2006/07 Annual Performance Report
Electricity Distributors

February 2008

Economic Regulation Authority

WESTERN AUSTRALIA

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Summary

This is the second report published by the Authority that examines the performance of electricity distributors who supply small use[1] customers in Western Australia. In 2005/06 distributor performance was covered in two reports[2]:

- 2005/06 Annual Report Code of Conduct (For the Supply of Electricity to Small Use Customers) (**Code of Conduct Report**) - presented performance information based on the record keeping requirements set out in Part 13 of the *Code of Conduct (For the Supply of Electricity to Small Use Customers)* (**Code of Conduct**).
- Electricity Industry Network Quality and Reliability Performance Report 2005/06 (**NQ&R Report**) – presented an overview of the individual reports published by distributors in accordance with the *Electricity Industry (Network Quality and Reliability of Supply) Code 2005* (**NQ&R Code**).

The reporting requirements under the Code of Conduct and the NQ&R Code have been incorporated into the performance reporting obligations contained in the Electricity Compliance Reporting Manual (**Reporting Manual**) published by the Authority in May 2007. The Reporting Manual combines the record keeping requirements of the Code of Conduct and the NQ&R Code with the national energy retail performance indicators published by the Utility Regulators Forum in the 2002 SCONRRR Report[3].

The 2005/06 NQ&R Report provided coverage of all distribution licensees, even if they did not supply small use customers. This report only includes those distributors, Horizon Power, Rottnest Island Authority (**RIA**) and Western Power, who supplied electricity to small use customers in 2006/07.

Customer Connections

There were 844,000 small use customer connections on the distribution networks operated by Horizon Power (44,203), RIA (98) and Western Power (799,892). The number of new connections established grew by 65% from 22,717 in 2005/06 to 36,874 in 2006/07. However, the number of new connections established by Horizon Power grew by 400% to 13,974 due to initiatives to replace single bulk meters with individual property meters in remote communities.

Western Power failed to establish 1 in 5 new connections within the prescribed time scales[4] for the second successive year. Western Power commented that the demand for new connections has continued to grow at a time when there are competing priorities for their technical resources.

[1] A small use customer is a customer who consumes less than 160MWh of electricity per annum

[2] The reports can be found on the Authority's web site: http://www.era.wa.gov.au/2/246/51/reports__decisi.pm

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

[4] The *Electricity Industry (Obligation to Connect) Regulations 2005* prescribe the time scales to connect small use customers.

Network Reliability

The number of customers experiencing a continuous interruption exceeding 12 hours increased by 81% compared to 2005/06 with Horizon Power reporting an increase of 183% and Western Power 49%. A large proportion of the Horizon Power interruptions were due to severe storms and Cyclone George. Western Power commented that the increase on their network was predominantly due to the Dwellingup bushfires, lightning, pole top fires and equipment failure.

The number of customers who have experienced multiple interruptions that exceed the prescribed standards increased by 148% in CBD[5] and urban areas and by 685% in the rest of the State. Horizon Power commented that a large proportion of the interruptions in 2006/07 were due to Cyclone George, the Esperance storm in January 2007, generation and transmission problems in the Ord and pole top insulator issues in Hopetoun. There are a number of current and future initiatives underway to improve network reliability in cyclone prone areas of the State and the Esperance area. Western Power commented that the increase in multiple interruptions was predominantly due to outages for planned work, lightning, vegetation and equipment failure.

The average total length of interruptions to supply was 25 minutes compared with the standard of 30 minutes prescribed for the CBD. In urban areas, the average total length of interruptions was 293 minutes, which exceeded the standard of 160 minutes by 83%.

In the areas of the State other than CBD and urban areas, the average total length of interruptions reported by Horizon Power and Western Power exceeded the standard of 290 minutes by 56% and 89% respectively. Only Rottnest Island Authority managed to meet the standard with an average of 236 minutes.

Western Power has provided a number of reasons for its poor performance in urban and other areas of the State and advised that there is a strong focus on reliability improvement strategies and increased expenditure in urban and rural areas to overcome the recent upward trend.

The average frequency of interruption to customer premises and the average length of interruption to customer premises remained little changed from the values reported in 2005/06 with the exception of Rottnest Island Authority, which reported an increase of 130% in the frequency of interruptions.

This is the first report published by the Authority to include reliability information based on the reporting framework in the 2002 SCONRRR Report. This framework differs from the NQ&R Code in that it measures performance on categories of feeder (CBD, Urban, Short Rural and Long Rural) rather than the geographic location of the feeder, which facilitates performance comparison of Western Australian distributors. The 2006/07 performance data shows that customers on rural feeders experience a SAIFI[6] of between 2 and 8 times more and a SAIDI[7] of between 2 and 22 times more than customers on urban feeders.

The inclusion of the SCONRRR reliability indicators in the Reporting Manual could facilitate comparison of the reliability performance of Western Australian distributors with distributors operating in New South Wales, South Australia and Victoria. However, best practice dictates that such a comparison is based on performance data averaged over a

[5] Western Power is the only distributor providing service in the Perth CBD

[6] System Average Interruption Frequency Index

[7] System Average Interruption Duration Index

number of years. Given that only one year of data is available for WA distributors, comparative performance analysis will not be included in this report. Consideration will be given to the inclusion of an inter-jurisdictional comparison of reliability performance in future reports.

Street Lighting

In 2006/07, 35% of metropolitan and 22% of regional streetlights were not repaired within the prescribed time scales, which is a significant increase from 2005/06. The average time to repair faulty streetlights was 6.8 days for Horizon Power and 6.5 days for Western Power.

Complaints

The total number of customer complaints recorded by distributors under the Code of Conduct increased from 2,601 in 2005/06 to 4,403 in 2006/07, a rise of 69%. Horizon Power reported significant increases in complaints related to reliability of supply and quality of supply. A large number of these complaints were caused by infrastructure issues at Esperance, Exmouth and Hopetoun. Western Power reported increases in complaints related to street lighting, network assets, administrative processes and network charges. Almost 40% of complaints recorded by Western Power fell into the "other" category.

Horizon Power took between 4.4 and 4.6 days to conclude a complaint. Western Power took between 0.7 and 10.8 days to conclude a complaint, with network asset and network charges complaints taking the longest to conclude.

Compensation Payments

The Code of Conduct and the NQ&R Code prescribe compensation payments for non-contestable customers[8] for supply interruptions exceeding 12 hours continuously, failure to provide 3 days notice of a planned interruption and failure to respond to a customer query or complaint within the prescribed timeframes. There were no payments in 2006/07 in the failure to respond to a customer query or complaint category.

The number of payments for supply interruptions exceeding 12 hours rose by 44% to 4,032 in 2006/07, representing a cost of $322,560 to distributors. The increase in compensation payments follows the trend in the number of customers who experienced long supply interruptions.

Western Power made 81 payments for failure to give notice of a planned interruption, up from 30 in 2005/06.

Contact Centre Performance

This is the first time that the distributor's contact centre performance has been reported. Horizon Power and Western Power are the only distributors who operate contact centres. Horizon Power has outsourced it's contact centre to Synergy, the largest electricity retailer in the State.

[8] Non-contestable customers consume less than 50MWh of electricity per annum

Horizon Power is unable to separately report performance on calls relating to it's retail business and distribution network. On a total volume of 112,000 calls, 70% were answered within 30 seconds and the average wait for a call to be answered was 26.5 seconds. Western Power handled just over 66,000 calls with 46% answered within 15 seconds (they will be moving to the 30 second measure in 2008) and an average wait for a call to be answered of 106 seconds.

Purpose of the Report

The purpose of this report is to bring transparency and accountability to the performance of electricity distribution[9] businesses that supply small use customers[10] and to benchmark, where possible, performance against similar businesses in other electricity markets. All electricity licences include a condition that the licensee must provide to the Authority any information that the Authority may require to fulfil it's functions under the Act. The Authority has specified the performance information to be provided by electricity distribution licensees in the Electricity Compliance Reporting Manual[11] (**Reporting Manual**) published by the Authority in May 2007. The Reporting Manual combines the record keeping requirements of the Code of Conduct[12] and the NQ&R Code[13] with the national energy retail performance indicators published by the Utility Regulators Forum in the 2002 SCONRRR Report[14].

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 scales.
- Network Reliability: information about the frequency and duration of supply interruptions on the distribution network. There are a number of key reliability indicators that measure the number of customers experiencing interruptions exceeding defined standards, the number of customers experiencing interruptions exceeding 12 hours, the average frequency of interruption and the average duration of interruptions experienced by customers.
- 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 complaints and customer contact centre responsiveness. Complaints are categorised into technical quality, reliability of supply, administration and network charges and costs.
- Compensation Payments: information about the number of compensation payments made by distributors for failing to meet the service standards prescribed in the *Code of Conduct (For the Supply of Electricity to Small Use Customers)* (**Code of Conduct**) and the *Electricity Industry (Network Quality and Reliability of Supply) Code 2005* (**NQ&R Code**).

[9] And Integrated regional licensees who distribute electricity to small use customers.

[10] Small use customers consume less than 160MWh of electricity per annum

[11] Electricity Compliance Reporting Manual, which can be found on the Authority's web site: http://www.era.wa.gov.au/2/281/51/regulatory_guid.pm

[12] Code of Conduct (for the Supply of Electricity to Small Use Customers) 2004

[13] Electricity Industry (Network Quality and Reliability of Supply) Code 2005

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

Electricity Distribution Market Structure

The *Electricity Industry Act 2004* (**EIA**) includes provisions for the licensing of electricity supply. Part 2 of the EIA, which came into force on 1 January 2005, sets out the provisions pertaining to the licensing scheme for electricity service providers, including distributors. In order to facilitate greater scope for competition in the Western Australian electricity market, the Government restructured Western Power into four new statutory Corporations:

- Western Power: operates transmission and distribution networks in the SWIS[15];
- Synergy: retails electricity within the SWIS;
- Horizon Power: operates a vertically integrated electricity business that operates in areas of the State outside the SWIS; and
- Verve: operates the former Western Power generation facilities.

From 1 January 2005, the Government introduced measures to make all customers who consume more than 50MWh of electricity per annum eligible to choose their electricity retailer. This created two classes of small use customer:

- Contestable customers: consume 50-160MWh of electricity per annum.
- Non-contestable customers: consume <50MWh of electricity per annum.

It is currently estimated that over 98% of small use customers consume less than 50MWh of electricity per annum. Currently these customers are exclusively supplied by Western Power within the SWIS, Rottnest Island Authority (**RIA**) on Rottnest Island and Horizon Power in the rest of the State. The size of the Western Australian contestable market is in the order 15,000[16] customers, or 1.5% of the total small use customer market.

Prior to the restructure in April 2006, Western Power was the monopoly distribution network operator for small use customer connections for all areas throughout the State except Rottnest Island, which is operated by the RIA. Since the restructure, Western Power has continued to operate the distribution network within the SWIS, known as the South West Interconnected Network (**SWIN**), and Horizon Power has taken over the operation of the North West Interconnected System (**NWIS**)[17] and 30 smaller, isolated distribution networks in regional areas of the State. The RIA continues to operate the distribution network on Rottnest Island. There are a number of other distribution networks that are licensed by the Authority[18], but these networks do not supply small use customers and their performance is not covered by this report.

Post-disaggregation, Western Power operates the largest distribution network in the State, with just under 700,000 customer connections, followed by Horizon Power with over 44,000 connections and then RIA with just under 100 connections.

The *Electricity Networks Access Code 2004* (Access Code) requires Western Power to provide third parties access to its transmission and distribution network through a contract

[15] South West Interconnected System, which includes the south-western coastal area and Kalgoorlie

[16] Western Power web site: http://www.wpcorp.com.au/mainContent/workingWithPower/NetworkAccessServices/Contestability.html

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

[18] 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

known as the Access Arrangement[19]. The Access Arrangement, which is reviewed at least every 5 years, sets out a number of reference services that may be purchased 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 reported on 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.

Amendment of the Code of Conduct

The Code of Conduct was reviewed by the Electricity Code Consultative Committee (**ECCC**) and the Authority approved the final report of the ECCC in October 2007. The report recommended a number of amendments, which will come into effect with the publication of the amended Code of Conduct on 1 January 2008.

Part 13 (Record Keeping) of the amended Code of Conduct will be consistent with the performance indicators in the 2002 SCONRR Report[20]. The amended Code of Conduct will retain a limited number of indicators, such as compensation payments, that are in the current Code of Conduct, where these indicators provide information that is specific to the Western Australian market.

Amendment 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 do not supply small use customers.

The intention of NQ&R Code amendment is to remove distributors who do not supply small use customers from the performance reporting regime. Consistent with this approach, the Authority will no longer require distributors who are exempt from reporting under the NQ&R Code to provide annual performance reports to the Authority.

Electricity Compliance Reporting Manual

The Authority published the Electricity Compliance Reporting Manual (**Reporting Manual**) in May 2007[21]. The Reporting Manual includes details of the reports that electricity licensees must provide to the Authority and the timing of these reports.

The Reporting Manual includes a number of performance reporting obligations based on the record keeping requirements set out in the NQ&R Code, the Code of Conduct and the distribution performance indicators contained in the 2002 SCONRRR Report.

The Reporting Manual requires distributors to provide to the Authority annual performance reports covering the period to 30 June by 20 September each year. The Authority has provided separate Data Sheets and a Data Input Guide document to assist distributors

[19] Details of the Access Arrangement can be found on the Authority's web site: http://www.era.wa.gov.au/1/264/48/electricity.pm

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

[21] The Reporting Manual can be found on the Authority's web site: http://www.era.wa.gov.au/2/281/51/regulatory_guid.pm

with the reporting process.

This report is the first to be based on the performance information provided under the Reporting Manual. Distributors have until 2008 to fully comply with the additional performance indicators in the 2002 SCONRRR Report. However, the distributors have been able to report against the majority of these indicators in their 2007 reports.

The Reporting Manual will be reviewed early in 2008 to incorporate the amendments to the NQ&R Code and the new Code of Conduct.

DISTRIBUTOR PERFORMANCE

Customer Connections

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

- 20 business days for a new connection to the distribution network[22];
- 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 there are just over 844,000 small use customer connections on distribution networks across the State, of which just under 95% are on the SWIN operated by Western Power. Horizon Power has an aggregate of 44,203 connections on the NWIS and 30 other isolated systems across regional areas.

Table 1: Small use customer connections – 2006/07

Distributor	Number of Connections
Horizon Power	44,203
Rottnest Island Authority	98
Western Power	799,892
State Total	**844,193**

Table 2 provides details of the new connections established within the prescribed time scales. There was a 300% increase in connections established on Horizon Power network in large part due to the Town Regularisation Program and the Aboriginal & Remote Communities Power Supply Program where single bulk metered supply points are being replaced by a meter at individual dwellings. Both Horizon Power and the RIA reported 100% success in meeting the prescribed standard for new connections to be established.

Western Power reported a 22% increase in connections established on the network. However, over the past 2 years, approximately 1 in 5 customer connections were not established within the prescribed standard. Western Power commented that the demand for new connections has continued to grow at a time when there are competing priorities for their technical resources.

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

Table 2: Establishment of new connections

Distributor	2005/06			2006/07		
	Number of connections established	Number of connections not established in prescribed time frame	Connections not established in prescribed time frame (%)	Number of connections established	Number of connections not established in prescribed time frame	Connections not established in prescribed time frame (%)
Horizon Power	3,496	0	0.0	13,974	0	0.0
Rottnest Island Authority	1	0	0.0	6	0	0.0
Western Power	18,786	3,931	20.9	22,894	4,698	20.5

Network Reliability

Significant Interruptions to Small Use Customer Premises

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 CBD and urban areas[23] 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 3 shows that there has been an 80% increase in the overall number of interruptions to supply that exceed 12 hours continuously across the State.

Horizon Power reported an increase of 183% in the number of interruptions to customer supply exceeding 12 hours continuously compared to 2005/06. Details of the interruptions that exceeded 12 hours can be found in the annual network quality and reliability report published by Horizon Power on their web site[24]. Horizon Power reported that a large proportion of the interruptions in 2006/07 were caused by Cyclone George and severe storms, including the storm that affected Esperance in January 2007.

Western Power reported an increase of 49% in the number of interruptions to customer supply exceeding 12 hours continuously compared to 2005/06. Western Power commented that the increase was predominantly due to the Dwellingup bushfires, lightning, pole top fires and equipment failure.

Table 3: Interruptions to customer supply exceeding 12 hours continuously

	Number of interruptions 2005/06[25]	Number of interruptions 2006/07	Percentage Change
Horizon Power	3,136	8,882	183.2
Rottnest Island Authority	0	0	0.0
Western Power	9,985	14,889	49.1
State Total	**13,121**	**23,771**	**81.2**

Table 4 provides details of multiple interruptions to customer supply across the State. Western Power is the only distributor that is subject to the multiple interruption standard for Perth CBD and urban areas. The number of customers who have experienced more than 9 interruptions to supply in these areas has risen by 148% compared to 2005/06.

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

[24] Horizon Power Network Quality and Reliability of Supply Annual Report 2006/07, page 5

[25] Electricity Industry Network Quality and Reliability of Supply Report 2005/06, which is available on the Authority's website: http://www.era.wa.gov.au/2/246/51/reports__decisi.pm

The number of customers who have experienced more than 16 interruptions to supply in the remaining areas of the State has risen by 685% compared to 2005/06. Both Horizon Power and Western Power reported increases in line with the overall increase.

Western Power commented that the increase in multiple interruptions was predominantly due to outages for planned work, lightning, vegetation and equipment failure.

Horizon Power reported that the increase was due to flooding in the Esperance area during the severe storms, generation and transmission problems in the Ord area and pole top insulator problems in Hopetoun. There are a number of current and future initiatives underway to improve network reliability in cyclone prone areas of the State and the Esperance area.

Table 4: Customers who have experienced multiple interruptions to supply

	Customers who have experienced more than 9 interruptions to supply			Customers who have experienced more than 16 interruptions to supply		
	2005/06	2006/07	% Change	2005/06	2006/07	% Change
Horizon Power	Not Applicable	Not Applicable	Not Applicable	378	2,872	659.8
Rottnest Island Authority	Not Applicable	Not Applicable	Not Applicable	0	98	-
Western Power	10,305	25,577	148.2	34	266	682.3
State Total	**10,305**	**25,577**	**148.2**	**412**	**3,236**	**685.4**

Network Quality and Reliability Code Interruption Standards

The NQ&R Code requires distributors to report on the following measures of system reliability for each discrete area[26] of the State:

- average total length of interruptions of supply to all customer premises expressed in minutes;
- average length of interruptions of supply to all customer premises expressed in minutes;
- average number of interruptions of supply to customer premises; 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 include major event days[27] in line with the requirements of the NQ&R Code. The approach taken in the NQ&R Code is unusual because including these days presents reliability performance that includes factors that are generally outside the control of the distributor, such as storms and other natural disasters.

[26] The NQ&R Code defines 3 discrete areas: Perth CBD, Urban and Rest of the State. Distributors are also required to report on the individual performance of each isolated system

[27] Standard IEEE 1366-2003 defines a major event day as a day in which the system SAIDI exceeds a threshold value Tmed. Tmed 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.

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 4 years ending in the current reporting period; and
- the average of the four (annual) values.

This calculation gives an overall average over a 4 year period and it is applied to the calculation of average length and average frequency of interruptions.

Table 5 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.

Table 5: Standard for average total length of interruptions to customer premises (NQ&R Code)

Discrete area of the state	Average total length of interruptions (minutes per annum)
The Perth CBD[28]	30
Urban areas other than the Perth CBD	160
Any other area of the State	290

Performance based on the Network Quality and Reliability Code

Perth CBD

Western Power is the only distributor providing service in the Perth CBD area. In 2006/07 Western Power provided 3 years of data spanning the period 2003/04 to 2005/06 inclusive, which means that 2006/07 is the first year in which 4 year average data is available.

Table 6 shows that the 4 year average has risen to 25 minutes, which is "in part due to an increase in planned outages and equipment failure"[29].

Table 6: Average total length of interruptions to customer premises - Perth CBD (NQ&R Code)

	3 years ending 2005/06	4 years ending 2006/07
Western Power	22 mins	25 mins (Code standard is 30 mins)

Table 7 and Table 8 show that the average frequency of interruptions and the average length of interruptions to customer premises have also risen over the 4 years ending 2006/07.

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

[29] Western Power Annual Reliability & Power Quality Report Financial Year Ending June 2007, page 14

Table 7: Average frequency of interruptions to customer premises - Perth CBD (NQ&R Code)

	3 years ending 2005/06	4 years ending 2006/07
Western Power	0.19	0.21

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

	3 years ending 2005/06	4 years ending 2006/07
Western Power	115 mins	119 mins

Table 9 shows the average time that electricity has been supplied to customers in the CBD for the 4 year period ending 2006/07. It can be calculated that the average length of time that electricity was not supplied to customers during the year was approximately 26 minutes[30].

Table 9: Average percentage of time that electricity has been supplied to customer premises- Perth CBD (NQ&R Code)

	3 years ending 2005/06	4 years ending 2006/07
Western Power	99.996	99.995

Urban Areas

Western Power is the only distributor providing service in the Urban areas. In 2006/07 Western Power provided 3 years of data spanning the period 2003/04 to 2005/06 inclusive, which means that 2006/07 is the first year in which 4 year average data is available.

Table 10 shows that the average total length of interruptions exceeds the 160 minute standard prescribed in the NQ&R Code by 83%. The average annual interruptions increased by 11% (from 218 minutes to 242 minutes) during the year ending 30 June 2007. Western Power commented that "this is in part due to pole top fires, bird, equipment failure, fires and damage to assets from third party machinery" and there is a "strong focus on reliability improvement strategies and increased capital and operating expenditure in urban areas for the forthcoming years are in place to reverse this recent upward trend"[31].

Table 10: Average total length of interruptions to customer premises – Urban areas (NQ&R Code)

	3 years ending 2005/06	4 years ending 2006/07
Western Power	303 mins	293 mins (Code standard is 160 mins)

Table 11 and Table 12 show that the average frequency of interruptions and the average length of interruptions to customer premises are little changed from the 2005/06 values.

[30] There are 525,960 minutes of supply in the average year

[31] Western Power Annual Reliability & Power Quality Report Financial Year Ending June 2007, page 15

Table 11: Average frequency of interruptions to customer premises – Urban areas (NQ&R Code)

	3 years ending 2005/06	4 years ending 2006/07
Western Power	3.30	3.23

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

	3 years ending 2005/06	4 years ending 2006/07
Western Power	92 mins	91 mins

Table 13 shows the average time that electricity has been supplied to customers in urban areas the 4 year period ending 2006/07. It can be calculated that the average length of time that electricity was not been supplied to customers during the year was approximately 315 minutes[32].

Table 13: Average percentage of time that electricity has been supplied to customer premises- Urban areas (NQ&R Code)

	3 years ending 2005/06	4 years ending 2006/07
Western Power	99.94	99.94

Other Areas of the State

The three distributors covered in this report supply electricity to areas of the State outside of the CBD and urban areas.

Table 14 provides information on the average total length of interruptions on the networks operated by the three distributors. The 4-year average for the Western Power network exceeded the standard in the NQ&R Code by 89%. Average interruptions increased by 22% (from 462 to 563 minutes) during 2006/07. Western Power commented that "this is in part due to lightning, birds, bushfires and vegetation" and there is a "strong focus on reliability improvement strategies and increased capital and operating expenditure in rural areas for the forthcoming years are in place to reverse this recent upward trend"[33]

The 3-year average total length of interruptions on the Horizon Power networks exceeded the standard by 57%. Average interruptions increased by 111% (from 366 to 774 minutes) during 2006/07[34]. Horizon Power commented that a large proportion of the interruptions in 2006/07 were due to Cyclone George and the storm in January 2007 that affected Esperance. Two major programs have been undertaken to underground the power network in Port Hedland and Roeburn and an ongoing program of work is underway to upgrade the Esperance network. Horizon Power is developing a program to improve the robustness of overhead networks in cyclone prone areas of the State.

[32] There are 525,960 minutes of supply in the average year.

[33] Western Power Annual Reliability & Power Quality Report Financial Year Ending June 2007, page 16

[34] Horizon Power Network Quality and Reliability of Supply Annual Report 2006/07, page 10

Table 14: Average total length of interruptions to customer premises – Other areas of the State (NQ&R Code)

	3 years ending 2005/06	4 years ending 2006/07 (Code standard is 290 mins)
Horizon Power	294 mins[35]	454 mins[36]
Rottnest Island Authority	248 mins[30]	236[31]
Western Power	518 mins	548 mins

Table 15 and Table 16 show that the average frequency of interruptions and the average length of interruptions to customer premises are little changed from the 2005/06 values with the exception of Rottnest Island Authority. There were a number of outages that affected the whole distribution network on the island, which led to a 372% increase (from 4.66 to 22.01) in the average number of interruptions to supply during 2006/07.

Table 15: Average frequency of interruptions to customer premises – Other areas of the State (NQ&R Code)

	3 years ending 2005/06	4 years ending 2006/07
Horizon Power	5.63[37]	5.77[38]
Rottnest Island Authority	4.49[32]	10.33[33]
Western Power	4.16	4.29

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

	3 years ending 2005/06	4 years ending 2006/07
Horizon Power	53.8 mins[39]	58.7 mins[40]
Rottnest Island Authority	25.5 mins[42]	20.2 mins[43]
Western Power	124 mins	128 mins

Table 17 shows the average time that electricity has been supplied to customers in other areas of the State for the 4 year period ending 2006/07. It can be calculated that the average length of time that electricity was not supplied to customers during the year was approximately 579 minutes on the Horizon Power networks, 4,576 minutes on the RIA network and 579 minutes on the Western Power network[41].

[35] This is an average of 2 years data – 2004/05 and 2005/06
[36] This is an average of 3 years data – 2004/05 to 2006/07 inclusive
[37] This is an average of 2 years data – 2004/05 and 2005/06
[38] This is an average of 3 years data – 2004/05 to 2006/07 inclusive
[39] This is an average of 2 years data – 2004/05 and 2005/06
[40] This is an average of 3 years data – 2004/05 to 2006/07 inclusive
[41] There are 525,960 minutes of supply in the average year

Table 17: Average percentage of time that electricity has been supplied - Other areas of the State (NQ&R Code)

	3 years ending 2005/06	4 years ending 2006/07
Horizon Power	99.94[42]	99.89[43]
Rottnest Island Authority	98.76[45]	99.13[46]
Western Power	99.89	99.89

Performance based on the SCONRRR Framework

The SCONRRR reliability performance reporting indicators are based on the definitions in standard IEEE 1366-2003[44]. 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; and
- 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 Report defines the sustained interruption threshold as being more than 1 minute.

The SCONRRR 2002 Report defines 4 measures of SAIDI, SAIFI and CAIDI: Overall, Distribution Network Planned, Distribution Network Unplanned and Normalised Distribution Network Unplanned[45]. The 2002 SCONRRR Report also classifies distribution network feeders into the four categories described in Table 18.

[42] This is an average of 2 years data – 2004/05 and 2005/06

[43] This is an average of 3 years data – 2004/05 to 2006/07 inclusive

[44] Standard IEEE 1366-2003 - IEEE Guide for Electric Power Distribution Reliability Indices

[45] This measure excludes outages that are caused by exceptional natural or third party events and events that distributors cannot reasonably be expected to mitigate against in their asset management processes

Table 18: Distribution feeder classifications (SCONRRR)

Feeder Category	Description
CBD[46]	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. This accounts for the higher levels of interconnection and redundancy that apply to the design of CBD and urban distribution networks.

Two measures of SAIDI, SAIFI and CAIDI are presented in this section; overall and normalised. The 2002 SCONRRR Report[47] definitions of these two are:

- Overall Interruptions - includes all sustained interruptions including transmission, directed load shedding, planned and unplanned.
- Normalised Interruptions - excludes transmission outages, directed load shedding, outages that exceed a SAIDI threshold of 3 minutes, outages caused by exceptional natural or third party events and outages where the distributor cannot reasonably be expected to mitigate the effect of the event on interruptions by prudent asset management.

System Average Interruption Duration Index (SAIDI)

Table 19 illustrates the difference in rural feeder reliability compared to feeders that service urban areas. A customer on a Western Power Short Rural and Long Rural feeder experienced normalised interruptions that were between 2.3 and 3.7 times longer than a customer on an Urban feeder. The equivalent customer on Horizon Power's Short Rural and Long Rural feeders experienced normalised interruptions between 2.5 and 22.7 times longer than a customer on an Urban feeder. Horizon Power reported that the there are few Urban feeders in it's network, and those feeders that do qualify for Urban feeder status are located to the Port Hedland and Karratha service areas.

Comparing Table 19 and Table 20 shows that, with the exception of the Western Power CBD feeders and the RIA Short Rural feeders, the overall SAIDI values are much higher than the normalised SAIDI. This implies that a significant proportion of the SAIDI is attributable to events that are beyond the reasonable control of the distributors.

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

[47] 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 19: Overall SAIDI (SCONRRR)

	Average Interruption Duration (minutes per annum)			
	CBD	Urban	Short Rural	Long Rural
Horizon Power	Not Applicable	1,092	336	3,970
Rottnest Island Authority	Not Applicable	Not Applicable	212	Not Applicable
Western Power	33	200	450	745

Table 20: Normalised SAIDI (SCONRRR)

	Average Interruption Duration (minutes per annum)			
	CBD	Urban	Short Rural	Long Rural
Horizon Power	Not Applicable	123	303	2,798
Rottnest Island Authority	Not Applicable	Not Applicable	212	Not Applicable
Western Power	33	145	333	625

System Average Interruption Frequency Index (SAIFI)

Table 21 and Table 22 shows the average interruption frequency on urban and rural feeders.

A customer on a Western Power Short Rural and Long Rural feeder experienced between 2.1 and 2.6 times more normalised interruptions of supply than a customer on an Urban feeder. The equivalent customer on the Horizon Power Short Rural and Long Rural feeders experienced between 3.7 and 8.7 times more normalised interruptions than a customer on an Urban feeder.

Table 21: Overall SAIFI (SCONRRR)

	Average Interruption Frequency			
	CBD	Urban	Short Rural	Long Rural
Horizon Power	Not Applicable	2.62	6.90	17.03
Rottnest Island Authority	Not Applicable	Not Applicable	22.01	Not Applicable
Western Power	0.26	2.32	4.73	5.82

Table 22: Normalised SAIFI (SCONRRR)

	Average Interruption Frequency			
	CBD	Urban	Short Rural	Long Rural
Horizon Power	Not Applicable	1.77	6.63	15.44
Rottnest Island Authority	Not Applicable	Not Applicable	22.01	Not Applicable
Western Power	0.26	1.83	3.84	4.73

Customer Average Interruption Duration Index (CAIDI)

Table 23 and Table 24 show the effect of interruptions of supply at the customer level. The pattern of CAIDI is different to that of SAIDI and SAIFI because SAIDI and SAIFI measure the effect of interruptions averaged over all customers on a feeder. CAIDI on the other hand measures the effect of interruptions for all customers who have experienced at least one interruption on a given class of feeder during the reporting period[48].

Table 23: Overall CAIDI (SCONRRR)

	Average Interruption Duration (minutes per annum)			
Distributor	**CBD**	**Urban**	**Short Rural**	**Long Rural**
Horizon Power	Not Applicable	416	49	233
Rottnest Island Authority	Not Applicable	Not Applicable	9.65	Not Applicable
Western Power	128	86	95	128

Comparing Table 24 with Table 20 shows that the values of SAIDI and CAIDI for a given type of feeder can be very different. By way of example, the CBD feeders have a SAIDI value of 33 minutes and a SAIFI value of 0.26, leading to a CAIDI value of 132 minutes (33/0.26). CAIDI provides a more direct measure of the average length of interruption that the customers who have been interrupted over the reporting period experience.

Table 24: Normalised CAIDI (SCONRRR)

	Average Interruption Duration (minutes per annum)			
Distributor	**CBD**	**Urban**	**Short Rural**	**Long Rural**
Horizon Power	Not Applicable	69	46	181
Rottnest Island Authority	Not Applicable	Not Applicable	9.65	Not Applicable
Western Power	132	85	87	132

[48] IEEE 1366-2003 defines CAIDI as being the ratio of SAIDI/SAIFI. SAIFI values <1.0 imply that on average a number of customers less than the total number of customers served by the feeders experience an interruption during the reporting period.

Street Lighting

The Code of Conduct requires distributors to report on the number of occasions that they have failed to repair faulty streetlights within:

- 5 business days for the metropolitan[49] area; and
- 9 business days for the regional area

Table 25 shows that 36% of metropolitan and 22% of regional streetlights were not repaired within the prescribed time scales. This is a significant increase from 2005/06.

Table 25: Street lighting repair performance (Code of Conduct)

	2005/06			2006/07		
Metropolitan	**Total Faults Logged**	**Faults Fixed in >5 days**	**Faults Fixed in >5 days (%)**	**Total Faults Logged**	**Faults Fixed in >5 days**	**Faults Fixed in >5 days (%)**
Horizon Power	N/A	N/A	N/A	314	101	31.2
Western Power	21,622	1,781	8.2	21,560	7,654[50]	35.5
Metropolitan Total	**21,622**	**1,781**	**8.2**	**21,874**	**7,755**	**35.5**
Regional	**Total Faults Logged**	**Faults Fixed in >9 days**	**Faults Fixed in >9 days (%)**	**Total Faults Logged**	**Faults Fixed in >9 days**	**Faults Fixed in >9 days (%)**
Horizon Power	60	0	0.0	304	41	13.5
Rottnest Island Authority	4	0	0.0	13	0	0.0
Western Power	2,255	236	10.5	1,026	253	24.7
Regional Total	**2,319**	**236**	**10.2**	**1,343**	**294**	**21.9**

The average time to repair faulty streetlights was 6.8 days for Horizon Power and 6.5 days for Western Power. It is difficult to compare this performance with 2005/06 because the Horizon Power data was not disaggregated into Metropolitan and Regional.

[49] Part 1.5 of the Code of Conduct defines the metropolitan and regional areas of the State

[50] Western Power has excluded repairs in May and June 2007. "*A change in supplier arrangements resulted in greatly decreased service level problems in the last quarter…. May and June service performance results, if accounted for in the annual results give a much distorted picture.*"

Complaints

The Rottnest Island Authority (**RIA**) has reported that they have recorded zero customer complaints in 2006/07. This is the second successive year that RIA has recorded zero complaints. Consequently the remainder of this section will focus on the complaints recorded by Horizon Power and Western Power.

Complaints Recorded under the Code of Conduct Framework

Table 26 shows that the total number of complaints received by distributors has risen by 69% from 2005/06.

Horizon Power recorded large increases in the number of reliability of supply, quality of supply and network assets complaints. Horizon Power reported the majority of the reliability complaints were caused by the installation and changeover of power stations at Exmouth and Hopetoun and feeder protection issues at Esperance.

Western Power recorded large increases in complaints about street lighting, network assets, administrative processes and "other" matters. The street lighting complaints were due to lights not being repaired within published service levels. Network charges and costs complaints centred on the cost of extensions or upgrades and being required to pay up front for work. Complaints falling into the "other" category make up 39.2% of all recorded complaints.

Table 26: Customer complaints received by distributors (Code of Conduct)

	2005/06		2006/07	
Complaint category	**Horizon Power**	**Western Power**	**Horizon Power**	**Western Power**
Reliability of supply	4	342	77	391
Quality of supply	0	108	26	49
Street lighting	5	147	10	1,485
Network assets	3	401	20	300
Network charges and costs	0	4	0	105
Administrative processes and customer service	4	222	0	266
Pre-payment meters	0	NA	0	NA
Other	0	1,361	0	1,672
Total complaints	**16**	**2,585**	**133**	**4,268**

Time Taken to Conclude a Complaint (Code of Conduct)

Table 27 shows that Horizon Power took between 4.4 and 4.6 days to conclude a complaint. Western Power took between 0.7 and 10.8 days to conclude a complaint with complaints about network assets (10.8 days) and network charges and costs (9.6 days) taking longer than average to resolve.

Table 27: Time taken to resolve complaints (Code of Conduct)

Complaint category	Horizon Power (days)	Western Power (days)
Reliability of supply	4.4	6.3
Quality of supply	4.4	0.7
Street lighting	4.5	1.3
Network assets	4.6	10.8
Network charges and costs	-	9.6
Administrative processes and customer service	-	5.4
Pre-payment meters	-	N/A
Other (%)	-	7.7

Compensation Payments

Part 14 of the Code of Conduct makes provision for compensation payments to non-contestable small use customers, who consume less than 50MWh per annum, for:

- failure to give 3 days notice of a planned interruption, at $20 per occurrence (Part 14.5); and
- failure to acknowledge or respond to a customer query or complaint within the prescribed timeframes at $20 per occurrence (Part 14.6).

Section 19 of the NQ&R Code makes provision for a payment of $80 to customers for supply interruptions exceeding 12 hours.

Table 28 provides details of the compensation payments made by distributors. The number of payments for supply interruptions exceeding 12 hours rose by 44% to 4,032 in 2006/07, representing a cost of $322,560 to distributors. The increase in compensation payments follows the trend in the number of customers who experienced long supply interruptions. Western Power also reported spending $10.2M addressing reliability and quality complaints in addition to compensation payments.

Table 28: Compensation payments under Part 14 of the Code of Conduct

	Number of payments for failure to give notice of a planned interruption		Number of payments for supply interruptions exceeding 12 hours		Number of payments for failure to respond to customer complaints within prescribed timeframes	
Retailer	2005/06	2006/07	2005/06	2006/07	2005/06	2006/07
Horizon Power	0	0	124	323	0	0
Rottnest Island Authority	0	0	0	0	0	0
Western Power	30	81	2,676	3,709	21	0

Western Power made 81 payments for failing to give the required notice of a planned interruption, up from 30 in 2005/06. Western Power commented that the increase was due, in part, to increased awareness of the payment scheme among customers.

There were no payments made for failure to respond to a customer query or complaint within prescribed time frames in 2006/07.

Contact Centre Performance

A customer contact 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.

Only Horizon Power and Western Power operate customer contact centres. Rottnest Island Authority provide telephone support to it's customers using simpler telephone systems that do not record performance statistics. Horizon Power has outsourced it's contact centre to Synergy, the largest electricity retailer in the State.

Horizon Power is unable to separate the retail calls from the distribution calls so the overall call centre performance (retail and distribution service calls) is provided in Table 29 as it is representative of the level of service experienced by customers with distribution service queries.

Table 29: Contact centre performance

Retailer	Total number of calls to an operator	Operator calls responded to within 30 seconds (%)	Calls abandoned (%)	Average wait before call is answered by an operator (seconds)
Horizon Power	111,919	70.0	9.4	26.5
Western Power	66,351[51]	46.0[52]	0.1	106.0
State Total	**178,270**	**60.9**	**8.1**	**-**

Only Horizon Power and Western Power operate customer contact centres. Rottnest Island Authority provide telephone support to it's customers using simpler telephone systems that do not record performance statistics. Horizon Power has outsourced it's contact centre to Synergy, the largest electricity retailer in the State.

Horizon Power is unable to separate the retail calls from the distribution calls so the overall call centre performance (retail and distribution service calls) is provided in Table 29 as it is representative of the level of service experienced by customers with distribution service queries.

Table 29 shows that there is a wide variation in the performance of the call centres operated by the 2 retailers. It is not possible to compare the call response performance because the Western Power measures calls answered within 15 seconds whereas

[51] Western Power outsources the handling of it's fault call service to Synergy. In 2006/07 the Synergy system recorded a total of 265,119 operator calls, of which 95% were answered within 30 seconds. The 2007/08 report will report on the combined performance of all service calls to Western Power.

[52] The Western Power call centre measured calls answered within 15 seconds. The 2007/08 report will provide a measure of calls answered within 30 seconds

Horizon Power measure against the 30 second benchmark in the 2002 SCONRRR Report.

Horizon Power commented that “the high call abandon rate may indicate that people residing in regional and remote locations are less likely to persist on call waiting than people in the metropolitan area.”

Appendix 1 – Additional Network Reliability Information for 2006/07

Network Reliability (SCONRRR)

The following definitions[53] 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;
  - exceed a SAIDI impact of 3 minutes;
  - 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 30: Western Power SAIDI Performance (SCONRRR)

SAIDI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	33	200	450	745
Distribution Network (Planned)	0.28	31	77	87
Distribution Network (Unplanned)	33	156	344	641
Normalised Distribution Network (Unplanned)	33	145	333	625

Table 31: Horizon Power SAIDI Performance (SCONRRR)

SAIDI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	-	1,092	336	3,970
Distribution Network (Planned)	-	-	-	-
Distribution Network (Unplanned)	-	-	-	-
Normalised Distribution Network (Unplanned)	-	123	303	2,798

[53] The definition is taken from the 2002 SCONRRR Report, Table 2 page 7

Table 32: Rottnest Island Authority SAIDI Performance (SCONRRR)

SAIDI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	-	-	212.42	-
Distribution Network (Planned)	-	-	-	-
Distribution Network (Unplanned)	-	-	-	-
Normalised Distribution Network (Unplanned)	-	-	212.42	-

SAIFI

Table 33: Western Power SAIFI Performance (SCONRRR)

SAIFI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	0.26	2.32	4.73	5.82
Distribution Network (Planned)	0.01	0.22	0.55	0.71
Distribution Network (Unplanned)	0.26	1.88	3.93	4.84
Normalised Distribution Network (Unplanned)	0.26	1.83	3.84	4.73

Table 34: Horizon Power SAIFI Performance (SCONRRR)

SAIFI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	-	2.62	6.90	17.03
Distribution Network (Planned)	-	-	-	-
Distribution Network (Unplanned)	-	-	-	-
Normalised Distribution Network (Unplanned)	-	1.77	6.63	15.44

Table 35: Rottnest Island Authority SAIFI Performance (SCONRRR)

SAIFI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	-	-	22.01	-
Distribution Network (Planned)	-	-	-	-
Distribution Network (Unplanned)	-	-	-	-
Normalised Distribution Network (Unplanned)	-	-	22.01	-

CAIDI

Table 36: Western Power CAIDI Performance (SCONRRR)

CAIDI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	128	86	95	128
Distribution Network (Planned)	31	139	142	123
Distribution Network (Unplanned)	132	83	87	133
Normalised Distribution Network (Unplanned)	132	85	87	132

Table 37: Horizon Power CAIDI Performance (SCONRRR)

CAIDI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	-	416	49	233
Distribution Network (Planned)	-	-	-	-
Distribution Network (Unplanned)	-	-	-	-
Normalised Distribution Network (Unplanned)	-	69	46	181

Table 38: Rottnest Island Authority CAIDI Performance (SCONRRR)

CAIDI Measure	CBD Feeders	Urban Feeders	Short Rural Feeders	Long Rural Feeders
Overall	-	-	9.65	-
Distribution Network (Planned)	-	-	-	-
Distribution Network (Unplanned)	-	-	-	-
Normalised Distribution Network (Unplanned)	-	-	9.65	-

Appendix 2 - Network Asset Information

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

Table 39: SCONRRR Distribution Network Asset Descriptions by Distributor (as at 30 June 2007)

Asset Type	Asset Sub-Type	Horizon Power	Rottnest Island Authority	Western Power
Number of metered supply points	CBD	-	-	4,657
	Urban	11,614	-	599,465
	Short Rural	23,206	189	193,553
	Long Rural	2,023	-	84,586
Feeder Length (km)	CBD	-	-	204
	Urban	217	-	16,219
	Short Rural	2,741	44.8	15,970
	Long Rural	3,111	-	51,234
Number of Transformers	Sub-transmission	-	2	-
	Distribution	3,662	14	-
Total Capacity of Transformers (MVA)	Sub-transmission	-	2.0	59,530
	Distribution	483	3.8	6,051
Number of street lights		12,082	13	201,635
Number of Poles		54,618	80	668,027