
Western Power	34	266	1,168	739	1,513

Horizon Power commented that they:

Note the increase this year but wishes to highlight the significant amount of work being carried out on the rural networks to ensure the safety and reliability of these networks. The return on these works are expected in future years.

Western Power commented that:

The increase in the number of multiple interruptions to customer premises in all other areas of the State was predominantly due to lightning activity and emergency outages to remove hazards in rural areas.

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

Schedule 1<sup>17</sup> of the NQ&R Code requires distributors to report on the following measures of system reliability for each discrete area<sup>18</sup> 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**),<sup>19</sup> 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.

Section 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 a four year period and it is applied to the calculation of average length and average frequency of interruptions.

Table 7 sets out 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.

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<sup>17</sup> Sections 11 and 13 of Schedule 1 to the NQ&R Code deal with the reporting of network reliability.

<sup>18</sup> The NQ&R Code defines 3 discrete areas: Perth CBD, Urban and all other areas of the State. Distributors are also required to report on the individual performance of each isolated system.

<sup>19</sup> 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 7: Standard for average total length of interruptions to customer premises (NQ&R Code) 2009/10**

Discrete area of the state	Average total length of interruptions (minutes per annum)
The Perth CBD <sup>20</sup>	30
Urban areas other than the Perth CBD	160
Any other area of the State	290

### *Perth CBD Network Reliability*

Western Power is the only distributor that supplies customers in the Perth CBD. Western Power commented that:

Western Power's network performance in the Perth CBD improved for the 12 months ending 30 June 2010, where the average total length of interruptions for that time period was 11 minutes.

Table 8 compares the average interruption data for the four years to 30 June 2009, with the four years to 30 June 2010. Comparing Western Power commented that:

Western Power's network performance in the Perth CBD improved for the 12 months ending 30 June 2010, where the average total length of interruptions for that time period was 11 minutes.

Table 8 with Table 7 shows that the average total length of interruptions for the four years to 30 June 2010 remained unchanged and exceeds the maximum prescribed in the NQ&R Code by 7 minutes.

Western Power commented that:

Western Power's network performance in the Perth CBD improved for the 12 months ending 30 June 2010, where the average total length of interruptions for that time period was 11 minutes.

**Table 8: Average total length of interruptions to customer premises - Perth CBD (NQ&R Code)**

Distributor	4 years ending 30 June 2009	4 years ending 30 June 2010
Western Power	37 minutes	37 minutes

Table 9 shows that the average frequency of interruptions over the four years to 30 June 2010 has increased from the value reported for the four years to 30 June 2009.

**Table 9: Average frequency of interruptions to customer premises - Perth CBD (NQ&R Code)**

Distributor	4 years ending 30 June 2009	4 years ending 30 June 2010
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<sup>20</sup> The Perth CBD area is defined as the areas supplied from the Milligan Street Zone Substation or the Hay Street Zone Substation.

Western Power	0.2	0.3
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Table 10 shows that the average length of interruptions to customer premises has fallen during the four years ending 30 June 2010 compared to the four years ending 30 June 2009. This is consistent with the increase in the average frequency of interruptions.

**Table 10: Average length of interruptions to customer premises - Perth CBD (NQ&R Code)**

Distributor	4 years ending 30 June 2009	4 years ending 30 June 2010
Western Power	180 minutes	135 minutes

Table 11 shows the average percentage of time that electricity has been supplied to customers in the CBD for the four years to 30 June 2010 remained unchanged compared to the four years to 30 June 2009.

**Table 11: Average percentage of time that electricity has been supplied to customer premises- Perth CBD (NQ&R Code)**

Distributor	4 years ending 30 June 2009	4 years ending 30 June 2010
Western Power	99.993	99.993

### Urban Areas Network Reliability

Western Power is the only distributor supplying customers in the Urban areas.

Western Power commented that:

The increase in the average total length of interruptions over the two reporting periods can be attributed to the 22-23 March 2010 storm events (see comments regarding Table 4 for further detail).

Table 12 compares the average interruption data for the four years to 30 June 2010 with the four years to 30 June 2009. It can be seen that there has been a significant increase (by 23%) in the average total length of interruptions over the two reporting periods. The length of interruptions exceeded the standard prescribed in the NQ&R Code by 173 minutes over the four years ending 30 June 2010.

Western Power commented that:

The increase in the average total length of interruptions over the two reporting periods can be attributed to the 22-23 March 2010 storm events (see comments regarding Table 4 for further detail).

**Table 12: Average total length of interruptions to customer premises – Urban areas (NQ&R Code)**

Distributor	4 years ending 2008/09	4 years ending 2009/10 <sup>21</sup>
Western Power	270 minutes	333 minutes

Table 13 and Table 14 compare the average frequency of interruptions and the average length of interruptions to customer premises for the four years to 30 June 2009 and the

<sup>21</sup> The NQ&R Code standard is 160 minutes per annum.

four years to 30 June 2010. It can be seen that there has been no change in the average frequency of interruptions to customer premises over the two reporting periods. However, the average length of interruptions to customer premises has increased by 24% between the four years to 30 June 2009 and the four years ending 30 June 2010 due to the increase in the average total length of interruptions over the same period.

**Table 13: Average frequency of interruptions to customer premises – Urban areas (NQ&R Code)**

Distributor	4 years ending 2008/09	4 years ending 2009/10
Western Power	2.8	2.8

**Table 14: Average length of interruptions to customer premises – Urban areas (NQ&R Code)**

Distributor	4 years ending 2008/09	4 years ending 2009/10
Western Power	96 minutes	119 minutes

Table 15 shows the average time that electricity has been supplied to customers for the four years to 30 June 2010 is marginally lower than the four years to 30 June 2009. This is consistent with the increase in the total average length of interruptions over the same period.

**Table 15: Average percentage of time that electricity has been supplied to customer premises - Urban areas (NQ&R Code)**

Distributor	4 years ending 2008/09	4 years ending 2009/10
Western Power	99.95	99.94

### *Other Areas of the State Network Reliability*

All three distributors supply electricity to areas of the State outside of the CBD and Urban areas.

Table 16 provides information on the average total length of interruptions on the networks in the Other Areas of the State. For the four years to 30 June 2010, only RIA managed to meet the 290 minute standard prescribed in the NQ&R Code (see Table 7) with a total average interruption duration of 87 minutes. The Horizon Power network exceeded the standard by 40.7% and the Western Power network exceeded the standard by 134%.

In the four years to 30 June 2010, Horizon Power recorded an 8.9% decrease in the total average duration of interruptions and Western Power recorded a 15.1% increase in the total average duration of interruptions compared to the four years to 30 June 2009.

Western Power commented that:

The increase in average total length of interruptions to customer premises can be attributed to environmental factors such as lightning activity.

**Table 16: Average total length of interruptions to customer premises – other areas of the State (NQ&R Code)**

Distributor	4 years ending 2008/09	4 years ending 2009/10 <sup>22</sup>
Horizon Power	448 minutes	408 minutes
Rottnest Island Authority	108 minutes	87 minutes
Western Power	590 minutes	679 minutes

Table 17 and Table 18 show that for the four years ending 30 June 2010, there have been marginal changes to the average frequency of interruptions and the average length of interruptions to customer premises for all three distributors compared to the four years ending 30 June 2009.

**Table 17: Average frequency of interruptions to customer premises – other areas of the State (NQ&R Code)**

Distributor	4 years ending 2008/09	4 years ending 2009/10
Horizon Power	5.7	5.1
Rottnest Island Authority	10.7	13.1
Western Power	4.5	4.9

**Table 18: Average length of interruptions to customer premises – other areas of the State (NQ&R Code)**

Distributor	4 years ending 2008/09	4 years ending 2009/10
Horizon Power	78.6 minutes	79.0 minutes
Rottnest Island Authority	12.1minutes	12.9 minutes
Western Power	131 minutes	138.8 minutes

<sup>22</sup> The NQ&R Code standard is 290 minutes per annum.



Table 19 shows the average percentage of time that electricity has been supplied to customers in other areas of the State for the four years ending 30 June 2010. Compared to the four years ending 30 June 2009, Horizon Power and RIA have recorded marginal improvements, and Western Power has recorded a slight decrease, in the average percentage of time that electricity has been supplied.

**Table 19: Average percentage of time that electricity has been supplied - other areas of the State (NQ&R Code)**

Distributor	4 years ending 2008/09	4 years ending 2009/10
Horizon Power	99.92	99.93
Rottnest Island Authority <sup>39</sup>	99.67	99.99
Western Power	99.89	99.87

## Distribution Network Reliability Performance (2002 SCONRRR Framework)

The 2002 SCONRRR<sup>23</sup> reliability performance reporting indicators are based on the definitions in standard IEEE 1366-2003<sup>24</sup>. 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<sup>25</sup> 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.

<sup>23</sup> National Regulatory Reporting for Electricity Distribution and Retailing Businesses, Utility Regulators Forum Steering Committee on National Regulatory Reporting Requirement, March 2002

<sup>24</sup> Standard IEEE 1366-2003 - Guide for Electric Power Distribution Reliability Indices, Institute for Electrical and Electronic Engineers.

<sup>25</sup> Electricity Distribution Network Service Providers, Service Target Performance Incentive Scheme, Australian Energy Regulator, November 2009 (see page 12 and Appendix D)

**Table 20: Distribution feeder classifications (SCONRRR)**

Feeder Category	Description
CBD <sup>26</sup>	A feeder supplying predominantly commercial, high rise buildings, supplied by a predominantly underground distribution network containing significant interconnection and redundancy compared to urban areas.
Urban	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.
Short Rural	A feeder, which is not a CBD or urban feeder, with a total feeder route length less than 200km.
Long Rural	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<sup>27</sup> 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)

Comparing Table 21 with Table 22 shows that, the overall SAIDI values are typically higher than the normalised SAIDI values (with the exception of RIA), which implies that a significant proportion of the SAIDI for those feeders was attributable to events that occurred on a MED.

**Table 21: Overall distribution network SAIDI (SCONRRR) - 2009/10**

Distributor	Average Interruption Duration (minutes per annum)				
	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	45	124	1,762	204
Rottnest Island Authority	N/A	N/A	177	N/A	177
Western Power	11	469	459	1044	517

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

<sup>26</sup> The Perth CBD area is defined as the areas supplied from the Milligan Street Zone Substation or the Hay Street Zone Substation.

<sup>27</sup> 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 22: Normalised distribution network SAIDI (SCONRRR) - 2009/10**

Distributor	Average Interruption Duration (minutes per annum)				
	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	19	60	1,385	125
Rottnest Island Authority	N/A	N/A	177	N/A	177
Western Power	1	156	212	661	217

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

Table 23 compares Normalised SAIDI performance in 2009/10 with 2008/09. Over the two year period, Horizon Power reported a decrease in SAIDI values for all feeders, RIA reported a 27% increase in SAIDI for its Short Rural feeders and Western Power reported a decrease in SAIDI for all feeders, other than its Long Rural feeders (up 12%).

Western Power commented that:

There was a reduction in the contribution to SAIDI from faults due to external factors such as strong winds, bushfires, vandalism, vegetation, vehicles, third party machinery, birds, and other animals. Power line reinforcements and the installation of automated switchgear contributed to an improvement in SAIDI in all areas, other than Long Rural feeders.

Faults and damage arising from extensive lightning activity and emergency outages to remove hazards contributed to the increased Long Rural SAIDI.

RIA commented that:

Over the Christmas/New Year period in 2009 there was an unexpected increase in demand for power on the island, which resulted in increased outages, this was addressed by bringing online an extra generator to run in peak demand periods each day. Total outages for the year were still within the accepted parameters.

**Table 23: Normalised distribution network SAIDI (SCONRRR) – 2008/09 and 2009/10**

Distributor	Average Interruption Duration (minutes per annum)									
	CBD		Urban		Short Rural		Long Rural		Total Network	
	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10
Horizon Power	N/A	N/A	50	19	76	60	2,143	1385	184	125
Rottnest Island Authority	N/A	N/A	N/A	N/A	139	177	N/A	N/A	139	177
Western Power	29	1	161	156	241	212	589	661	225	217

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

### *System Average Interruption Frequency Index (SAIFI)*

Comparing Table 24 with Table 25 shows that, consistent with the SAIDI measures (Table 21 and Table 22), the Normalised SAIFI is lower for all classes of feeder except those operated by RIA.

**Table 24: Overall distribution network SAIFI (SCONRRR) - 2009/10**

Distributor	Average Interruption Frequency (per annum)				
	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	0.73	2.31	12.50	2.78
Rottnest Island Authority	N/A	N/A	13.00	N/A	13.00
Western Power	0.29	2.59	3.27	5.84	3.09

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

**Table 25: Normalised distribution network SAIFI (SCONRRR) - 2009/10**

Distributor	Average Interruption Frequency (per annum)				
	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	0.21	1.00	10.02	1.43
Rottnest Island Authority	N/A	N/A	13.00	N/A	13.00
Western Power	0.02	1.55	2.34	4.17	2.00

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

The difference between the overall and normalised values of SAIDI and SAIFI indicates a significant proportion of unplanned interruptions were caused by factors beyond the reasonable control of the distributors or when the daily SAIDI exceeded the MED threshold.

Table 26 compares Normalised SAIFI performance in 2009/10 with 2008/09. Over the two year period, the SAIFI values for all Horizon Power and Western Power feeders decreased, while the SAIFI value for RIA Short Rural feeders increased.

Western Power commented that:

There was a reduction in the contribution to total SAIFI from faults due to external factors such as strong winds, vandalism, vehicles, and faults arising from birds or other animals.

Power line reinforcements and the installation of automated switchgear significantly contributed to the total SAIFI improvement.

**Table 26: Normalised distribution network SAIFI (SCONRRR) – 2008/09 and 2009/10**

Distributor	Average Interruption Frequency (per annum)									
	CBD		Urban		Short Rural		Long Rural		Total Network	
	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10
Horizon Power	N/A	N/A	0.88	0.21	1.18	1.00	16.06	10.02	1.95	1.43
Rottnest Island Authority	N/A	N/A	N/A	N/A	7.0	13	N/A	N/A	7.0	13
Western Power	0.16	0.02	1.65	1.55	2.71	2.34	4.32	4.17	2.21	2.00

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

## Customer Average Interruption Duration Index (CAIDI)

Table 27 and Table 28 show the Overall and Normalised CAIDI during 2009/10. The level of CAIDI is different to that of SAIDI and SAIFI, 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.<sup>28</sup>

**Table 27: Overall distribution network CAIDI (SCONRRR) – 2009/10**

Distributor	Average Interruption Duration (minutes per annum)				
	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	62	54	141	73
Rottnest Island Authority	N/A	N/A	14	N/A	14
Western Power	36	181	140	179	167

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

**Table 28: Normalised distribution network CAIDI (SCONRRR) – 2009/10**

Distributor	Average Interruption Duration (minutes per annum)				
	CBD	Urban	Short Rural	Long Rural	Total Network
Horizon Power	N/A	90	60	138	88
Rottnest Island Authority	N/A	N/A	14	N/A	14
Western Power	27	101	91	158	108

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

Comparing Table 27 with Table 28 shows that the relationship between the overall and normalised CAIDI values differs from that for SAIDI and SAIFI. Because the CAIDI value can be expressed as the ratio of SAIDI and SAIFI, it is possible for the normalised value of CAIDI to be higher than the overall CAIDI depending on the relative changes in the value of the overall and normalised SAIDI and SAIFI values.

Table 29 compares the Normalised CAIDI performance in 2009/10 with 2008/09. Over the two year period:

- RIA has reported a 30% reduction in Short Rural CAIDI;
- Horizon Power reported increases in its Urban and Long Rural CAIDI and a reduction its Short Rural CAIDI, leading to a 6% reduction in its Total Network CAIDI;
- Western Power reported increases in its Urban, Long Rural and Short Rural CAIDI, and a significant reduction in CBD CAIDI of 85%, resulting in an increase, by 5.9%, in Total Network CAIDI.

Comparing Table 28 with Table 22 shows that the values of SAIDI and CAIDI for a given class of feeder can be very different. By way of example, Western Power's Urban feeders have a SAIDI value of 156 minutes and a CAIDI value of 101 minutes. As mentioned earlier, CAIDI provides a better measure of the average length of interruption for

<sup>28</sup> IEEE 1366-2003 defines CAIDI as being the ratio of SAIDI/SAIFI.

customers, given the CAIDI measure excludes customers who have not experienced a supply interruption.

**Table 29: Normalised distribution network CAIDI (SCONRRR) – 2008/09 and 2009/10**

Distributor	Average Interruption Duration (minutes per annum)									
	CBD		Urban		Short Rural		Long Rural		Total Network	
	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10
Horizon Power	N/A	N/A	57	90	64	60	133	138	94	88
Rottnest Island Authority	N/A	N/A	N/A	N/A	20	14	N/A	N/A	20	14
Western Power	187	27	97	101	89	91	136	158	102	108

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



## Street Lighting

The 2008 Code of Conduct requires distributors to report on the number of occasions that they have failed to repair faulty street lights before the “agreed date”. The Electricity Distribution Licence Performance Reporting Handbook defines “agreed date” as meaning:

- 5 business days for the metropolitan area;<sup>29</sup> and
- 9 business days for regional area.<sup>30</sup>

The time to repair commences from the time that a distributor becomes aware that the street light is faulty. The 2008 Code of Conduct also requires distributors to record the number of street lights they are responsible for maintaining.

Table 30 provides details of the number of street lights maintained by each distributor and the number of faults that have been logged over the five years to 30 June 2010. During 2009/10, there was a 1.9% decrease in the number of metropolitan street light faults logged and a 47% increase in the number of regional street light faults logged compared to 2008/09.

**Table 30: Number of street light faults logged (2008 Code of Conduct)**

	2005/06		2006/07		2007/08		2008/09		2009/2010	
Metropolitan	Number of street lights	Total Faults Logged	Number of street lights	Total Faults Logged	Number of street lights	Total Faults Logged	Number of street lights	Total Faults Logged	Number of street lights	Total Faults Logged
Horizon Power	NR	NR	NR	314	4,344	432	4,636	420	5,017	156
Western Power	NR	21,622	NR	21,560	179,320	27,554	183,342	40,508	187,305	39,978
<b>Metropolitan Total</b>	<b>NR</b>	<b>21,622</b>	<b>NR</b>	<b>21,874</b>	<b>183,664</b>	<b>27,986</b>	<b>187,978</b>	<b>40,928</b>	<b>192,322</b>	<b>40,134</b>
<b>Regional</b>										
Horizon Power	NR	60	NR	304	8517	264	8,817	276	9257	192
Rottnest Island Authority	NR	4	NR	13	190	30	190	48	190	2
Western Power	NR	2,255	NR	1,026	33,765	1,114	35,060	4,043	35,867	6,214
<b>Regional Total</b>	<b>NR</b>	<b>2,319</b>	<b>NR</b>	<b>1,343</b>	<b>42,472</b>	<b>1,408</b>	<b>44,067</b>	<b>4,367</b>	<b>45,314</b>	<b>6,408</b>

NR – not reported

Table 31 shows that 14.1% of metropolitan and 12.8% of regional street lights were not repaired within the prescribed time frames during 2009/10. There were significant improvements in the overall repair times for both metropolitan street lights (down from 30.7% in 2008/09) and regional street lights (down from 20.9% in 2008/09). The improvements in repair times for both metropolitan and regional street lights can be mostly attributed to the improved performance of Western Power.

<sup>29</sup> The 2008 Code of Conduct defines the metropolitan area as: Perth, Mandurah, Shire of Murray, Albany, Bunbury, Geraldton, Kalgoorlie, Karratha, Port Hedland and South Hedland.

<sup>30</sup> The 2008 Code of Conduct defines the regional area as being all areas of the State other than the metropolitan area.

**Table 31: Street lighting repair performance (2008 Code of Conduct)**

Metropolitan	2005/06		2006/07		2007/08		2008/09		2009/10	
	Faults fixed in > 5 days	Faults fixed in > 5 days (%)	Faults fixed in > 5 days	Faults fixed in > 5 days (%)	Faults fixed in > 5 days	Faults fixed in > 5 days (%)	Faults fixed in > 5 days	Faults fixed in > 5 days (%)	Faults fixed in > 5 days	Faults fixed in > 5 days (%)
Horizon Power	N/A	N/A	101	31.2	89	20.6	53	12.6	44	28.2
Western Power	1,781	8.2	7,654	35.5	9,738	35.3	12,494	30.8	5,598	14.0
<b>Metropolitan Total</b>	<b>1,781</b>	<b>8.2</b>	<b>7,755</b>	<b>35.5</b>	<b>9,827</b>	<b>35.1</b>	<b>12,547</b>	<b>30.7</b>	<b>5,642</b>	<b>14.1</b>
Regional	Faults fixed in > 9 days	Faults fixed in > 9 days (%)	Faults fixed in > 9 days	Faults fixed in > 9 days (%)	Faults fixed in > 9 days	Faults fixed in > 9 days (%)	Faults fixed in > 9 days	Faults fixed in > 9 days (%)	Faults fixed in > 9 days	Faults fixed in > 9 days (%)
Horizon Power	0	0.0	41	13.5	16	6.1	37	13.4	14	7.3
Rottnest Island Authority	0	0.0	0	0.0	0	0.0	3	6.3	0	0.0
Western Power	236	10.5	253	24.7	224	20.1	871	21.5	808	13.0
<b>Regional Total</b>	<b>236</b>	<b>10.5</b>	<b>294</b>	<b>21.9</b>	<b>240</b>	<b>17.0</b>	<b>911</b>	<b>20.9</b>	<b>822</b>	<b>12.8</b>

## Complaints

RIA reported that it did not receive any complaints in relation to the 2008 Code of Conduct and network quality and reliability issues covered in the NQ&R Code and the 2002 SCORRRR Framework during 2009/10.

### Complaints Recorded under the 2008 Code of Conduct

The customer complaint categories in the 2008 Code of Conduct exclude complaints related to network quality and reliability, which are dealt with by the NQ&R Code and the 2002 SCORRRR Framework.

Table 32 shows the total number of complaints received by distributors under the two reporting categories defined in the 2008 Code of Conduct. It should be noted that none of the distributors received any complaints in relation to the installation and operation of pre-payment meters.

Compared to 2008/09, the number of complaints received by Horizon Power increased by 19.5%. Over the same period, Western Power reported a 5.3% decrease in the total number of complaints received. The complaint resolution performance of Horizon Power has remained unchanged compared to 2008/09, whereas Western Power's performance has deteriorated during the same period.<sup>31</sup> The proportion of complaints concluded within 15 business days by Western Power has reduced from 64.6% to 33.34%.

**Table 32: Customer complaints received by distributors (2008 Code of Conduct)**

Code of Conduct	2005/06		2006/07		2007/08		2008/09		2009/10	
	Horizon Power	Western Power	Horizon Power	Western Power	Horizon Power	Western Power	Horizon Power	Western Power	Horizon Power	Western Power
Total number of complaints	4	1,583	185	1,938	118	2,491	149	2,845	178	2,695
Administrative processes and customer service complaints	4	222	0	266	51	263	77	253	65	181
Other complaints	0	1,361	0	1,672	207	2,228	72	2,592	113	793
Percentage of customer complaints concluded within 15 business days	NR	NR	NR	NR	100.0%	62.0%	100.0%	64.6%	100.0%	33.34%

NR – not reported

Western Power commented that:

Western Power maintains extensive information on complaints that are classified as "other" by the Authority's reporting framework. The major complaints categories in the "other" category for 2009/10 were; issues regarding the location of Western Power assets, queries with meter reading, damage to customer property, issues with the charges Western Power provides for its services, the time to complete customer connections, and property access.

<sup>31</sup> It should be noted that Western Power's internal complaints handling processes are designed to meet the 20 day resolution target in respect of the obligation to make a guaranteed service level payment under part 14.3 of the 2008 Code of Conduct.

The 2008 Code of Conduct requires Western Power to report on complaints closed within 20 days. Western Power targets this service standard in its performance. In 2009/10 Western Power met this target for 97% of the complaints received, in comparison to 98% in 2008/09.

### Complaints Recorded under the SCONRRR 2002 Framework

Table 33 provides details of the technical quality of service (**QoS**) complaints that have been received by distributors during 2009/10. A significant proportion of the complaints received by Horizon Power and Western Power related to 'Other' issues (technical matters not falling into the other complaint categories).

**Table 33: Technical Quality of Service (QoS) complaints (SCONRRR 2002) – 2009/10**

Complaint Category	Horizon Power	Western Power
Total number of technical QoS complaints	44	2068
Low supply voltage complaints (%)	6.82	18.23
Voltage dip complaints (%)	0.00	0.00
Voltage swell complaints (%)	6.82	0.00
Voltage spike complaints (%)	0.00	0.00
Waveform distortion complaints (%)	0.00	0.00
TV or radio interference complaints (%)	0.00	14.80
Noise from appliances complaints (%)	0.00	0.00
Other complaints (%)	86.36	66.97

Table 34 compares the number of QoS complaints received by distributors in the three years to 2009/10. During 2009/10, the total number of QoS complaints received by distributors increased by 23.5% compared to 2008/09.

**Table 34: Technical Quality of Service (QoS) complaints (SCONRRR 2002)**

Distributor	2007/08	2008/09	2009/10
Horizon Power	96	63	44
Rottnest Island Authority	0	1	0
Western Power	1,874	1,646	2,068
<b>State Total</b>	<b>1,970</b>	<b>1,710</b>	<b>2,112</b>

In order to identify those problems that were caused by equipment operated by the distributor, the 2002 SCONRRR Framework requires distributors to report on the likely cause of the problems that led to a technical QoS complaint.

Table 35 provides a breakdown of the cause of the technical QoS complaints detailed in Table 33. This shows that Horizon Power reported a much higher proportion of faults due to "network equipment faulty" (47.7%) than Western Power (6.8%). Western Power also reported that just over half of the complaints were categorised as "no problem identified" compared to 20.5% of complaints reported by Horizon Power.

**Table 35: Likely cause of technical Quality of Service (QoS) complaints (SCONRRR 2002) – 2009/10**

Likely cause of technical QoS complaints	Horizon Power	Western Power
Network equipment faulty (%)	47.73	6.82
Network interference by network service provider equipment (%)	0.00	0.00
Network interference by another customer (%)	0.00	0.00
Network limitation (%)	0.00	6.91
Customer internal problem (%)	4.55	0.77
No problem identified (%)	20.45	50.68
Environmental (%)	25.00	1.21
Other (%)	2.27	33.61

## Service Standard Payments

The obligation for distributors to make service standard payments to customers is dealt with in both the 2008 Code of Conduct and the NQ&R Code.

Part 14.4 of the 2008 Code of Conduct 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<sup>32</sup> 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).

The RIA has reported that it made no service standard payments for the fifth successive year.

Table 36 provides details of the service standard payments made by distributors for failure to give the required notice of a planned interruption to supply. In 2009/10, there was a 57.4% increase in payments made by Western Power compared to 2008/09. This is the fourth successive year that the number of service standard payments made by Western Power has increased.

Western Power commented that:

The availability of these payments was promoted to customers during the year and via media coverage following the March 2010 storm. A steady increase in customer awareness of the availability of these payments has resulted in an increase in payments made.

**Table 36: Service standard payments for failure to give notice of a planned interruption (NQ&R Code) – 2009/10**

Distributor	2005/06	2006/07	2007/08	2008/09	2009/10
Horizon Power	0	0	1	2	1
Rottnest Island Authority	0	0	0	0	0
Western Power	30	81	241	364	573

Table 37 provides details of the service standard payments made by distributors for supply interruptions longer than 12 hours continuously. During 2009/10, the number of payments made by Horizon Power increased by 129% (to 71 payments) compared to 2008/09. Over the same period, Western Power reported a 511% increase in the number of payments made. Western Power reported that the majority of these claims were related to a major storm event that affected Perth on 22 March 2010.

<sup>32</sup> Customers consuming not more than 50MWh of electricity per annum (i.e. non-contestable customers).

**Table 37: Service standard payments for supply interruptions >12 hours continuously (NQ&R Code)**

Distributor	2005/06	2006/07	2007/08	2008/09	2009/10
Horizon Power	124	323	27	31	71
Rottnest Island Authority	0	0	0	0	0
Western Power	2,676	3,709	3,099	5,589	34,151

Table 38 provides details of the service standard payments made by distributors for failure to respond to customer complaints within the prescribed timeframes. No payments were made by the distributors during 2009/10.

**Table 38: Service standard payments for failure to respond to customer complaints within prescribed timeframes (Code of Conduct)**

Distributor	2005/06	2006/07	2007/08	2008/09	2009/10
Horizon Power	0	0	0	0	0
Rottnest Island Authority	0	0	0	0	0
Western Power	21	0	1	4	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.

All three distributors reported operating call centres during 2009/10.<sup>33</sup> Horizon Power and RIA outsource their call centres,<sup>34</sup> while Western Power operates an in-house call centre to handle calls related to its distribution business.

Table 39 provides an overview of call centre performance, based on three key performance measures. It can be seen that during 2009/10, RIA performed significantly better than the other two distributors with regards to the percentage of operator calls responded to within 30 seconds and in terms of the average duration before call is answered by an operator, albeit on a relatively low volume of calls. Horizon Power performed significantly better than RIA and Western Power with regards to the percentage of calls that were unanswered.

**Table 39: Call centre performance (2008 Code of Conduct) – 2009/10**

Distributor	Total number of calls to an operator	Operator calls responded to within 30 seconds (%)	Unanswered calls (%)	Average duration before call is answered by an operator (seconds)
Horizon Power	89,200 <sup>35</sup>	83.4	1.7	34
RIA	1,027	95	14.0	21
Western Power	538,903	67.3	14.6	46
<b>State Total</b>	<b>629,130</b>	<b>69.6</b>	<b>12.7</b>	<b>33.7</b>

Table 40 details call centre performance over the four years to 30 June 2010. During 2009/10, Horizon Power has reported deteriorations in both measures of performance compared to 2008/09. Western Power has seen the level of unanswered calls increase for the fourth consecutive year, while the proportion of calls answered within 30 seconds during 2009/10 is unchanged from that in 2008/09.

Western Power commented that:

Western Power uses sophisticated messaging systems to provide customers with information that resolves their query on when restoration will occur (without the need for customers to speak to an agent) In March 2010, a major storm had a devastating affect on the electricity network. During the week of the storm 231,552 calls were received and serviced by the Call Centre through automation and agents. Excluding this extraordinary storm week, the Call Centre's performance for agent answered calls shows an improvement from 67% to 74% of calls answered within 30 seconds.

As discussed with the Authority, when Western Power was compiling data for its 2010 Annual Performance Report, Western Power suggested that not accounting separately for the storm will distort perceptions of service throughout the full year. The storm will also

<sup>33</sup> This is the first year that RIA has reported operating a call centre.

<sup>34</sup> Horizon Power and RIA outsource their call centre operations to a third party service provider.

<sup>35</sup> This is the combined total of both retail and distribution calls.



cause perception problems when comparison is made in 2010/11 reporting back to 2009/10.

Horizon Power commented that:

Horizon Power experienced a deterioration in call centre performance due to a changeover of call centre location and incorrect information being provided when workforce planning was done for our call centre. Staffing was slightly underestimated, based on inaccurate call volume reporting provided by the previous call centre provider. When this was realised the situation was quickly rectified.

**Table 40: Call centre performance (2008 Code of Conduct)**

Distributor	Operator calls responded to within 30 seconds (%)				Unanswered calls (%)			
	2006/07	2007/08	2008/09	2009/2010	2006/07	2007/08	2008/09	2009/10
Horizon Power	70.0	83.0	90.9	83.36	9.4	4.5	0.3	1.74
RIA	N/A	N/A	N/A	94.55	N/A	N/A	N/A	14.00
Western Power	46.0 <sup>36</sup>	79.0	67.8	67.25	0.1	4.3	9.4	14.57
<b>State Total</b>	<b>60.9</b>	<b>80.0</b>	<b>72.5</b>	<b>69.58</b>	<b>8.1</b>	<b>4.4</b>	<b>7.5</b>	<b>12.73</b>

<sup>36</sup> The Western Power call centre measured calls answered within 15 seconds in 2006/07. The 2007/08 and 2008/09 data are based on the standard 30 second answer period.

# Appendix 1 – Additional Network Reliability Information for 2009/10

## Network Reliability (SCONRRR 2002)

The following definitions<sup>37</sup> apply to the measures reported in this section:

- Overall – includes all sustained interruptions including transmission, directed load shedding, planned and unplanned.
- Distribution Network (Planned) – excludes transmission outages, directed load shedding and unplanned outages.
- Distribution Network (Unplanned) – excludes transmission outages, directed load shedding and planned outages.
- Normalised Distribution Network (Unplanned) – excludes outages which:
  - are transmission outages, directed load shedding and planned outages;
  - where the daily SAIDI value exceeds the threshold for a MED;<sup>38</sup>
  - are caused by exceptional natural or third party events;
  - the distributor cannot reasonably be expected to mitigate the effect of the event on interruptions by prudent asset management.

## SAIDI

Table 41 provides details of the four SAIDI measures for Western Power.

**Table 41: Western Power SAIDI Performance (SCONRRR) – 2009/10**

SAIDI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders	Total Network
Overall	11	469	459	1044	517
Distribution Network (Planned)	6	53	59	135	62
Distribution Network (Unplanned)	1	340	378	875	398
Normalised Distribution Network (Unplanned)	1	156	212	661	217

<sup>37</sup> The definition is taken from National Regulatory Reporting for Electricity Distribution and Retailing Businesses, Utility Regulators Forum, Steering Committee on National Regulatory Reporting Requirements, March 2002, Table 2 page 7.

<sup>38</sup> 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 42 provides details of the four SAIDI measures for Horizon Power.

**Table 42: Horizon Power SAIDI Performance (SCONRRR) – 2009/10**

SAIDI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders	Total Network
Overall	N/A	45	124	1762	204
Distribution Network (Planned)	N/A	9	9	331	25
Distribution Network (Unplanned)	N/A	37	78	1,396	143
Normalised Distribution Network (Unplanned)	N/A	19	60	1,385	125

Table 43 provides details of the four SAIDI measures for the RIA.

**Table 43: Rottneest Island Authority SAIDI Performance (SCONRRR) – 2009/10**

SAIDI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders	Total Network
Overall	N/R	N/R	177	N/R	177
Distribution Network (Planned)	N/R	N/R	0	N/R	0
Distribution Network (Unplanned)	N/R	N/R	177	N/R	177
Normalised Distribution Network (Unplanned)	N/R	N/R	177	N/R	177

## SAIFI

Table 44 provides details of the four SAIFI measures for Western Power.

**Table 44: Western Power SAIFI Performance (SCONRRR) – 2009/10**

SAIFI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders	Total Network
Overall	0.29	2.59	3.27	5.84	3.09
Distribution Network (Planned)	0.01	0.21	0.24	0.52	0.25
Distribution Network (Unplanned)	0.02	1.87	2.73	4.72	2.38
Normalised Distribution Network (Unplanned)	0.02	1.55	2.34	4.17	2.0

Table 45 provides details of the four SAIFI measures for Horizon Power.

**Table 45: Horizon Power SAIFI Performance (SCONRRR) – 2009/10**

SAIFI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders	Total Network
Overall	N/A	0.73	2.31	12.50	2.78
Distribution Network (Planned)	N/A	0.03	0.15	1.10	0.19
Distribution Network (Unplanned)	N/A	0.70	1.21	10.07	1.64
Normalised Distribution Network (Unplanned)	N/A	0.21	1.00	10.02	1.43

Table 46 provides details of the four SAIFI measures for RIA.

**Table 46: Rottneest Island Authority SAIFI Performance (SCONRRR) – 2009/10**

SAIFI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders	Total Network
Overall	N/R	N/R	13.00	N/R	13.00
Distribution Network (Planned)	N/R	N/R	0	N/R	0
Distribution Network (Unplanned)	N/R	N/R	13.00	N/R	13.00
Normalised Distribution Network (Unplanned)	N/R	N/R	13.00	N/R	13.00

## CAIDI

Table 47 provides details of the four CAIDI measures for Western Power.

**Table 47: Western Power CAIDI Performance (SCONRRR) – 2009/10**

CAIDI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders	Total Network
Overall	36	181	140	179	167
Distribution Network (Planned)	393	247	243	262	249
Distribution Network (Unplanned)	27	180	138	185	167
Normalised Distribution Network (Unplanned)	27	101	91	158	108

Table 48 provides details of the four CAIDI measures for Horizon Power.

**Table 48: Horizon Power CAIDI Performance (SCONRRR) – 2009/10**

CAIDI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders	Total Network
Overall	N/A	62	53	141	73
Distribution Network (Planned)	N/A	306	60	299	130
Distribution Network (Unplanned)	N/A	52	65	139	87
Normalised Distribution Network (Unplanned)	N/A	90	60	138	88

Table 49 provides details of the four CAIDI measures for the RIA.

**Table 49: Rottneest Island Authority CAIDI Performance (SCONRRR) – 2009/10**

CAIDI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders	Total Network
Overall	N/R	N/R	14	N/R	14
Distribution Network (Planned)	N/R	N/R	0	N/R	0
Distribution Network (Unplanned)	N/R	N/R	14	N/R	14
Normalised Distribution Network (Unplanned)	N/R	N/R	14	N/R	14

## Appendix 2 - Network Asset Information

Table 50 provides an overview of the network assets deployed in the distribution networks operated by Horizon Power, the RIA and Western Power.

**Table 50: SCONRRR 2002 Distribution Network Asset Descriptions by Distributor (as at 30 June 2010)**

Asset Type	Asset Sub-Type	Horizon Power	Rottnest Island Authority	Western Power
Number of metered supply points	CBD	N/A	N/R	6,406
	Urban	2,022	N/R	624,459
	Short Rural	39,029	N/R	293,232
	Long Rural	1,235	N/R	90,902
Feeder Length (km)	CBD	N/A	N/R	159.4
	Urban	37	N/R	13,902.8
	Short Rural	4404	44.9	23,456.7
	Long Rural	3578	N/R	50,106.8
Number of Transformers	Sub-transmission	N/A	2	N/A
	Distribution	3,780	13	63,448
Total Capacity of Transformers (MVA)	Sub-transmission	N/A	2	N/A
	Distribution	566	3	7,546
Number of street lights		14,274	190	223,172
Number of Poles		56,242	50	746,763