Annual Performance Report - Energy Distributors 2017/18

April 2019

Economic Regulation Authority
WESTERN AUSTRALIA

D200638

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Executive summary

Each year, the Economic Regulation Authority publishes a report on the performance of energy distributors in Western Australia. This report includes information on the size of the market, reliability of supply, gas consumption, streetlight repairs, complaints, and other service standards.

By measuring and reporting this information, the ERA hopes to encourage transparency and accountability, provide an incentive for distributors to improve performance, and identify emerging issues that may warrant further investigation.

New connections

In 2017/18, growth in new electricity and gas connections declined for the third consecutive year, reflecting an extended flat period for property development, and the economy more generally. Compared to 2016/17, new connections were down 22 per cent on Western Power's network and 19 per cent on ATCO Gas Australia's network.

Network reliability standards

As a condition of their licences, distributors must comply with the *Electricity Industry (Network Quality and Reliability of Supply) Code 2005.*[1] The Code requires distributors to report on both planned and unplanned interruptions, regardless of what caused an interruption. This differs from other reliability measurement frameworks that are commonly used in Australia, such as the framework established by the Steering Committee on National Regulatory Reporting Requirements (SCONRRR), which require distributors to report only on unplanned interruptions that are caused by factors under their control, excluding unavoidable events like storms, bushfires and generator failures. The Code's reliability standards were established in 2005 and may no longer be suitable. For example, the reporting under the Code could create uncertainty when a distributor is deciding where to invest in its network to improve reliability. The ERA recommends that policy-makers review the standards and investigate alternatives that may better meet the needs of distributors and customers.

Western Power has previously advised the ERA that it finds it difficult to comply with the reliability standards set in the Code. As well as differing from the SCONRRR framework, the Code standards exceed the service standard benchmarks set in Western Power's network Access Arrangement, which are based on recent performance. This means Western Power has two sets of standards to comply with that are inconsistent, causing operational and decision-making difficulties. Western Power believes the Code's standards should be revised to adopt the approach in its Access Arrangement.[2]

Network reliability performance

Horizon Power's and Western Power's network reliability performance in 2017/18 was considerably better when measured using the SCONRRR framework's indicators rather than the Code's indicators.

In the past 10 years, Western Power has never met the Code's standard for the average total duration of supply interruptions for customers (SAIDI) in urban or rural areas. If Western Power had reported normalised interruptions only in 2017/18, as allowed under the SCONRRR framework, it would have comfortably met the Code's SAIDI standard in urban areas of 160

[1] The Code is approved by the State Government (Minister for Energy).

[2] Western Power, 2018, *Electricity Industry (Network Quality and Reliability of Supply) Code 2005: Annual Reliability and Power Quality Report for the year ended 30 June 2018*, page 7.

minutes per year. However, under the Code, Western Power reported a SAIDI value for urban areas of 247 minutes in 2017/18.

In 2017/18, Horizon Power reported its best SAIDI performance in 10 years, but still failed to meet the Code's standard.

Streetlight fault repairs

Together, Western Power, Horizon Power and the Rottnest Island Authority maintain more than 280,000 streetlights in Western Australia. This report provides streetlight performance data based on benchmarks set by the ERA, but there is no regulatory oversight of streetlight fault repairs in Western Australia. Timeframes for repairing faults are not prescribed in legislation, and distribution licences cannot currently specify service levels for repairing streetlight faults.

While the number of streetlight faults has not changed substantially over the past 10 years, changes that Horizon Power and Western Power have made recently to how they manage faults has resulted in delays to repairs.

Western Power's regional streetlight repair performance deteriorated substantially in 2017/18, with almost 20 per cent of streetlights not repaired on time (within nine business days), compared to 4.5 per cent the previous year. Western Power attributed the increase to using internal work crews instead of contractors for regional streetlight repairs, which delayed streetlight repairs due the same crews also performing other maintenance and emergency repair work.

Horizon Power's performance also deteriorated, with 20 per cent of its regional streetlights not repaired on time. This was a similar level of performance to recent years. Horizon Power changed the way it allocated resources to streetlight maintenance to make it more cost-efficient. For example, where it can, Horizon Power will wait until there are several faulty streetlights in the same town before allocating a crew to do the repairs, rather than send a crew out to repair a single streetlight.

Horizon Power's smart meter program

In 2016, Horizon Power replaced its aging electricity meters with smart meters, which improved its service delivery to customers.

Horizon Power has reported a substantial increase in disconnections and reconnections in the past two years, as the new smart meters allow it to disconnect and reconnect properties remotely. Prior to the installation of smart meters, it was not always cost-effective for Horizon Power to visit a remote property to carry out a disconnection or reconnection.

Despite the substantial increase in reconnections on Horizon Power's distribution systems in the past two years, they have all been completed on time, because the smart meters enable customers to be reconnected remotely in minutes, rather than days.

Since the installation of smart meters, Horizon Power has reported receiving fewer complaints about customer service, which may be due to improved outcomes, such as faster reconnection times.

Gas consumption

In 2016/17, household gas consumption was at a six-year high due to unusually cold weather. In 2017/18, major distributor ATCO Gas Australia reported an 8.1 per cent decrease in residential gas consumption and a 3.4 per cent decrease in business gas consumption due to warmer weather.

Introduction

The ERA is the independent economic regulator in Western Australia, responsible for administering the licensing schemes for energy distributors.[3]

The ERA reports on energy distributors' performance under its obligation to monitor and report to the Minister for Energy on the operation of the licensing schemes.[4] This is the eighth annual report on distributor performance.[5]

Performance reporting enhances transparency and accountability, and promotes integrity in the market. It also provides incentives for distributors to improve performance and helps to identify emerging issues for further investigation.

Performance reporting obligations only apply to distributors with small use customers, as defined under the relevant electricity and gas licensing legislation. 'Small use customers' are residential and small business customers whose consumption is less than 160 megawatt hours of electricity, or one terajoule of gas per year.

The report is structured as follows:

- Energy distribution market overview: the overall number of electricity and gas distributors, how many of those distributors supply small use customers, the number of connections on each distribution system and the timeliness of customer reconnections.[6]
- Reliability: supply interruptions on electricity and gas distribution systems. Electricity distribution system reliability is reported against the measures in the *Electricity Industry (Network Quality and Reliability of Supply) Code 2005* and the national framework for electricity reporting (known as the SCONRRR framework).[7]
- Gas consumption and unaccounted-for gas: gas supplied to residential and business customers, and the difference in the amount of the gas entering gas distribution systems and the amount that is metered at supply points.
- Gas leaks: gas main leaks, customer connection leaks and meter leaks on gas distribution systems.
- Streetlight repairs: the number of streetlights in metropolitan and regional areas, what proportion of those lights were repaired during the reporting period, and how many repairs were completed within the permitted timeframe.
- Complaints: customer satisfaction with their distributor measured by the number of complaints and the effectiveness of retailers' complaint handling procedures, and a breakdown of the technical quality of service complaints and their cause(s).
- Call centre performance: ease of customer contact with their distributor by telephone using three industry standard responsiveness measures.

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3 The licensing scheme for electricity distributors is in Part 2 of the *Electricity Industry Act 2004* (Electricity Act) and the licensing scheme for gas distributors is in Part 2A of the *Energy Coordination Act 1994* (Gas Act).

4 Section 38 of the Electricity Act and section 11AA of the Gas Act.

5 Prior to 2010/11, the ERA published separate reports on electricity distributors and gas distributors.

6 Reconnection after supply has been disconnected at the request of the retailer for non-payment of a bill.

7 The framework is described in the *National Regulatory Reporting for Electricity Distribution and Retailing Businesses, Utility Regulators Forum*, March 2002. The document was published by the Steering Committee on National Regulatory Reporting Requirements (SCONRRR).

- Service standard payments: the number of payments made by electricity distributors for wrongful disconnection, failure to give 72 hours' notice of a planned supply interruption, supply interruptions that exceed 12 hours and failing to provide a timely response to complaints.

1. Energy distribution market overview

This section looks at the:

- total number of licensed electricity and gas distributors[8]
- number of licensed distributors supplying small use electricity and gas customers
- number of small use electricity and gas customer connections
- timeliness of electricity and gas reconnections.

1.1 Energy distributors

Table 1 shows the number of licensed electricity and gas distributors.

Table 1: Number of licensed electricity and gas distributors

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Electricity						
Licensed distributors	6	7	7	7	7	7
Distributing to small use customers	3	3	3	3	3	3
Gas[9]						
Licensed distributors	3	3	3	3	3	3

Electricity distribution licensees that supply small use customers are:

- Horizon Power
- Rottnest Island Authority
- Western Power.

Holders of gas distribution licences are:

- ATCO Gas Australia (ATCO)
- Wesfarmers Kleenheat Gas (Kleenheat)
- Esperance Power Station.

The number of licensed electricity and gas distributors has been stable since 2005, when the ERA assumed responsibility for the licensing of electricity and gas distribution.

The number of electricity distributors licensed to supply small use customers has remained unchanged since the licensing scheme commenced in 2006. The ERA took over responsibility for licensing gas distributors from the former Office of Energy in 2005.[10] At that time, there were three licensed gas distributors who are all still licensed today.

8 This includes electricity distributors that supply large use customers only (customers whose annual consumption is more than 160 megawatt hours).

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

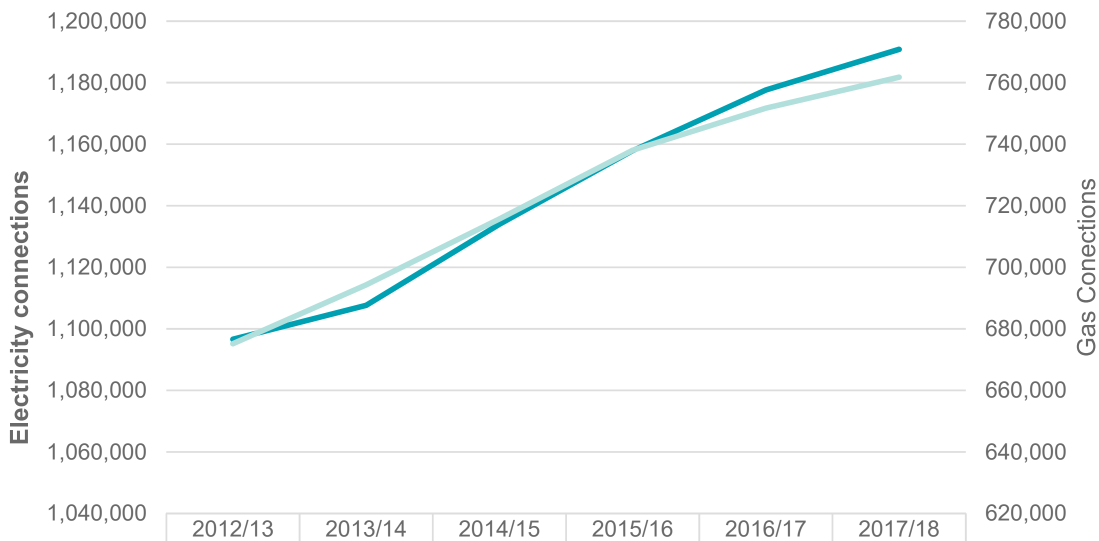
10 Office of Energy responsibilities are now undertaken by the Department of Treasury, Public Utilities Office.

1.2 Customer connections

Throughout this report, the term 'customer connection' means 'small use customer connection'.

Figure 1 shows the total number of connections on electricity and gas distribution systems.

Figure 1: Total number of small use electricity and gas customer connections



	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Electricity	1,096,625	1,107,623	1,134,016	1,157,891	1,177,610	1,190,817
Gas	675,150	694,286	715,767	738,080	751,728	761,788

1.3 Connections on electricity distribution systems

Table 2 shows the total number of connections by year on each electricity distributor's system.

Table 2: Electricity connections by distributor

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Horizon Power	45,866	46,508	47,832	47,168	48,748	48,981
Rottnest Island Authority	527	527	527	527	528	528
Western Power	1,050,232	1,060,588	1,085,657	1,110,196	1,128,334	1,141,308
Total	**1,096,625**	**1,107,623**	**1,134,016**	**1,157,891**	**1,177,610**	**1,190,817**

Electricity distributors are subject to timeliness requirements when connecting new premises. The *Electricity Industry (Obligation to Connect) Regulations 2005* prescribe the timeframes for establishing a new connection to an electricity distribution system.

Table 3 shows the number of new connections on electricity distribution systems and the proportion of those connections not established on time over the past two years. This is the number of new connections established during the reporting period, rather than the net increase in connections, which can be calculated using the data in Table 2.

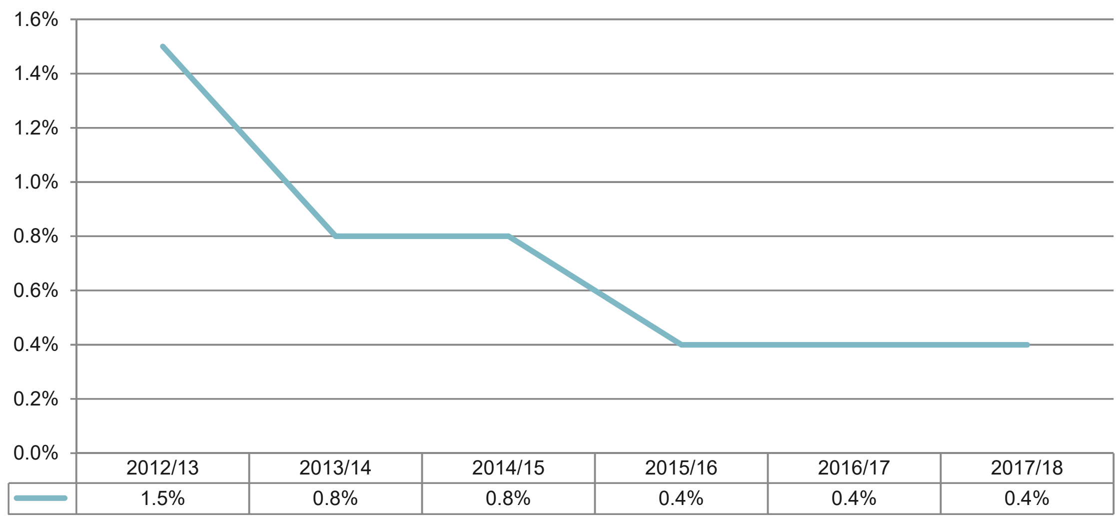
Western Power attributed the 22 per cent decrease in new connections on its network in 2017/18 to a decline in property development and the removal of a subsidy for converting an above ground connection to an underground connection, which contributed to a decrease in new subdivisions during the reporting period.

Table 3: New connections on electricity distribution systems

	2016/17			2017/18		
	New connections	Connections not on time	% of connections not on time	New connections	Connections not on time	% of connections not on time
Horizon Power	549	0	0.0	381	0	0.0
Rottnest Island Authority	1	0	0.0	0	0	0.0
Western Power	25,029	91	0.4	19,406	71	0.4
Total	**25,579**	**91**	**0.4**	**19,787**	**71**	**0.4**

Figure 2 shows the percentage of late connections to total new connections on the Western Power distribution system over the past six years.

Figure 2: Percentage of late connections on the Western Power distribution system



1.4 Connections on gas distribution systems

Table 4 shows the number of connections on each gas distributor's system.

Table 4: Gas connections by distributor

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ATCO	673,878	692,988	714,488	736,746	750,339	760,355
Esperance Power Station	332	342	357	376	383	385
Kleenheat	940	956	922	958[11]	1,006	1,048
Total	**675,150**	**694,286**	**715,767**	**738,080**	**751,728**	**761,788**

Table 5 shows the number of new gas connections that were provided after the date agreed with the customer.

Table 5: New connections on gas distribution systems

	2016/17			2017/18		
	New connections	Connections not on time	% of connections not on time	New connections	Connections not on time	% of connections not on time
ATCO	16,814	0	0.0	13,555	3	0.0
Esperance Power Station	9	0	0.0	2	0	0.0
Kleenheat	48	1	2.1	44	0	0.0
Total	**16,871**	**1**	**0.0**	**13,601**	**3**	**0.0**

1.5 Reconnections on electricity and gas distribution systems

Since 2012/13, electricity and gas distributors have been required to report on their performance reconnecting supply to a customer's premises in accordance with the permitted timeframes.

The timeframes for electricity distributors are in clause 8.2 of the *Code of Conduct for the Supply of Electricity to Small Use Customers 2018* and the timeframes for gas distributors are in clause 8.2 of the *Compendium of Gas Customer Licence Obligations*.

Table 6 shows the number of reconnections on electricity and gas distribution systems.

Most distributors perform reconnections at the request of retailers, and therefore do not know the reason for the reconnection. Horizon Power is different, because it is also the retailer for customers on its distribution systems. The substantial increase in reconnections performed by Horizon Power over the past two years is mostly due to the replacement of its existing meters with smart meters. Prior to the installation of smart meters it was often not cost effective for Horizon Power to disconnect or reconnect a property manually. Properties can now be

[11] This was erroneously reported as 956 by Kleenheat in 2015/16.

disconnected and reconnected remotely via the smart meter, making it easier and more cost effective to disconnect or reconnect a property, for example, when a customer changes address, or is disconnected for failure to pay a bill..

Table 6: Reconnections on electricity and gas distribution systems

Reconnections on electricity systems					Reconnections on gas systems				
	2014/15	2015/16	2016/17	2017/18		2014/15	2015/16	2016/17	2017/18
Horizon Power	3,889	1,527	10,158	9,084	ATCO	7,112	10,875	11,212	12,324
Rottnest Island Authority	0	0	0	0	Esperance Power Station	30	5	0	6
Western Power	16,740	15,202	22,313	30,485	Kleenheat	10	8	6	5
Total	**20,629**	**16,729**	**32,471**	**39,569**	**Total**	**7,152**	**10,888**	**11,218**	**12,335**

Table 7 shows the number and percentage of reconnections on electricity and gas distribution systems that were not provided on time.[12] Despite the substantial increase in reconnections on Horizon Power's distribution systems in the past two years, it performed them all on time, mainly due to the ability to perform remote reconnections on its smart meters.

Table 7: Reconnections not provided on time

	2016/17 Reconnections			2017/18 Reconnections		
	Number	Number not on time	% not on time	Number	Number not on time	% not on time
Electricity						
Horizon Power	10,158	0	0.0	9,084	0	0.0
Rottnest Island Authority	0	0	0.0	0	0	0.0
Western Power	22,313	222	1.0	30,485	205	0.7
Gas						
ATCO	11,212	1	0.0	12,324	7	0.1
Esperance Power Station	0	0	0.0	6	0	0.0
Kleenheat	6	0	0.0	5	0	0.0

[12] The *Code of Conduct for the Supply of Electricity to Small Use Customers 2018* requires distributors to reconnect a customer within one business day (metro) or five business days (regional) of receiving the request from the retailer.

2. Electricity distribution system reliability

Electricity distributors are required to report on reliability under two regulatory frameworks:

- *Electricity Industry (Network Quality and Reliability of Supply) Code 2005 (*NQ&R Code)
- Steering Committee on National Regulatory Reporting Requirements (SCONRRR) framework.[13]

2.1 NQ&R code specific reliability measures

The NQ&R Code requires distributors to report on the length and frequency of supply interruptions, including:

- The number of customer premises that have had interruptions that exceed 12 hours continuously (referred to as an extended interruption).
- The number of customer premises that have had more than:
  - Nine interruptions per year in the Perth Central Business District (CBD)[14] and urban areas.
  - 16 interruptions per year in all other areas of Western Australia.

2.2 Shared NQ&R code and SCONRRR framework reliability measures

The SCONRRR framework and NQ&R Code both measure distribution system reliability through three main performance indicators:[15] [16]

- System Average Interruption Duration Index (SAIDI): the total duration of supply interruptions for the average customer on the network.
- System Average Interruption Frequency Index (SAIFI): how often the average customer had a supply interruption.
- Customer Average Interruption Duration Index (CAIDI): the total duration of supply interruption for only those customers who had an interruption during the reporting period.

The standard calculation of SAIDI, SAIFI and CAIDI includes only sustained supply interruptions, which are more than one minute in duration. Unusually, the NQ&R Code requires distributors to include both planned and unplanned interruptions regardless of what caused

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13 The framework is described in the *National Regulatory Reporting for Electricity Distribution and Retailing Businesses, Utility Regulators Forum*, March 2002. The document was published by the Steering Committee on National Regulatory Reporting Requirements (SCONRRR).

14 Central Business District, which is the area supplied by the Milligan Street Zone Substation and the Hay Street Zone Substation, both operated by Western Power.

15 The definition of the three measures is in Standard IEEE 1366-2003 - Guide for Electric Power Distribution Reliability Indices, Institute for Electrical and Electronic Engineers.

16 The NQ&R Code does not use the terms SAIDI, SAIFI and CAIDI. See Appendix 4 for more information.

an interruption. This differs from other reliability measurement frameworks that are commonly used, such as the SCONRRR framework.[17]

The SCONRRR framework requires distributors to report on the type of interruption and the type of feeder on which that interruption occurred.

The type of the interruption has four classifications: Overall, Planned Interruptions, Unplanned Interruptions and Normalised Unplanned Interruptions.[18] There are four types of feeder: CBD, Urban, Short Rural and Long Rural.[19]

2.3 System reliability standards

Section 13(2) of the NQ&R Code includes standards for the average total length of interruptions[20] in the three defined areas of the State:[21]

- Perth CBD – 30 minutes
- urban areas other than the Perth CBD – 160 minutes[22]
- any other area of the State (rural areas) – 290 minutes.[23]

The standard for each area takes into account the level of interconnection and available capacity factored into the design of the distribution systems. For SAIDI, SAIFI and CAIDI, the NQ&R Code requires a distributor to report its annual performance and its average performance over the past four years. The NQ&R Code reliability data in this report is the four-year average data.

Western Power and the other distributors are required to comply with the NQ&R Code as a condition of their electricity distribution licence.

The SCONRRR framework does not include any reliability standards. It is left to the relevant state or territory regulator to set the standards for the distributors they regulate. Western Power is the only distributor in Western Australia subject to reliability performance standards other than the NQ&R Code, which are in its access arrangement service standard benchmarks.[24]

Publishing both the NQ&R Code and SCONRRR reliability data for distributors provides useful information about the performance of their distribution systems over time. The SCONRR data

17 Most reliability reporting frameworks require distributors to report on unplanned interruptions that are caused by factors considered to be within their control. This means that unplanned interruptions caused by severe weather events, third party actions, generation outages and transmission network outages are excluded.

18 Appendix 4 has more information about the definitions of interruption categories.

19 The definition of each feeder type is in Table 53, Appendix 4.

20 This is the equivalent to the SAIDI for the group of feeders supplying customers in each geographical area.

21 See Appendix 4 for more information about how the standard is calculated.

22 These areas are defined in section 3 of the NQ&R Code and include the Perth metropolitan region, Albany, Bunbury, Geraldton, Kalgoorlie and Mandurah.

23 'Other areas of the State' are referred to as 'rural areas' in this report for consistency with the SCONRRR framework's feeder classifications of 'short rural' and 'long rural'.

24 The access arrangement requires Western Power to meet the service levels defined in the service standard benchmarks, which include benchmarks for distribution system reliability. More information is available on the ERA website: https://www.erawa.com.au/electricity/electricity-access/western-power-network.

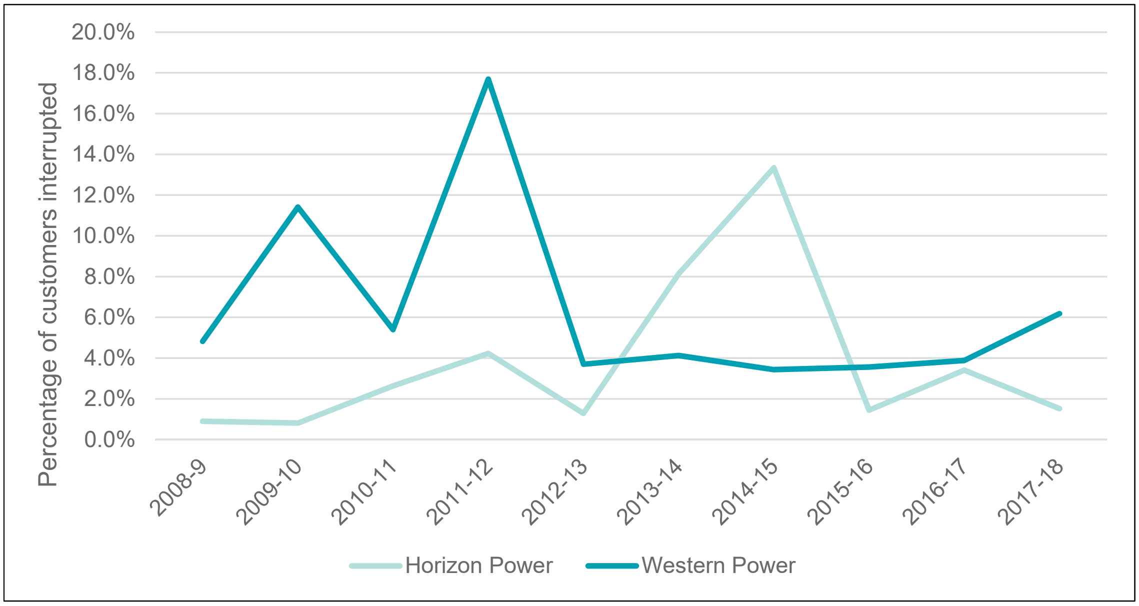
also allows distributor reliability performance to be compared with other distributors, including distributors in other jurisdictions.[25]

2.4 Distribution network reliability – NQ&R code

2.4.1 Extended interruptions

Figure 3 shows the percentage of customer premises on the Horizon Power and Western Power distribution systems that have had an extended interruption.[26]

Figure 3: Horizon Power and Western Power extended interruptions



Because of unpredictable environmental factors like severe storms and bush fires, the number of customers affected by extended interruptions varies each year.

The number of customer premises on Western Power's distribution system that experienced extended interruptions in 2017/18 was a six-year high of 6.2 per cent (70,490 premises). Western Power attributed the increase to storm damage to overhead power lines and planned maintenance in urban areas. However, this is substantially fewer interruptions than the 2011/12 peak, when 179,694 premises experienced an interruption on Western Power's distribution system due to storms and bushfires.

Over the past 10 years, Horizon Power has reported fewer extended interruptions than Western Power (as a percentage of the total connections on the distribution system), with one notable exception in 2014/15, when 13.3 per cent of Horizon Power customer premises experienced an extended interruption. The majority of interruptions that year were caused by tropical cyclones Olwyn and Quang.

25 The reliability of distributors in the National Electricity Market is calculated using a framework that is similar to the SCONRRR framework. See Appendix 4 for more information.

26 The Rottnest Island Authority is excluded from Figure 3, because the number of extended interruptions on their system is small compared to Horizon Power and Western Power. The data for the Rottnest Island Authority, Horizon Power and Western Power can be found in Appendix 3, Table 35.

2.4.2 Multiple interruptions

Figure 4 shows the number of customers that had more than the permitted number of interruptions (nine) in the Perth CBD and urban areas, which are both supplied exclusively by Western Power.

Figure 4: Multiple supply interruptions on electricity distribution systems – CBD and Urban

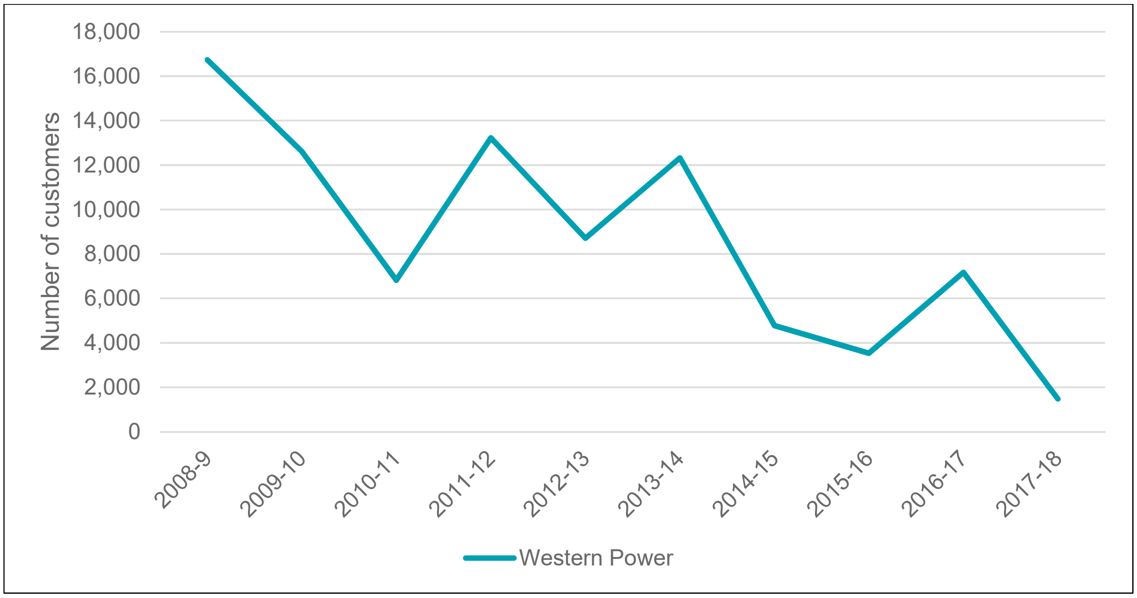
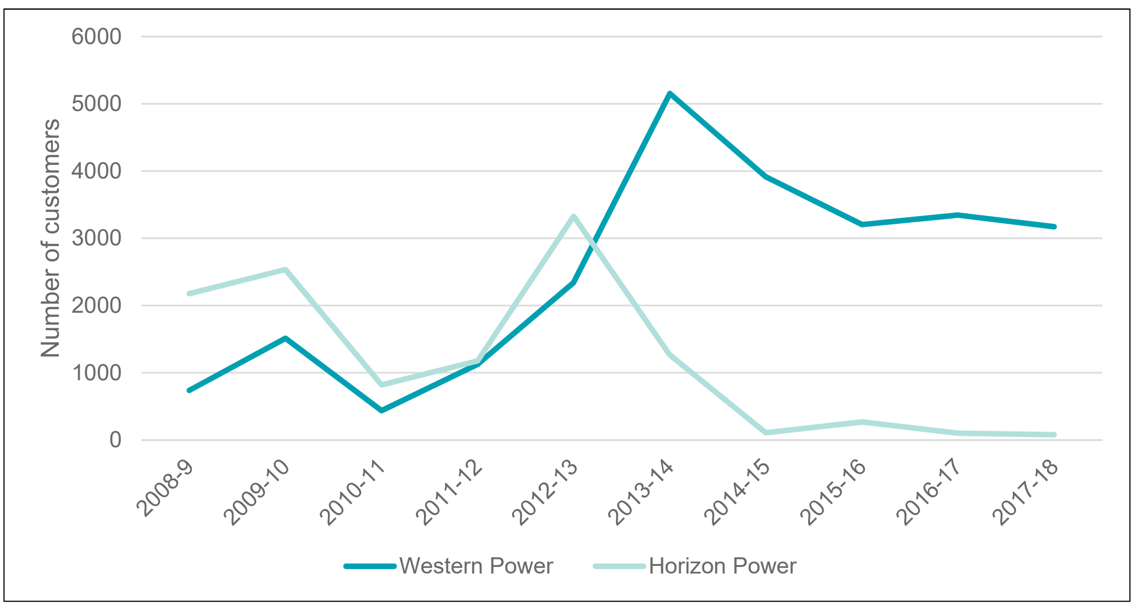


Figure 5 shows the number of customers that had more than the permitted number of interruptions (16) in rural areas, where all three distributors have distribution systems.[27]

Figure 5: Multiple supply interruptions on electricity distribution systems - Rural



[27] The Rottnest Island Authority has been excluded from Figure 5, because it has not reported any excess interruptions to customer premises in the past ten years.

Because of unpredictable environmental factors like severe storms and bush fires, the number of customers experiencing more than the permitted number of interruptions varies each year.

The number of customers experiencing more than the permitted number of interruptions fell 79 per cent from 2016/17 to 2017/18 in the combined Perth CBD and urban areas. Western Power attributed the improvement in reliability to routine and targeted maintenance, and network upgrades.

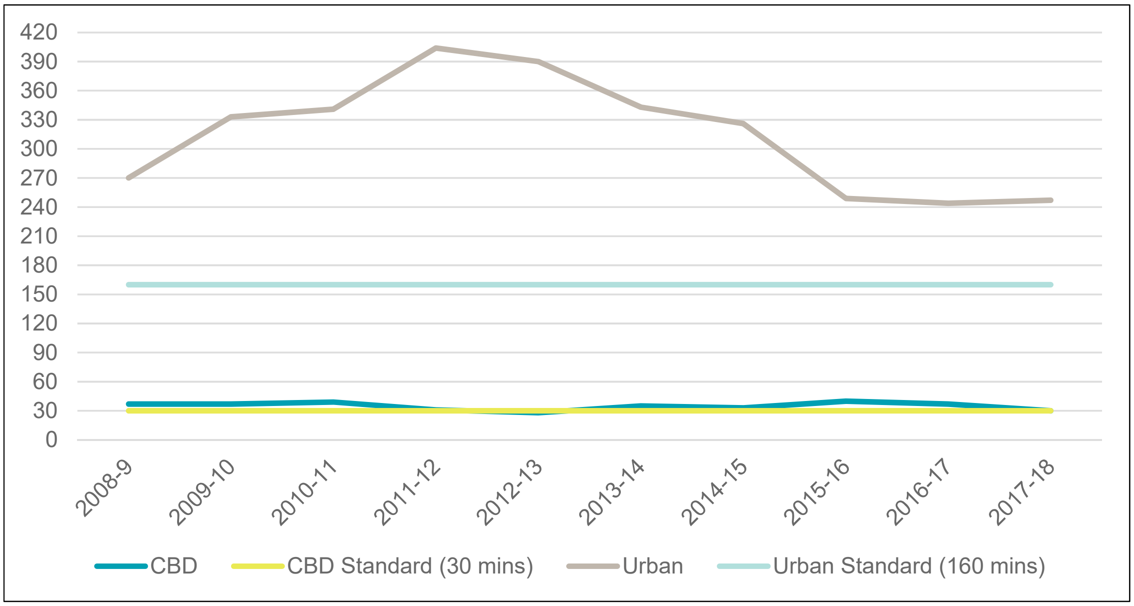
Horizon Power continues on the trend started in 2014/15 of reporting fewer multiple interruptions on its distribution systems. There was a substantial decrease in the number of multiple interruptions on Horizon Power's distribution systems between 2012/13 and 2014/15. In 2013/14, Horizon Power reported that it had made upgrades to its Wyndham and Onslow power stations that contributed to the improved performance.

2.4.3 System reliability

2.4.3.1 System Average Interruption Duration Index

Western Power is the only distributor that supplies customers in the Perth CBD and urban areas. Figure 6 shows the average total length of interruptions per connection (SAIDI) in these areas, and compares them with the applicable standards in section 13 of the NQ&R Code.

Figure 6: Average total length of interruptions in CBD and urban areas (minutes)



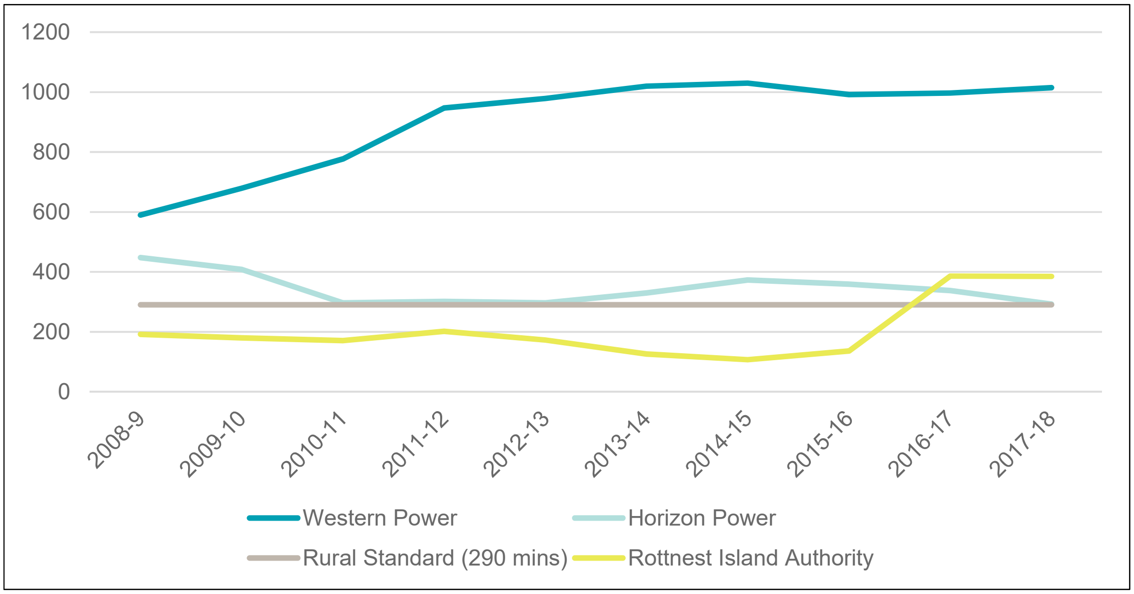
While the Perth CBD system's performance met the NQ&R Code's SAIDI standard in 2017/18, Western Power's urban and rural systems did not.

In the past 10 years, Western Power has not met the NQ&R Code's SAIDI standard for urban areas of 160 minutes. While Western Power's performance in 2017/18 of 247 minutes was its best in 10 years, it was still substantially above the standard. Western Power attributed the improved performance to routine and targeted maintenance, and network upgrades.

The NQ&R Code does not allow a distributor to normalise data to remove planned interruptions and unplanned interruptions caused by events outside the distributor's control, such as major weather events. Western Power advised that the requirement to include these interruptions resulted in it not meeting the NQ&R Code standards.

Figure 7 shows the average total length of interruptions per connection on distribution systems located in rural areas for each distributor.

Figure 7: Average total length of interruptions in rural areas (minutes)



In the past 10 years, Western Power has not met the NQ&R Code's standard for rural systems and its performance has deteriorated. Interruptions caused by major weather events have been a factor in Western Power's performance. As can be seen in Figures 11 and 12 later in the report, Western Power's SAIDI performance improves substantially when it is normalised.

In the past 10 years, the Rottnest Island Authority is the only distributor to meet the NQ&R Code's 290-minute standard for rural areas. However, it has not met the standard for the past two years.

The data for Figures 6 and 7 (covering the past six years) is in Tables 38 (CBD), 39 (urban) and 40 (rural) in Appendix 3.

2.4.3.2 System Average Interruption Frequency Index

Figure 8 shows the average total frequency of interruptions per connection per year (SAIFI) over the last 10 years for customers in the Perth CBD and urban areas, which are supplied exclusively by Western Power

Over the 10 years, Western Power's performance in urban areas has made gradual improvements each year. This corresponds with the improvements to its SAIDI performance since 2011/12.

The data for the last six years is in Tables 38 and 39 in Appendix 3.

Figure 8: Average frequency of interruptions in CBD and urban areas (interruptions per year)

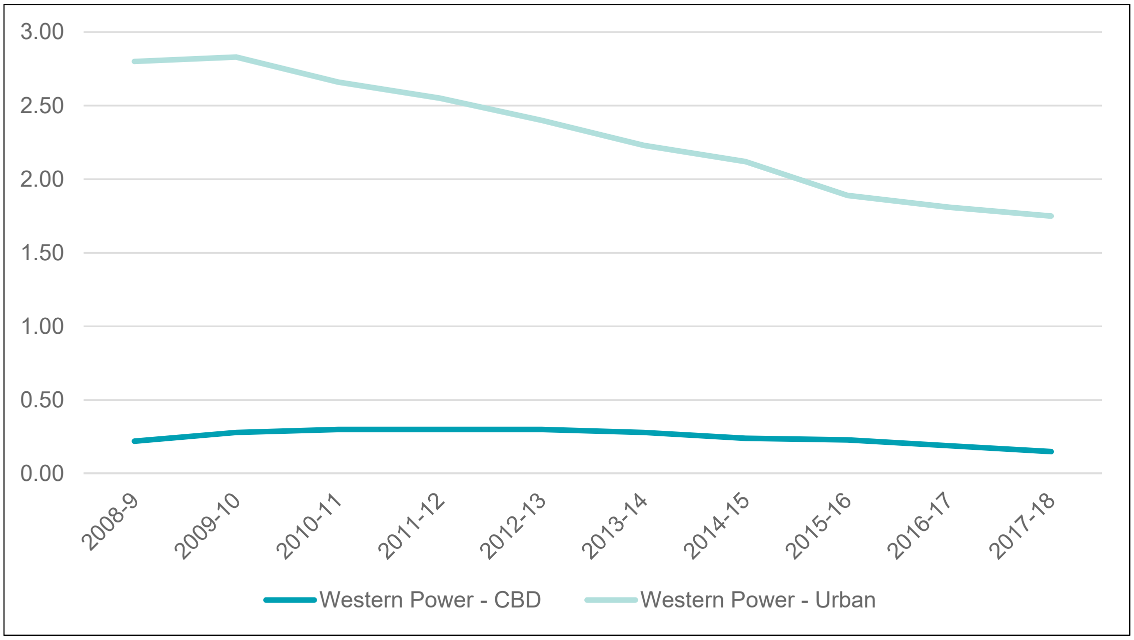
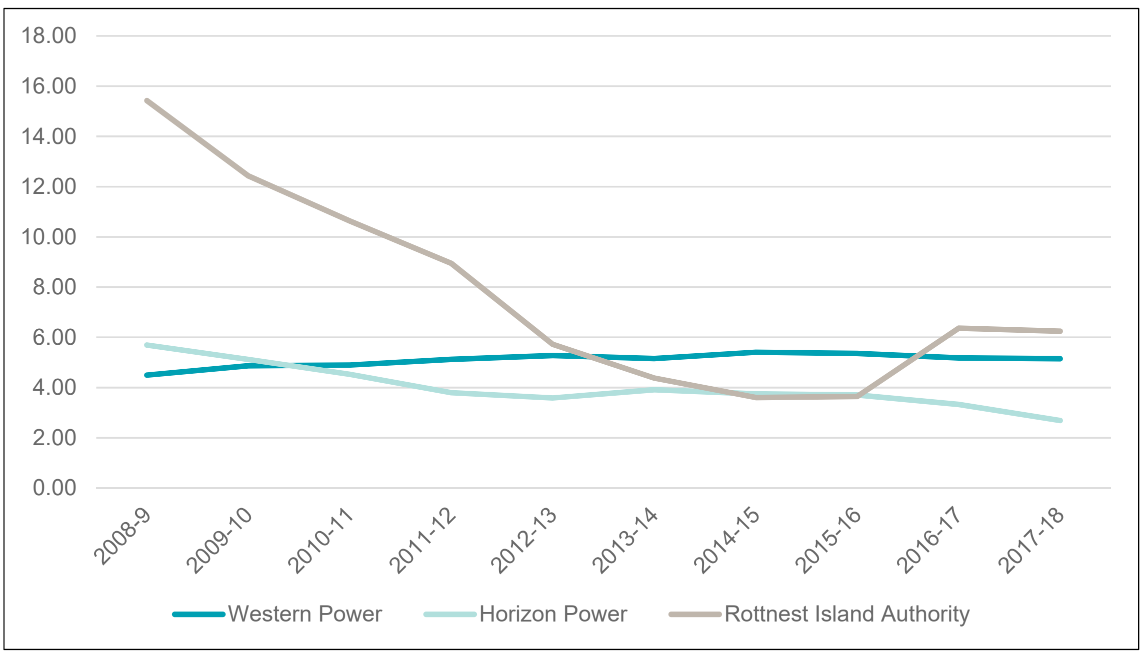


Figure 9 shows the average total frequency of interruptions per connection per year (SAIFI) over the last 10 years for customers in rural areas for Horizon Power, Western Power and the Rottnest Island Authority.

Figure 9: Average frequency of interruptions in rural areas (interruptions per year)



Horizon Power's performance has improved gradually over the past 10 years, while Western Power's performance has remained relatively constant.

The Rottnest Island Authority's performance was improving year on year until 2016/17, when it reported a high average frequency of interruptions due to planned interruptions on its distribution system to connect new generation assets and unplanned interruptions caused by an underground cable failure (it reported a SAIFI value of 15.94 for that year).

The high SAIFI value in 2016/17 has meant that the four-year average performance deteriorated in 2016/17 and 2017/18 (the NQ&R Code's SAIDI, SAIFI and CAIDI values are reported as four-year averages).

Relevantly, under the SCONRRR framework, while the Rottnest Island Authority reported an overall SAIFI value of 3.14 in 2017/18, when this is normalised it reduces to zero.

2.5 System reliability – SCONRRR framework

2.5.1 System Average Interruption Duration Index

Table 8 shows the overall and normalised SAIDI values by feeder class for each distributor in 2017/18. SAIDI measures the total length (in minutes) of all supply interruptions for the average customer. The Total Network SAIDI is a weighted average value with the weighting based on the proportion of the total customers served by each of the distribution system feeder types.

Table 8: Overall and normalised SAIDI by electricity distributor

Overall SAIDI (minutes per annum)					
	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	152	N/A	62	111	1164
Rottnest Island Authority	59	N/A	N/A	59	N/A
Western Power	410	11	263	452	1442
Normalised SAIDI (minutes per annum)					
	Total Network	CBD	Urban	Short Rural	Long Rural
Horizon Power	83	N/A	56	53	750
Rottnest Island Authority	0	N/A	N/A	0	N/A
Western Power	164	1	103	148	685

N/A – The distributor does not operate feeders of this type

Figures 10, 11 and 12 compare the past 10 years of overall and normalised SAIDI values for the urban, short rural and long rural feeder classes respectively for Horizon Power and Western Power.

Overall and normalised SAIDI data for 2017/18 for all feeder classes is in Table 42 in Appendix 3 (including the Rottnest Island Authority).

Figure 10: Overall and normalised SAIDI by electricity distributor - Urban

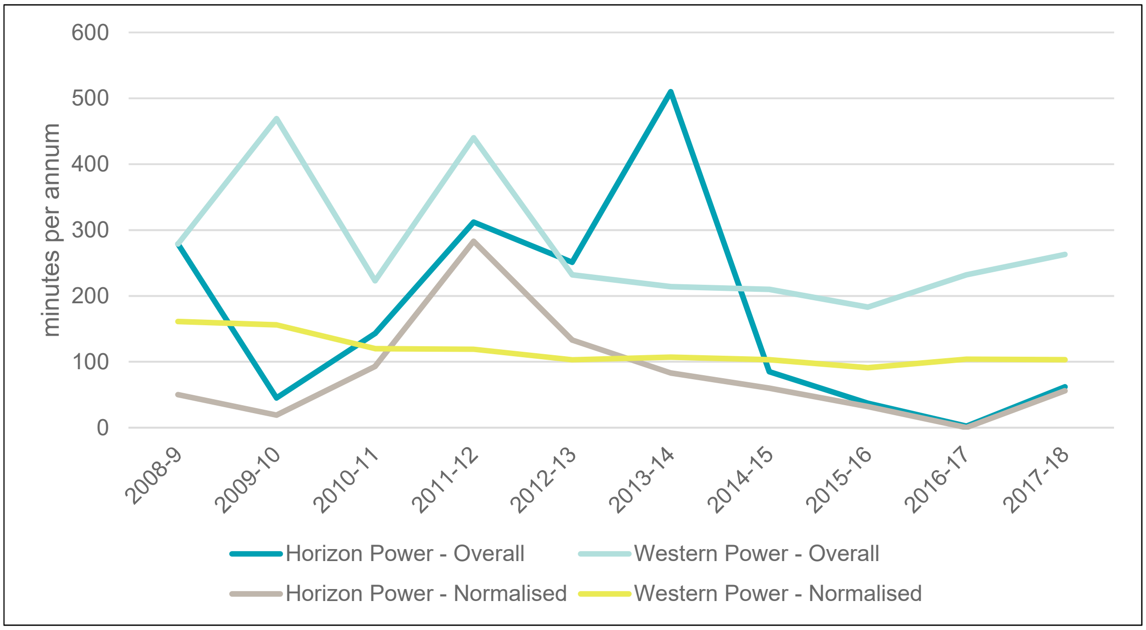


Figure 11: Overall and normalised SAIDI by electricity distributor - Short Rural

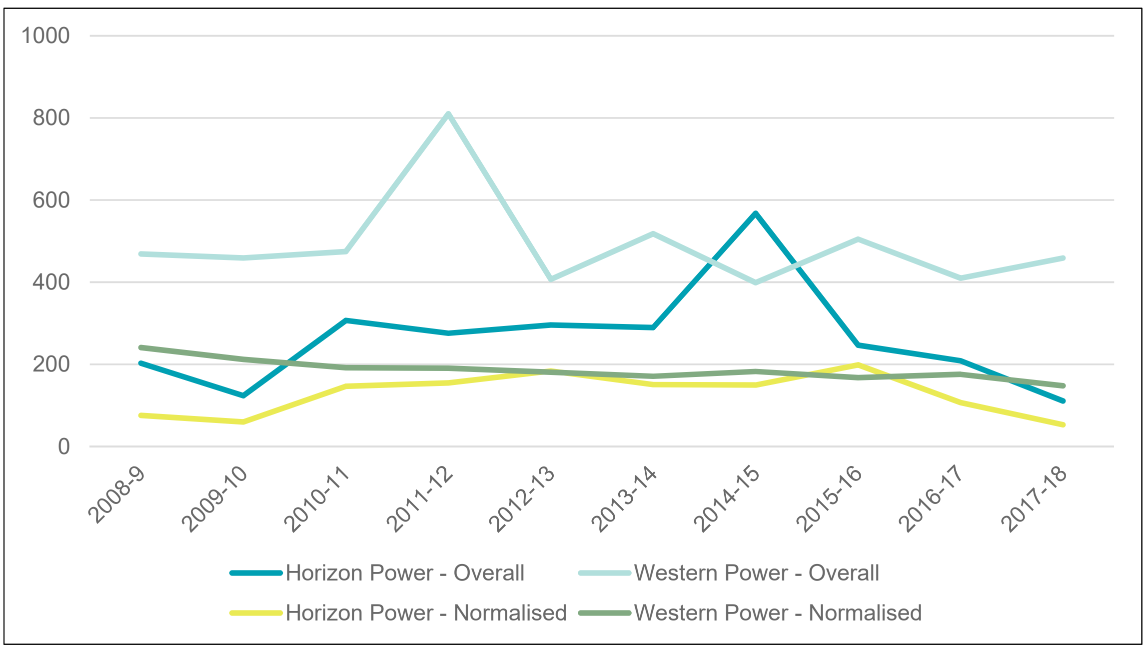
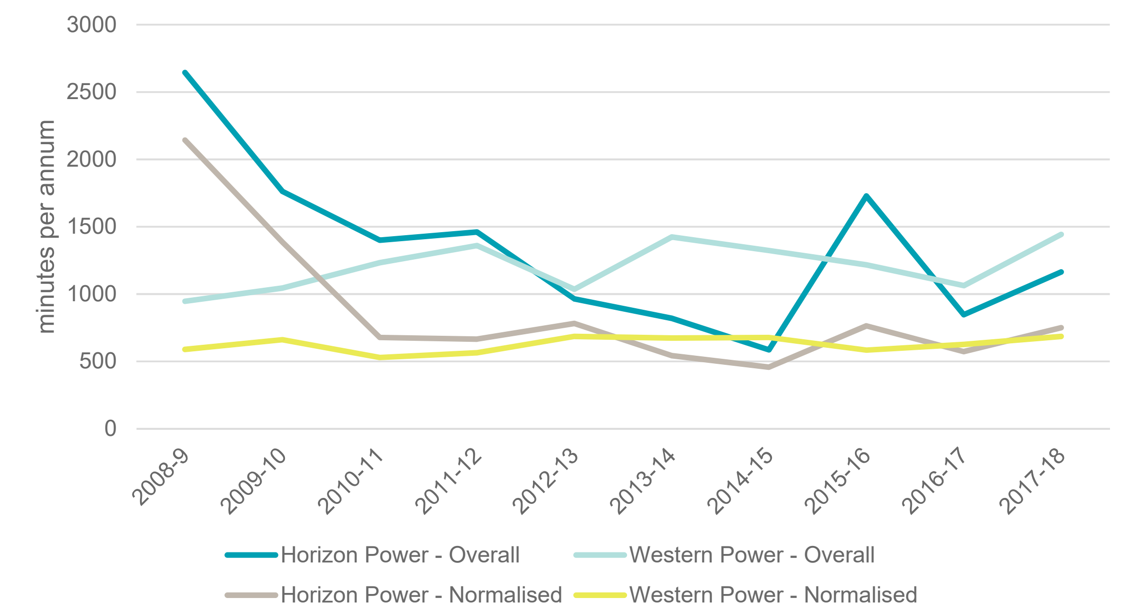


Figure 12: Overall and normalised SAIDI by electricity distributor - Long Rural



As expected, the normalisation process results in the values of normalised SAIDI being lower than the overall SAIDI. [28] In the case of the Rottnest Island Authority distribution system, the normalisation process has excluded all interruptions, so it has not been included in Figure 12.

The value of SAIDI for each class of feeder is influenced by the level of redundancy in the network for that class, and the remoteness of the location. For example, long rural feeders tend not to have any redundancy, and are often in remote locations, which increases the time to repair faults.

The normalisation process under SCONRRR provides a more accurate picture of a distributor's performance than the NQ&R Code's reporting requirements, which do not provide for normalisation. This is because normalised data includes only unplanned interruptions that are caused by factors under the distributor's control. Figures 10, 11 and 12 show that Horizon Power's and Western Power's normalised performance is considerably better than both its overall performance and its NQ&R Code performance.

2.5.2 System Average Interruption Frequency Index

Table 9 shows the overall and normalised SAIFI values by feeder class for each distributor in 2017/18. SAIFI measures how often the average customer has a supply interruption. The Total Network SAIFI is a weighted average value with the weighting based on the total customers served by each of the distribution system feeder types.

[28] Examples of system interruptions excluded from the SAIDI calculation under the normalisation process include interruptions caused by events outside the control of the distributor, such as weather events.

Table 9: Overall and normalised SAIFI for each electricity distributor

Overall distribution network – SAIFI (per year)					
	Total network	**CBD**	**Urban**	**Short Rural**	**Long Rural**
Horizon Power	1.5	N/A	1.3	1.2	7.1
Rottnest Island Authority	3.1	N/A	N/A	3.1	N/A
Western Power	2.3	0.1	1.6	2.6	5.9
Normalised distribution network – SAIFI (per year)					
	Total network	**CBD**	**Urban**	**Short Rural**	**Long Rural**
Horizon Power	1.1	N/A	1.3	0.9	5.1
Rottnest Island Authority	0.0	N/A	N/A	0.0	N/A
Western Power	1.4	0.04	1.0	1.6	3.8

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

Interruptions that are excluded from the calculation of normalised SAIDI are also excluded from the calculation of normalised SAIFI.

Figures 13, 14 and 15 compare the past 10 years of overall and normalised SAIFI values for the urban, short rural and long rural feeder classes respectively for Horizon Power and Western Power.

Figure 13: Overall and normalised SAIFI by electricity distributor - Urban

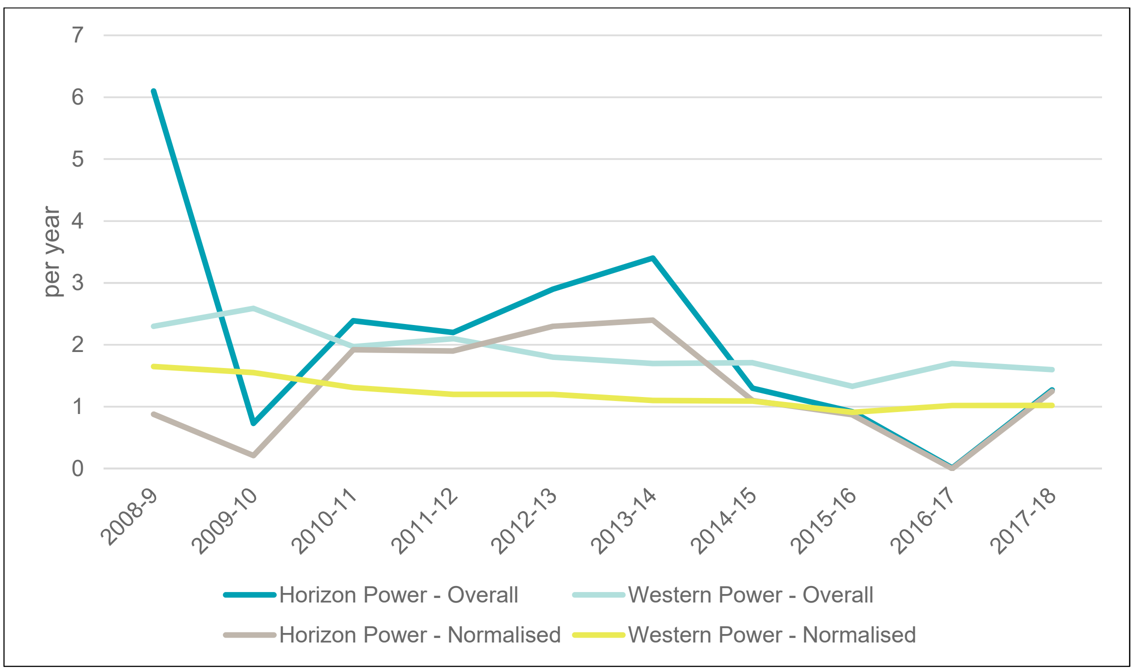


Figure 14: Overall and normalised SAIFI by electricity distributor - Short Rural

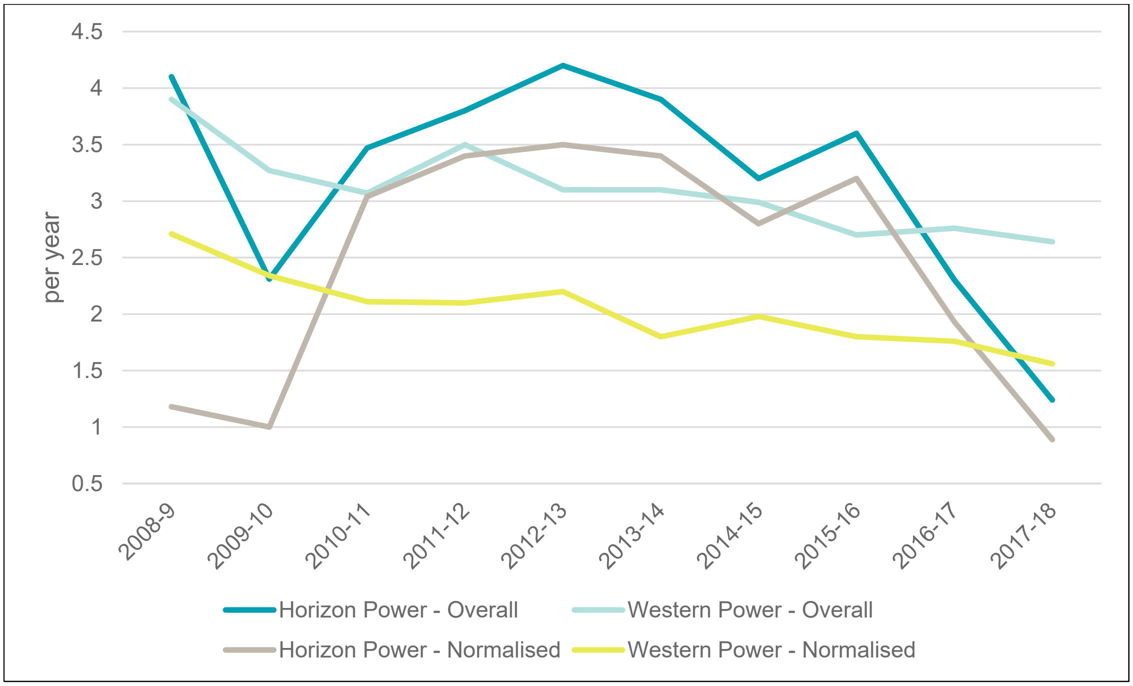
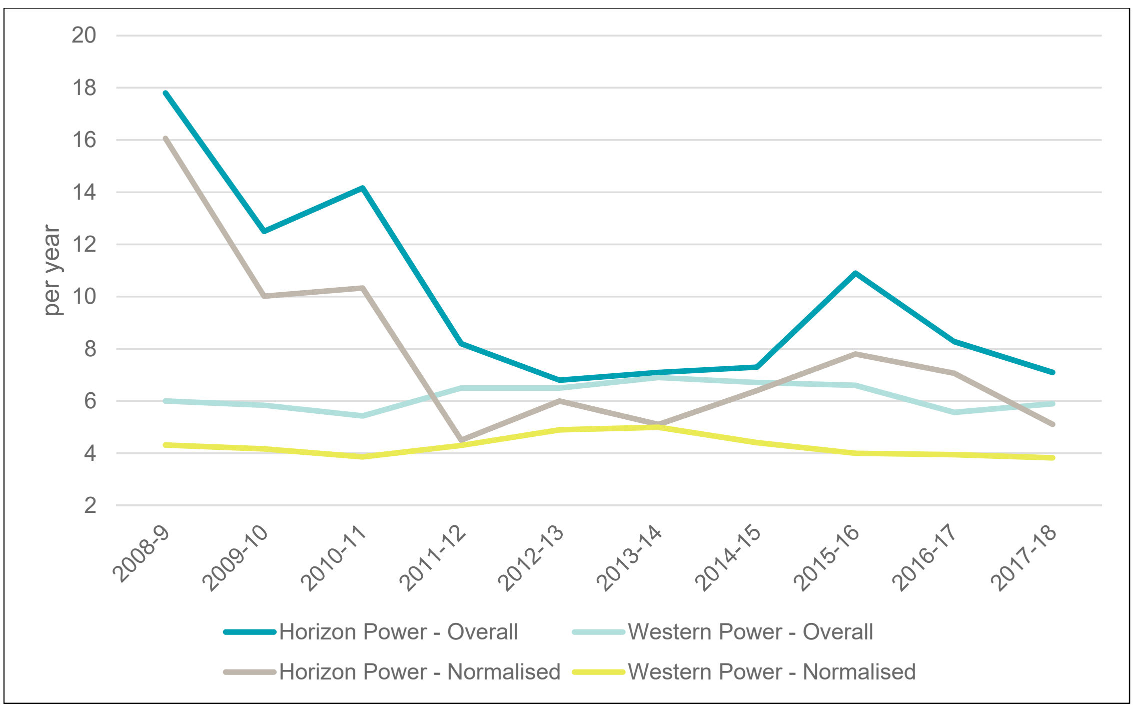


Figure 15: Overall and normalised SAIFI by electricity distributor - Long Rural



Comparing the SAIDI and SAIFI data shows that the change in the values of SAIFI each year mostly follow the same pattern as the SAIDI values. This result is to be expected. When an interruption is removed from the total interruptions by the SAIDI normalisation process, there is a corresponding reduction in the value of SAIFI.

Horizon Power and Western Power's normalised performance was considerably better than both its overall performance and the performance it reported under the NQ&R Code.

Table 42 in Appendix 3 contains each distributor's SCONRRR data for 2017/18.

2.5.3 Customer Average Interruption Duration Index

Table 10 shows the overall and normalised CAIDI values by feeder class for each distributor in 2017/18.

The CAIDI values for each class of feeder measure the average length of interruptions for those customers who actually had an interruption during the year. Therefore, the CAIDI values are more representative of the actual experience of the customers that were interrupted than the SAIDI values

Table 10: Overall and normalised CAIDI for each electricity distributor

Overall distribution network – CAIDI (minutes per customer per year)					
	Total network	CBD	Urban	Short Rural	Long Rural
Horizon Power	101	N/A	49	90	164
Rottnest Island Authority	19	N/A	N/A	19	N/A
Western Power	183	154	164	171	244
Normalised distribution network – CAIDI (minutes per customer per year)					
	Total network	CBD	Urban	Short Rural	Long Rural
Horizon Power	75	N/A	45	59	147
Rottnest Island Authority	0	N/A	N/A	0	N/A
Western Power	117	30	101	95	179

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

Table 11 shows each distributor's normalised CAIDI by feeder class in 2016/17 and 2017/18.

Table 11: Comparison of normalised CAIDI for each electricity distributor

	2016/17					2017/18				
	Total network	CBD	Urban	Short Rural	Long Rural	Total network	CBD	Urban	Short Rural	Long Rural
Horizon Power	59	N/A	0	56	81	75	N/A	45	59	147
Rottnest Island Authority	0	N/A	N/A	0	N/A	0	N/A	N/A	0	N/A
Western Power	115	123	102	100	159	117	30	101	95	179

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

3. Gas distribution system reliability

While all premises downstream from a supply interruption on electricity distribution systems will lose supply, gas leaks or mains breaks on gas distribution systems do not always cause a loss of supply to all the premises connected downstream.

Gas distribution systems are pressurised, so there may be sufficient pressure to maintain an adequate supply of gas for some time after the gas has started to escape from the system. This makes it difficult to accurately estimate the duration of a supply interruption to customer premises or, in some cases, whether the supply has been interrupted at all.

Gas distributors are required to report on the length and frequency of supply interruptions during the reporting period for customer premises that have had:

- interruptions that exceed 12 hours continuously (referred to as extended interruptions)
- five or more interruptions in a year.

3.1 Multiple interruptions on gas distribution systems

ATCO reported two customers affected by five or more interruptions in 2017/18.

It is rare for customers to experience five or more interruptions a year. Over the past six years, ATCO is the only distributor in Western Australia to report customers experiencing five or more interruptions in a year.

3.2 Extended interruptions

In 2017/18, 435 customer premises on ATCO's system were interrupted for more than 12 hours continuously. ATCO reported that the interruptions were caused by water entering the network, and broken service equipment.

Fourteen customer premises on a Kleenheat system were interrupted for more than 12 hours continuously, which was caused by a third party damaging a gas main. This is only the second year since reporting began in 2006/07 that Kleenheat has reported customers experiencing extended interruptions.[29]

[29] Refer to Table 37 in Appendix 3.

4. Gas consumption and unaccounted for gas

4.1 Gas consumption

Gas distributors are required to record the amount of gas consumed by residential and business customers on their distribution systems.

Table 12 compares residential and business gas consumption in 2016/17 and 2017/18.

Total residential and business gas consumption decreased in 2017/18.

In 2017/18, ATCO reported an 8.1 per cent decrease in residential gas consumption, and a 3.4 per cent decrease in business gas consumption. ATCO attributed this mainly to warmer weather in 2017.

Esperance Power Station reported a substantial increase (41.9 per cent) in business gas consumption in 2017/18. The consumption levels are a return to previous levels after unusually low consumption in 2016/17, which was caused by grain dryers in Esperance processing less product than usual that year.

Table 12: Comparison of gas consumption by distributor (GJ)

	Residential			Business		
	2016/17	2017/18	Change (%)	2016/17	2017/18	Change (%)
ATCO[30]	11,036,506	10,137,903	-8.1	1,383,781	1,336,979	-3.4
Esperance Power Station	4,017	3,933	-2.1	20,570	29,199	41.9
Kleenheat	8,531	8,039	-5.8	0	0	0.0
Total	**11,049,054**	**10,149,875**	**-8.1**	**1,404,351**	**1,366,178**	**2.7**

Residential and business gas consumption over the past six years is in Table 49 of Appendix 3.

Over the past six years, residential and business gas consumption on ATCO's distribution system has remained relatively constant at around 10 million and 1.3 million gigajoules respectively. The exception was 2016/17, when residential consumption was a six-year high of 11 million gigajoules. ATCO attributed the increased consumption to Perth's coldest year in more than a decade and Perth's coldest winter in more than 20 years.

4.2 Unaccounted for gas

Unaccounted for gas (UFG) is a measure of network efficiency for gas distribution systems. UFG represents the difference between gas metered at the input to the distribution system and the aggregated quantity of gas metered at customer connections.

30 ATCO's gas consumption data is based on calendar year from January to December. The consumption data for the 2017/18 period is in fact for the 2017 calendar year.

The two largest contributors to UFG are leaks and metering differences at the entry and exit points of the system.

Table 13 shows the quantity of UFG for each distributor.

Table 13: Unaccounted for gas (GJ)

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ATCO[31]	813,898	707,191	705,987	715,966	744,053	554,736
Esperance Power Station	0	0	0	0	425	419
Kleenheat	866	943	529	562	512	549
Total	**814,764**	**708,134**	**706,516**	**716,528**	**744,990**	**555,704**

Esperance Power Station reported UFG for the first time in 2016/17.[32] It attributed this to implementing an improved system for identifying UFG on its network.

The level of UFG reported on the ATCO system decreased by 25 per cent in 2017/18. ATCO attributed the reduction to mains replacement, reducing network losses and metering errors from a third party gate station and heating value variance. ATCO advised that it is addressing the metering errors.

31 ATCO's UFG data is based on calendar year from January to December. The UFG for the 2017/18 period is in fact for the 2017 calendar year.

32 In the previous six years, Esperance Power Station reported zero UFG. The explanation provided at the time was that the distribution network is relatively new, and entirely constructed from modern plastic piping.

5. Gas leaks

Table 14 shows the number of repairs to gas mains by each distributor.

Table 14: Gas main leak repairs

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ATCO	835	842	575	781	943	562
Esperance Power Station	2	0	0	2	1	1
Kleenheat	1	1	25	41	11	1
Total	**838**	**843**	**600**	**824**	**955**	**564**

ATCO performed most of the gas mains repairs, which reflects the much larger size of its distribution system in comparison to the other two distributors.[33]

ATCO has a routine leak survey program, which ensures every part of the network is surveyed at intervals not more than five years. Mains and services in high risk and sensitive locations are surveyed more often. Performing regular leak surveys means that over time, as leaks are identified and repaired, fewer new leaks are identified.

ATCO reported a 40 per cent decrease in gas mains leak repairs in 2017/18; a six-year low. ATCO attributed the decrease to it completing leak repairs in 2016/17 in high risk locations, which were subsequently resurveyed in 2017/18 and fewer leaks found for repair.

Table 15 shows the number of property service connection leak repairs.

Table 15: Gas property service connection leak repairs

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ATCO	6,614	7,182	5,575	6,040	5,815	5,776
Esperance Power Station	3	0	1	0	1	0
Kleenheat	0	0	42	5	25	4
Total	**6,617**	**7,182**	**5,618**	**6,045**	**5,841**	**5,780**

Table 16 shows the number of leak repairs to gas meters.

Table 16: Gas meter leak repairs

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ATCO	486	471	3,527	3,209	3,415	1,801
Esperance Power Station	0	0	0	2	3	6
Kleenheat	0	2	0	44	1	5
Total	**486**	**473**	**3,527**	**3,255**	**3,419**	**1,812**

33 See Appendix 2 for more information on the size of each distributor's systems.

In 2017/18, ATCO reported a 47 per cent decrease in gas meter leak repairs. Similar to the reduction in mains leak repairs, ATCO attributed the decrease in meter leak repairs to it completing leak repairs in 2016/17 in high risk locations, which were resurveyed in 2017/18 and fewer leaks found for repair.

6. Streetlight repairs

Table 17 shows the number of streetlights in metropolitan and regional areas that are maintained by each distributor.

Table 17: Number of streetlights in metropolitan and regional areas

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Metropolitan areas						
Horizon Power	5,993	8,325	8,022	8,332	8,066	7,866
Western Power	199,767	207,146	213,526	219,734	223,721	226,973
Total	**205,760**	**215,471**	**221,548**	**228,066**	**231,787**	**234,839**
Regional areas						
Horizon Power	10,331	11,298	11,007	11,092	11,255	11,202
Rottnest Island Authority	190	190	189	189	189	189
Western Power	37,907	38,539	39,202	39,769	39,931	40,363
Total	**48,428**	**50,027**	**50,398**	**51,050**	**51,375**	**51,754**

Table 18 shows the number of faulty streetlights reported to each distributor.

Table 18: Number of streetlight faults logged in metropolitan and regional areas

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Metropolitan areas						
Horizon Power	108	149	158	130	163	189
Western Power	36,525	33,447	28,647	28,388	33,145	36,321
Total	**36,633**	**33,596**	**28,805**	**28,518**	**33,308**	**36,510**
Regional areas						
Horizon Power	166	168	177	183	248	261
Rottnest Island Authority	46	18	112	79	22	33
Western Power	3,414	3,220	3,428	4,061	1,549	2,825
Total	**3,626**	**3,406**	**3,717**	**4,323**	**1,819**	**3,119**

Figure 16 shows the number of streetlight faults logged by distributors, expressed as a percentage of the total streetlights maintained by each distributor.

Figure 16: Percentage of faulty streetlights by distributor and location

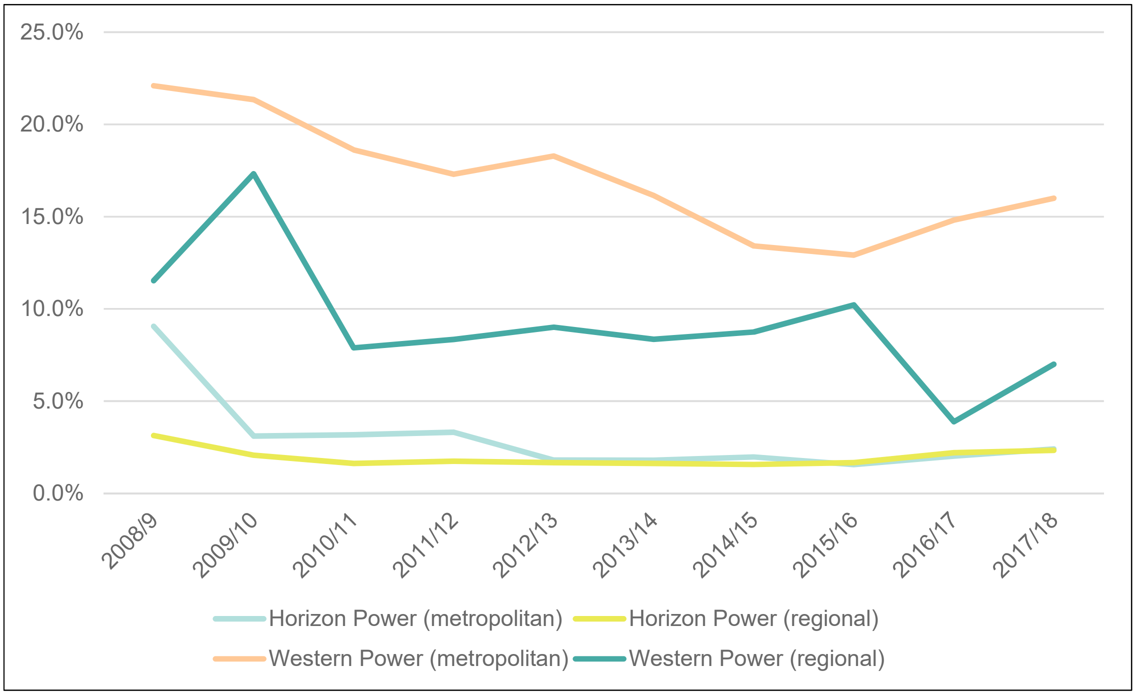


Figure 17 shows the proportion of faulty metropolitan streetlights that were repaired more than five business days after they were reported faulty.

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

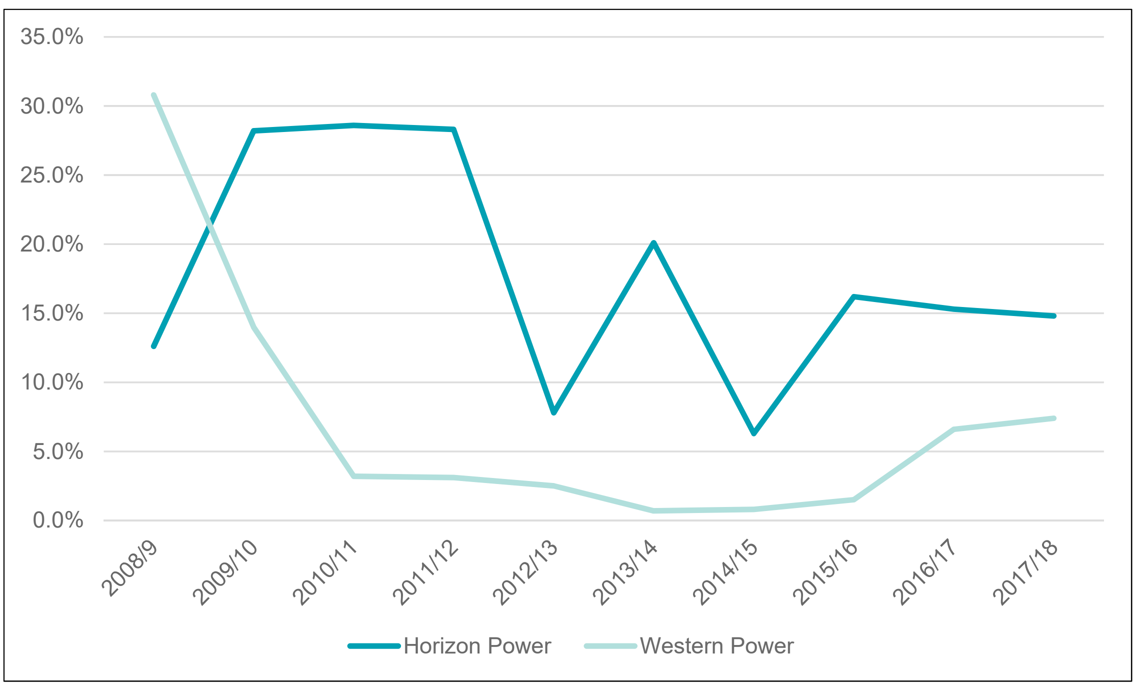
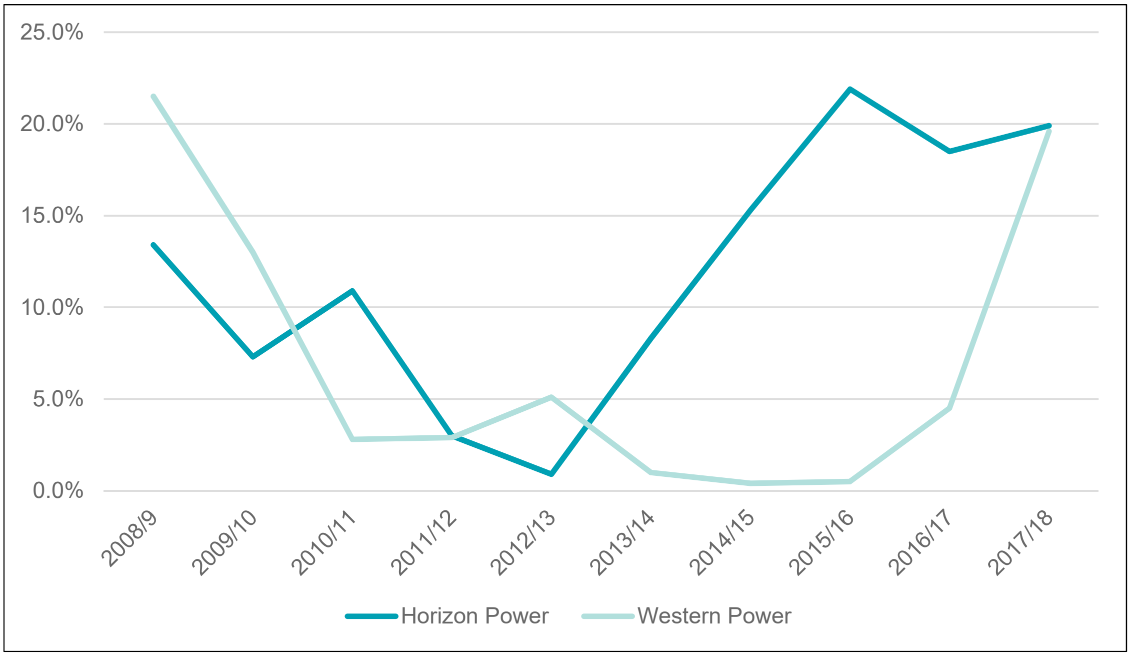


Figure 18 shows the percentage of faulty regional streetlights that were repaired more than nine business days after they were reported faulty.

Figure 18: Percentage of faulty regional streetlights repaired after 9 business days



The percentage of faulty regional streetlights repaired after nine business days by Western Power increased from 4.5 per cent in 2016/17 to 19.6 per cent in 2017/18. This follows an increase from 0.5 per cent in 2015/16 to 4.5 per cent in 2016/17.

Western Power attributed the increase to using internal work crews instead of contractors for regional streetlight repairs. The internal crews also perform other maintenance and emergency repair work, which can delay streetlight repairs. Western Power stated that its average response time for repairing regional streetlights was eight days against a target of nine days. However, this is an increase on the average response time of 5.6 days in 2016/17.

The percentage of faulty regional streetlights not repaired after nine business days by Horizon Power increased from 18.5 per cent to 19.9 per cent. In 2015/16, Horizon Power reported that it made changes to how it allocates resources under its streetlight asset maintenance strategy to make it more efficient. For example, where it can, Horizon Power allocates to a crew the repair of multiple faulty streetlights in the same town rather than send a crew out to repair a single streetlight.

Figure 18 shows that Horizon Power and Western Power's performance in repairing regional streetlight faults has deteriorated substantially in recent years, following changes to how they manage faulty streetlights.

7. Complaints

Both the *Code of Conduct for the Supply of Electricity to Small Use Customers* (electricity code) and the *Compendium of Gas Customer Licence Obligations* require distributors to have an internal process for handling complaints and resolving disputes that complies with Australian Standard AS ISO 10002 – 2014 *Guidelines for complaint management in organisations*.

AS ISO 10002 – 2014 defines a complaint as:

> An expression of dissatisfaction made to or about an organisation, related to its products, services, staff or the handling of a complaint, where a response or resolution is explicitly or implicitly expected or legally required.

When deciding whether a customer contact should be recorded as a complaint, distributors are encouraged to consider the ERA's *Customer Complaints Guidelines,* which have information to help distinguish between queries, complaints and other customer communications.

One measure the ERA uses to assess the effectiveness of a distributor's complaints handling process is how quickly a complaint is concluded.[34] Distributors report on the percentage of complaints that are concluded within 15 business days.

7.1 Electricity complaints

The electricity code, NQ&R Code and SCONRRR framework include obligations to record and report complaints.

The electricity code requires distributors to report complaints information specified by the ERA.[35] The ERA has specified two categories of complaints:

- Administrative process or customer service complaints: includes meter reading issues, the timeliness of correspondence and other customer communications, issues with the complaints handling process, late responses to a complaint and general administrative matters.
- Other complaints: includes poor service, privacy issues and health and safety issues.

The NQ&R Code focusses on the number of complaints received by a distributor that it has failed to comply with the NQ&R Code's power quality and reliability standards.

The SCONRRR framework focuses on technical quality of supply (QoS) complaints, which are separated into eight categories:

- supply voltage (four categories): low voltage, voltage swells, voltage dips and voltage spikes
- waveform distortion
- TV or radio interference

[34] A complaint is concluded when all of the relevant parts of the distributor's complaints handling process have been exercised in an attempt to resolve the complaint.

[35] The specification of complaints reporting obligations is in the Electricity Distribution Licence Performance Reporting Handbook.

- noise from appliances
- other.

Distributors are also required to report on the likely cause of the quality of supply complaints, which are separated into eight categories:

- network equipment faulty
- network interference by network service provider equipment
- network interference by another customer
- network limitation
- customer internal problem
- no problem identified
- environmental
- other.

7.1.1 SCONRRR complaints

Table 19 categorises the technical QoS complaints that have been received by Horizon Power and Western Power in 2017/18. QoS complaints received over the past six years are listed in Appendix 3, Table 43.[36]

Table 19: Technical quality of service complaints received in 2017/18 by category

	Horizon Power	Western Power
Total number of technical QoS complaints	27	1,796
Complaint categories		
Low supply voltage complaints	13	185
Voltage dip complaints	0	14
Voltage swell complaints	0	29
Voltage spike complaints	0	8
Waveform distortion complaints	0	0
TV or radio interference complaints	0	47
Noise from appliances complaints	0	0
Other complaints	14	1,513

Table 20 shows the number of QoS complaints received by each distributor over the past six years.

Western Power received 20 per cent fewer QoS complaints in 2017/18 compared to 2016/17. Western Power attributed the reduction in complaints to an improvement initiative it undertook to reduce the number of high voltage problems experienced by customers.

[36] The Rottnest Island Authority has received only one QoS complaint in the past six years.

In 2016/17, Horizon Power reported 111 QoS complaints, which was substantially more than in previous years. Horizon Power explained at the time that only 41 of the 111 the complaints were raised by customers. The remaining 70 complaints were power quality matters reported by its smart meters and recorded as QoS complaints. Horizon Power rectified this discrepancy when it discovered that its compliance system was recording power quality problems reported by its smart meters as complaints. The 70 power quality reports from the smart meters should have been excluded from the data and the number of complaints reported as 41, not 111.

Table 20: Technical quality of service complaints received since 2012/13

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Horizon Power	30	31	32	34	111	27
Rottnest Island Authority	0	0	0	0	0	0
Western Power	1,311	2,017	1,746	1,803	2,245	1,796
Total	**1,341**	**2,048**	**1,921**	**1,837**	**2,356**	**1,823**

Table 21 shows the likely causes of the technical QoS complaints received by Horizon Power and Western Power.

Table 21: Likely cause of technical quality of service complaints

	Horizon Power	Western Power
Network equipment faulty	14	144
Network interference by network service provider equipment	0	3
Network interference by another customer	0	0
Network limitation	3	544
Customer internal problem	1	149
No problem identified	0	778
Environmental	8	18
Other	1	160

7.1.2 Electricity code complaints

Table 22 shows the number of complaints about electricity code matters received by Horizon Power and Western Power over the past six years.

Western Power received 14 per cent more Administrative and Customer Service Complaints in 2017/18, which was a six-year high.

Western Power attributed the increase to several causes, including complaints about delays to customer projects following the introduction of a new online application form for network connections. Western Power also received more metering complaints, which stemmed from customer disconnections and the introduction of an online portal for customers who self-read their meters.

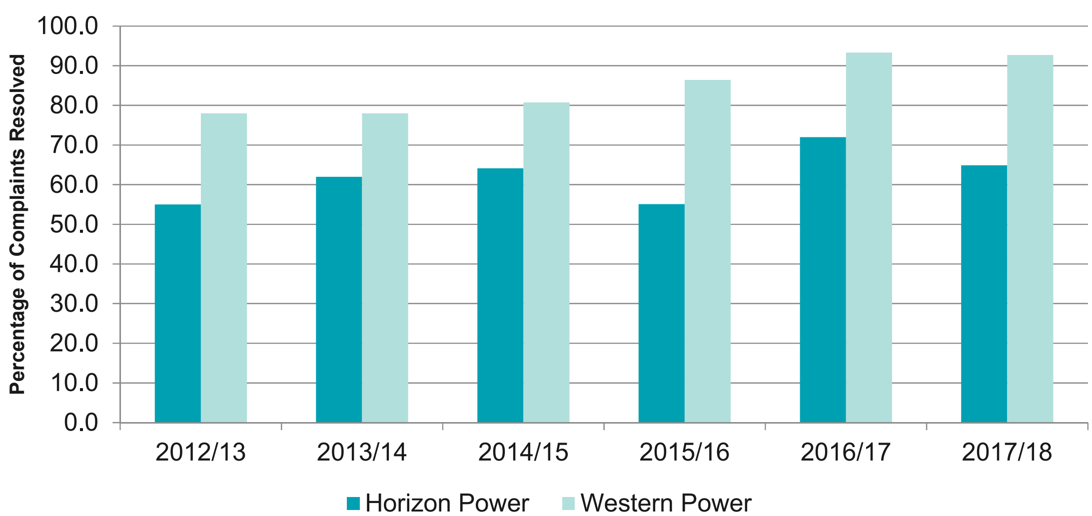
Table 22: Complaints received by electricity distributors (electricity code)

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Horizon Power[37]						
Administrative and customer service complaints	414	274	168	506	263	114
Other complaints	55	17	76	121	8	7
Total complaints	**469**	**291**	**244**	**627**	**271**	**121**
Western Power						
Administrative and customer service complaints	25	41	68	140	258	295
Other complaints	639	506	592	500	643	578
Total complaints	**664**	**547**	**660**	**640**	**901**	**873**

7.1.3 Electricity complaint resolution

Figure 19 shows the percentage of complaints resolved within 15 business days by Horizon Power and Western Power about electricity code and NQ&R Code matters.

Figure 19: Electricity distributor complaints resolved within 15 business days (electricity code and NQ&R code)



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

7.2 Gas complaints

The complaint reporting obligations for gas distributors are in the Gas Distribution Licence Performance Reporting Handbook.

The gas handbook separates complaints into six categories:

- Connection and augmentation: includes quality and timeliness of providing new service connections, or network augmentation works, and lack of capacity preventing a new connection to the system.
- Reliability of supply: includes supply interruptions, both planned and unplanned.
- Quality of supply: includes gas quality or supply pressure.
- Network charges and costs: includes any fee or charge levied by the distributor for the service it provides.
- Administrative processes or customer service: includes meter reading, timeliness of correspondence and other customer communications, the complaints handling process, timeliness of response to a complaint and any other process of a general administrative nature.
- Other: includes poor service, privacy issues and health and safety issues.

Table 23 shows the total number of complaints received by gas distributors.

The number of complaints received by ATCO in 2017/18 decreased by 16 per cent. The increase in complaints in 2014/15 and 2015/16 followed changes to its complaint definition and handling procedure.[38] The number of complaints received by ATCO has remained consistent since these changes were introduced.

Table 23: Complaints received by gas distributors

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ATCO	25	25	236	513	516	431
Esperance Power Station	0	0	0	0	0	0
Kleenheat	0	0	3	1	4	4
Total	**25**	**25**	**239**	**514**	**520**	**435**

[38] 2015/16 was the first full year that ATCO recorded complaints in accordance with its new complaint definition and procedure to capture complaints that are resolved at first contact. ATCO implemented the system changes in January 2015, which meant the 2014/15 complaints data only covered a part year.

Table 24 categorises the complaints received by ATCO and Kleenheat in 2017/18.

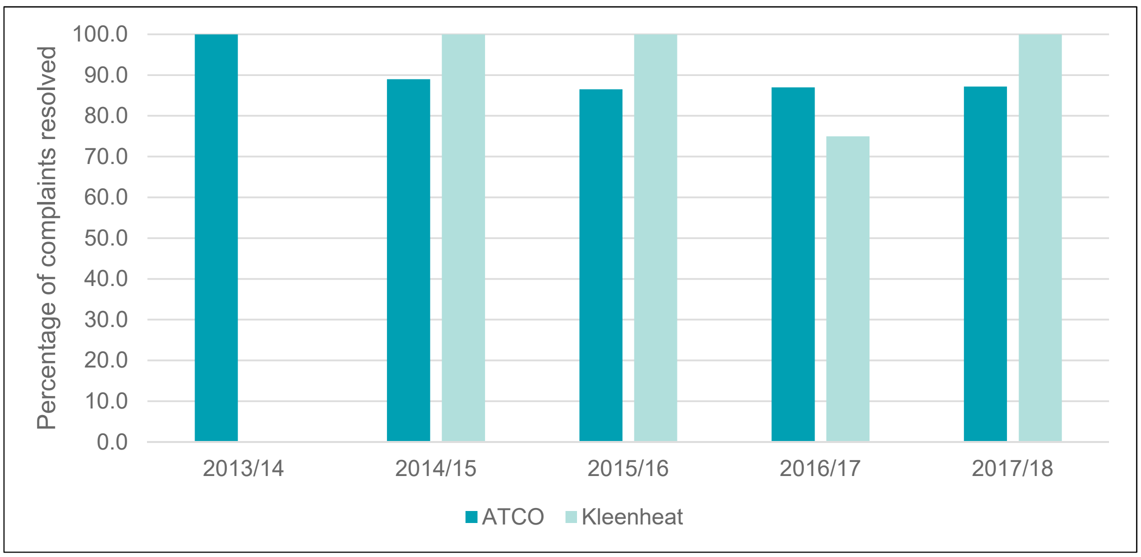
Table 24: Categorisation of complaints received by gas distributors

Complaint Category	ATCO	Kleenheat
Connection and Augmentation	16	0
Reliability of Supply	5	0
Quality of Supply	12	0
Network Charges and Costs	8	4
Administrative Processes or Customer Service	140	0
Other	250	0
Total	**431**	**4**

7.2.1 Gas complaint resolution

Figure 20 shows the percentage of complaints resolved within 15 business days by ATCO and Kleenheat.

Figure 20: Gas distributor complaints resolved within 15 business days[39]



39 In 2013/14, Kleenheat did not receive any complaints.

8. Call centre performance

A substantial number of customer interactions with distributors is by telephone. Consequently, a distributor's responsiveness to telephone calls from customers is an important measure of customer service.

Larger distributors operate call centres, which employ operators to handle customer enquiries and complaints. These call centres may have sophisticated systems to monitor and report on primary responsiveness indicators, specifically:

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

Some call centres handle calls about other services provided by the distributor, or a related business, as well as distribution services. Therefore, it may not always be possible for distributors to separately report on their performance for distribution calls. In these circumstances, the reported performance will be for all the calls handled by the call centre.

If the call centre uses interactive voice response equipment[40] to handle calls then the responsiveness measures only apply to those calls where the customer has selected an option to speak with an operator.

Smaller distributors offer a simpler telephone service, which is often based on the customer calling a switchboard which connects them to the appropriate contact person. This type of telephone service is not capable of producing responsiveness data.

8.1 Electricity distributor call centre performance

All three electricity distributors operate call centres. Horizon Power and the Rottnest Island Authority outsource their call centres to other service providers, while Western Power operates an in-house call centre.

The Rottnest Island Authority call centre handles calls for both retail and distribution without distinguishing between them, and also handles calls related to other areas of its business.

Table 27 shows the volume of calls received by each electricity distributor call centre.

Western Power received 9.7 per cent more calls in 2017/18. It attributed the rise in call volume to an increase in storm events.

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

Table 25: Volume of calls to electricity distributor call centres

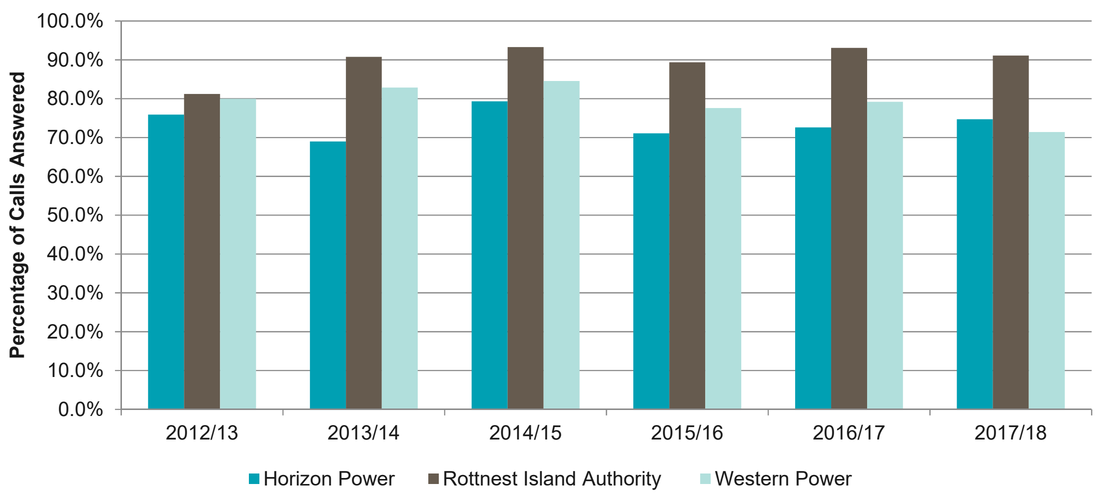
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Horizon Power	103,301[41]	14,437	11,452	12,794	13,645	10,940
Rottnest Island Authority	6,173	4,850	5,250	1,955	814	852
Western Power	510,935	455,368	388,358	357,105	343,300	376,719
Total	**620,409**	**474,655**	**405,060**	**371,854**	**357,759**	**388,511**

To assess the overall performance of electricity distributors call centres, the ERA examines the three call centre responsiveness measures together.

Figures 21, 22 and 23 shows percentage of calls that were answered within 30 seconds, the average waiting time before the call is answered by the call centre and the percentage of calls that were unanswered.[42]

Between 2016/17 and 2017/18, Western Power reported an increase in the average duration before a call is answered from 17 to 37 seconds, and a decrease in the percentage of calls answered within 30 seconds from 79.2 to 71.4 per cent. Western Power attributed the changes in performance to the 9.7 per cent increase in call volume without a corresponding increase to call centre resources to manage the extra calls, and prioritising fault calls over general calls during storm events.

Figure 21: Percentage of electricity distributor calls answered within 30 seconds



41 Horizon Power attributed the large number of calls received in 2012/13 to it bringing metering field services in-house. The transition caused longer billing periods, resulting in higher bills, which led to an increase in customers contacting the call centre.

42 Table 48 in Appendix 3 shows detailed call centre data for electricity distributors.

Figure 22: Average duration before a call was answered by electricity distributors

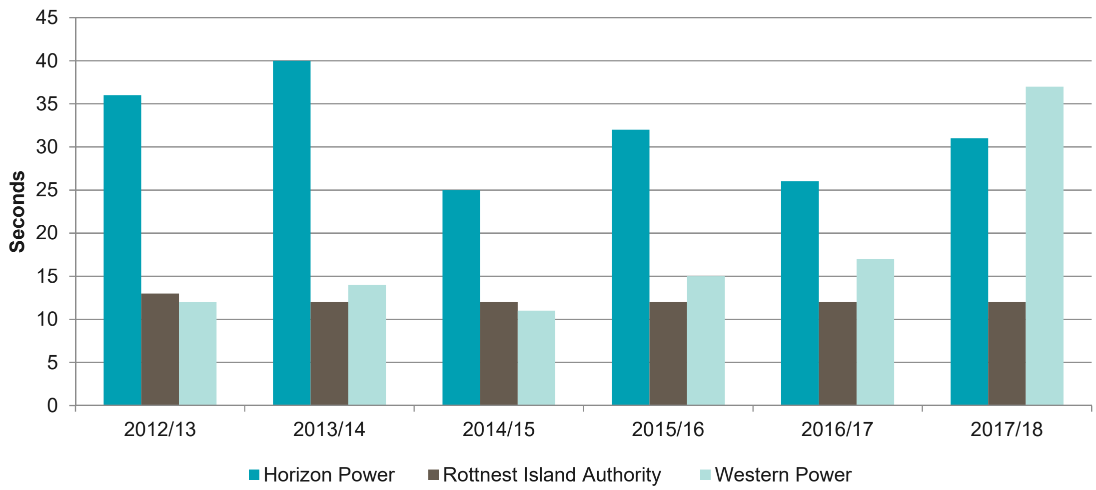
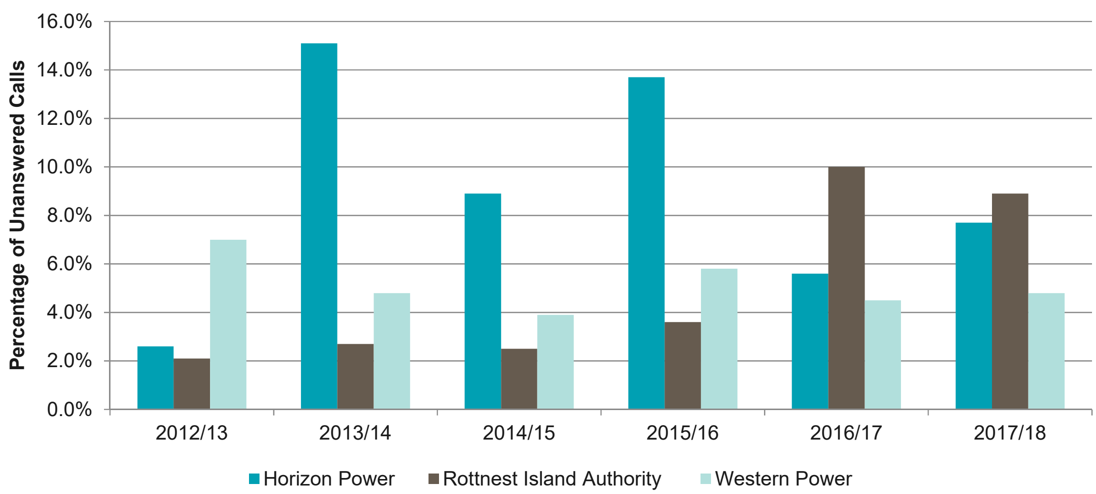


Figure 23: Percentage of calls that were unanswered by electricity distributors



8.2 Gas distributor call centre performance

ATCO and Kleenheat are the only gas distributors that operate call centres.

Caution is needed when interpreting the performance of the Kleenheat call centre, as it also handles calls about its retail operations and calls to other areas of its business.

Table 26 shows the volume of calls received by the ATCO and Kleenheat call centres.

Table 26: Volume of calls to gas distributor call centres

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ATCO	66,933	77,388	84,106	84,685	79,316	71,258
Kleenheat	220,710	235,698	233,363	222,505	285,887	310,803
Total	**287,643**	**313,086**	**317,469**	**307,190**	**365,203**	**382,061**

Figures 24, 25 and 26 show the percentage of calls that were answered by gas distributor call centres within 30 seconds, the average waiting time before the call was answered by the call centre and the percentage of calls that were unanswered.[43]

Figure 24: Percentage of gas distributor calls answered within 30 seconds

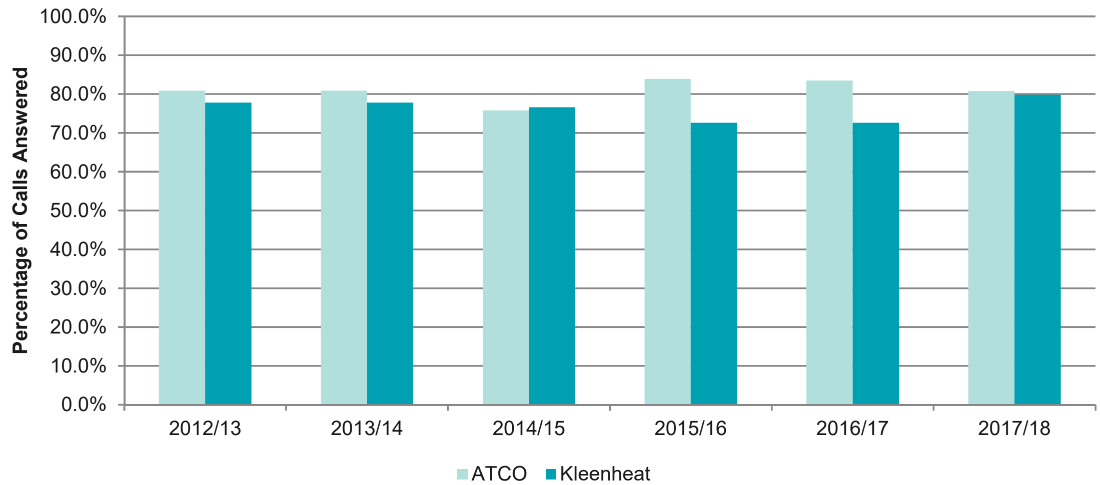
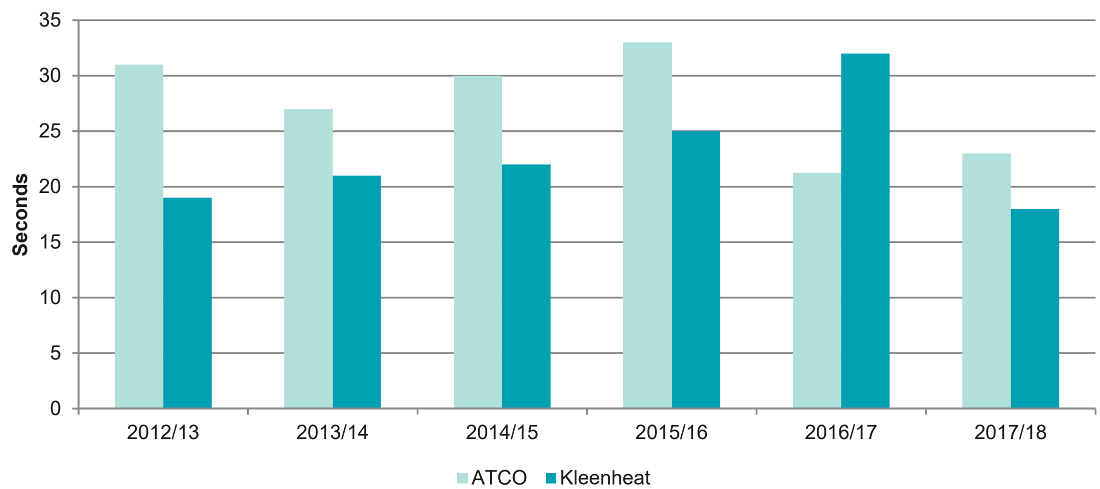
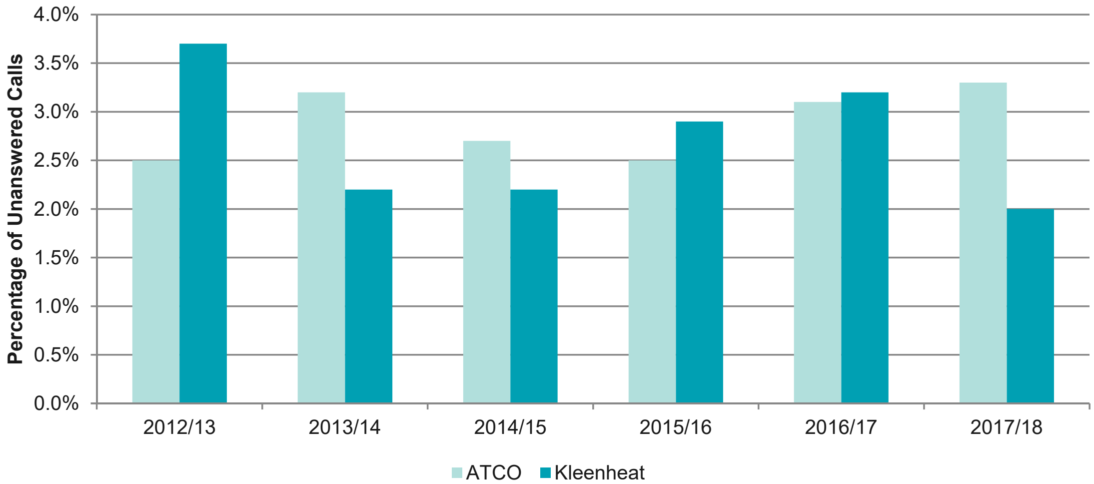


Figure 25: Average duration before a call was answered by gas distributors



43 Table 48 in Appendix 3 shows detailed call centre data for gas distributors.

Figure 26: Percentage of calls that were unanswered by gas distributors



9. Service standard payments

9.1 Electricity distributor service standard payments

The electricity code requires distributors to make service standard payments to customers for:[44]

- Wrongful disconnection, at a rate of $100 per day.[45]
- Failure to acknowledge or respond to a customer complaint within the permitted timeframes, at a rate of $20 for each written complaint.[46]

The NQ&R Code requires distributors to make service standard payments to customers for:[47]

- failure to give at least 72 hours' notice of a planned supply interruption[48]
- supply interruptions that exceed 12 hours in duration.[49]

The Rottnest Island Authority has not made any service standard payments to customers over the past six years. Accordingly, Table 27 only provides information about payments made by Horizon Power and Western Power.

Table 27: Service standard payments made by electricity distributors

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Electricity Code - clause 14.4 (failure to acknowledge or respond to a complaint on time)						
Horizon Power	0	0	0	0	0	0
Western Power	0	0	1	0	0	0
Electricity Code - clause 14.5 (wrongful disconnection)						
Horizon Power	-	4	2	2	61	43
Western Power	-	14	1	4	5	8
NQ&R Code – clause 18 (failure to give at least 72 hours' notice of a planned interruption)						
Horizon Power	1	10	1	6	1	0
Western Power	683	751	341	408	601	376

44 The distributor is only required to make payments for late reconnections and failure to acknowledge a complaint if the customer applies for payment. Payments for wrongful disconnection must be made without application from the customer.

45 Clause 14.5 of the electricity code.

46 Clause 14.4 of the electricity code.

47 The distributor is only required to make payments if the customer applies. Eligibility for payments is limited to customers who consume less than 50 megawatt hours of electricity per year.

48 Clause 18 of the NQ&R Code.

49 Clause 19 of the NQ&R Code.

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
NQ&R Code – clause 19 (supply interruptions exceeding 12 hours in duration)						
Horizon Power	34	89	1,618[50]	17	346[51]	10
Western Power	47,523	15,166	7,509	9,518	13,289	19,832

Horizon Power and Western Power did not make any payments under clause 14.4 of the electricity code (failure to respond to a complaint), which is consistent with previous years.

The number of payments made by Horizon Power under clause 14.5 of the electricity code (wrongful disconnection) increased substantially in 2016/17 and 2017/18. Horizon Power attributed the 61 payments in 2016/17 to a system error that wrongfully disconnected 59 prepayment meter customers and attributed the 43 payments in 2017/18 to 31 wrongful disconnections caused by human error and 12 caused by system errors.

Western Power made $1,586,560 in payments to customers in 2017/18 under section 19 of the NQ&R Code (supply interruptions exceeding 12 hours in duration). This is $523,440 (49.2 per cent) more in payments than in 2016/17. Western Power explained that the increase in supply interruptions exceeding 12 hours was primarily due to major weather events. Western Power also gave major weather events as the main reason for the increase in payments in 2016/17, along with pole-top fires.

50 The large number of payments was due to interruptions caused by tropical cyclones Olwyn and Quang.

51 The large number of payments was due to fire (Fitzroy Crossing), flooding (Yungngora) and a blown ring main unit (Karratha).

Appendix 1 - Electricity distribution system asset information

Table 28 provides an overview of the assets deployed in the distribution systems operated by Horizon Power, the Rottnest Island Authority and Western Power as at 30 June 2018.

Table 28: Electricity distribution system assets as at 30 June 2018

Asset type	Asset sub-type/feeder class	Horizon Power	Rottnest Island Authority	Western Power
Number of metered supply points	CBD	N/A	N/A	5,530
	Urban	6,042	N/A	743,165
	Short Rural	42,225	190	301,371
	Long Rural	2,148	N/A	95,282
Feeder length (km)	CBD	N/A	N/A	228
	Urban	299	N/A	22,995
	Short Rural	4,280	45	19,729
	Long Rural	3,370	N/A	51,495
Number of Transformers	Sub-transmission	N/A	3	N/A
	Distribution	4,373	16	69,047
Total capacity of Transformers (MVA)	Sub-transmission	N/A	3	N/A
	Distribution	809	4	10,304
Number of streetlights		19,068	189	267,336
Number of poles		58,665	56	781,604

Appendix 2 - Gas distribution system construction information

Table 29 provides an overview of the gas pipe assets deployed in the ATCO, Esperance Power Station and Kleenheat distribution systems as at 30 June 2018.

The distribution systems operated by Esperance Power Station and Kleenheat are substantially smaller and not as diverse in terms of the pipe type and system operating pressure as the distribution systems operated by ATCO.

Table 29: Gas distribution network construction information

		ATCO			Esperance Power Station			Kleenheat		
Asset type	**Type of piping**	**Low pressure**	**Medium pressure**	**High pressure**	**Low pressure**	**Medium pressure**	**High pressure**	**Low pressure**	**Medium pressure**	**High pressure**
Length of gas main (km) constructed from:	Cast iron	0.0[52]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unprotected steel	25.7	34.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Protected steel	0.0	43.0	719.4	0.0	0.0	0.0	0.0	0.0	0.0
	PVC	3,512.5	6,047.9	0.0	0.0	0.0	0.0	0.0	9.0	0.0
	Polyethylene	91.1	3,311.4	424.6	0.0	35.2	0.0	0.0	32.6	0.0
	Other	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total length of distribution mains installed and in service (km)		3,629.3	9,437.2	1,143.9	0.0	35.2	0.0	0.0	41.6	0.0
Number of service connections per km of gas mains		**53.1**			**10.9**			**25.2**		

52 ATCO has replaced its cast iron pipes with polyethylene pipes.

Appendix 3 - Additional electricity and gas performance data

Table 30: Total small use customer connections on electricity and gas distribution systems

Electricity							Gas						
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18		2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Horizon Power	45,866	46,508	47,832	47,168	48,748	48,981	ATCO	673,878	692,988	714,488	736,746	750,339	760,355
Rottnest Island Authority	527	527	527	527	528	528	Esperance Power Station	332	342	357	376	383	385
Western Power	1,050,232	1,060,588	1,085,657	1,110,196	1,128,334	1,141,308	Kleenheat	940	956	922	958	1,006	1,048
Total	**1,096,625**	**1,107,623**	**1,134,016**	**1,157,891**	**1,177,610**	**1,190,817**	**Total**	**675,150**	**694,286**	**715,767**	**738,080**	**751,728**	**761,788**

Table 31: Establishment of new customer connections on electricity and gas distribution systems

New connections on electricity systems							New connections on gas systems						
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18		2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Horizon Power	2,401	2,797	1,576	860	549	381	ATCO	15,423	20,273	23,734	24,600	16,814	13,555
Rottnest Island Authority	0	0	0	0	1	0	Esperance Power Station	3	8	12	18	9	2
Western Power	23,994	29,532	33,925	32,589	25,029	19,406	Kleenheat	37	15	43	34	48	44
Total	**26,395**	**32,329**	**35,501**	**33,449**	**25,579**	**19,787**	**Total**	**15,463**	**20,296**	**23,789**	**24,642**	**16,871**	**13,601**

Table 32: Number of customer connections not established on electricity and gas distribution systems within the permitted timeframes

	Number of new connections not established on time						Percentage of total new connections					
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Electricity												
Horizon Power	15	22	16	2	0	0	0.6	0.8	1.0	0.2	0.0	0.0
Rottnest Island Authority	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0.0	0.0
Western Power	361	223	189	141	91	71	1.5	0.7	0.6	0.4	0.4	0.4
Gas												
ATCO	2	2	14	287	0	3	0.01	0.01	0.1	1.2	0.0	0.02
Esperance Power Station	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
Kleenheat	0	0	8	0	1	0	0.0	0.0	18.6	0.0	2.1	0.0

Table 33: Customer reconnections on electricity and gas distribution systems

Reconnections on electricity systems							Reconnections on gas systems						
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18		2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Horizon Power	1,641	3,502	3,889	1,527	10,158	9,084	ATCO	3,692	2,820	7,112	10,875	11,212	12,324
Rottnest Island Authority	0	0	0	0	0	0	Esperance Power Station	2	25	30	5	0	6
Western Power	13,908	15,520	16,740	15,202	22,313	30,485	Kleenheat	4	2	10	8	6	5
Total	**14,003**	**19,022**	**20,629**	**16,729**	**32,471**	**39,569**	**Total**	**3,698**	**2847**	**7,152**	**10,888**	**11,218**	**12,335**

Table 34: Number of customer reconnections not established on electricity and gas distribution systems within the permitted timeframes

	Number of reconnections not established on time						Percentage of total reconnections					
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Electricity												
Horizon Power	5	12	26	0	0	0	0.3	0.3	0.7	0.0	0.0	0.0
Rottnest Island Authority	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Western Power	227	224	177	145	222	205	1.6	1.4	1.1	1.0	1.0	0.7
Gas												
ATCO	22	15	1	0	1	7	0.6	0.5	0.0	0.0	0.0	0.1
Esperance Power Station	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
Kleenheat	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0

Table 35: Number of electricity customer premises that have had interruptions of more than 12 hours continuously

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Horizon Power	587	3,785	6,382	681	1,663	742
Rottnest Island Authority	0	0	0	0	0	0
Western Power	38,820	43,750	37,280	39,495	43,794	70,490
Total	**39,407**	**47,535**	**43,662**	**40,176**	**45,457**	**71,232**

Table 36: Number of electricity customer premises that have had multiple interruptions

	Perth CBD and Urban areas, > 9 interruptions						Rural areas, > 16 interruptions					
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Horizon Power	N/A	N/A	N/A	N/A	N/A	N/A	3,327	1,263	106	268	101	79
Rottnest Island Authority	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	34	0
Western Power	8,702	12,326	4,755	3,529	7,166	1,478	2,341	5,154	3,912	3,204	3,344	3,172
Total	**8,702**	**12,326**	**4,755**	**3,529**	**7,166**	**1,478**	**5,668**	**6,417**	**4,018**	**3,472**	**3,479**	**3,251**

Table 37: Number of gas customer premises that have had interruptions exceeding 12 hours and five or more interruptions per annum

	Customers with interruptions to supply >12 hours continuously						Customers with 5 or more supply interruptions					
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ATCO	640	1,534	743	532	439	435	0	1	1	1	0	2
Esperance Power Station	0	0	0	0	0	0	0	0	0	0	0	0
Kleenheat	0	0	0	0	14	14	0	0	0	0	0	0
Total	**640**	**1,534**	**743**	**532**	**453**	**449**	**0**	**1**	**1**	**1**	**0**	**2**

Table 38: Average total duration and frequency of supply interruptions in the Perth CBD (NQ&R Code)

	Duration of Interruptions						Frequency of Interruptions					
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Horizon Power	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rottnest Island Authority	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Western Power	28	35	33	40	37	30	0.3	0.3	0.2	0.2	0.2	0.2

Table 39: Average total duration and frequency of supply interruptions in the urban areas (NQ&R Code)

	Duration of Interruptions						Frequency of Interruptions					
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Horizon Power	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rottnest Island Authority	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Western Power	390	343	326	249	244	247	2.4	2.23	2.12	1.89	1.81	1.75

Table 40: Average total duration and frequency of supply interruptions in the other areas of the State (NQ&R Code)

	Duration of Interruptions						Frequency of Interruptions					
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Horizon Power	297	330	373	359	338	293	3.59	3.92	3.75	3.71	3.33	2.69
Rottnest Island Authority	76	62	62	136	386	385	5.73	4.38	3.61	3.65	6.37	6.25
Western Power	979	1,020	1,030	992	997	1,015	5.28	5.16	5.41	5.36	5.18	5.15

Table 41: Average total duration and frequency of supply interruptions in isolated systems (NQ&R Code)

	Duration of Interruptions						Frequency of Interruptions					
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Horizon Power	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rottnest Island Authority	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Western Power	537[53]	505	N/A	N/A	N/A	N/A	11.6	16.7	N/A	N/A	N/A	N/A

53 In 2012/13 and 2013/14, Western Power reported reliability performance data for customers in Ravensthorpe and Bremer Bay, which were islanded from Western Power's network during this period to allow for network upgrades to improve reliability of supply. These two areas were considered "isolated systems" for the purposes of the NQ&R Code.

Table 42: SAIDI, SAIFI and CAIDI performance of energy providers in 2017/18 (SCONRRR)[54]

		Total network	CBD	Urban	Short Rural	Long Rural
SAIDI measure						
Western Power	**Overall**	**410**	**11**	**263**	**452**	**1442**
	Distribution network (planned)	127	10	97	126	377
	Distribution network (unplanned)	255	1	155	275	985
	Normalised distribution network (unplanned)	164	1	103	148	685
Horizon Power	**Overall**	**152**	**N/A**	**62**	**111**	**1164**
	Distribution network (planned)	54	N/A	6	42	393
	Distribution network (unplanned)	98	N/A	56	69	771
	Normalised distribution network (unplanned)	83	N/A	56	53	750
Rottnest Island Authority	**Overall**	**59**	**N/A**	**N/A**	**59**	**N/A**
	Distribution network (planned)	9	N/A	N/A	9	N/A
	Distribution network (unplanned)	50	N/A	N/A	50	N/A
	Normalised distribution network (unplanned)	0	N/A	N/A	0	N/A
SAIFI measure						
Western Power	**Overall**	**2.25**	**0.07**	**1.60**	**2.64**	**5.90**
	Distribution network (planned)	0.39	0.03	0.30	0.38	1.08
	Distribution network (unplanned)	1.61	0.04	1.11	1.92	4.50
	Normalised distribution network (unplanned)	1.40	0.04	1.02	1.56	3.83
Horizon Power	**Overall**	**1.50**	**N/A**	**1.27**	**1.24**	**7.10**
	Distribution network (planned)	0.31	N/A	0.02	0.26	1.91
	Distribution network (unplanned)	1.19	N/A	1.25	0.98	5.19

[54] N/A means no feeders of this type are operated by the distributor.

		Total network	CBD	Urban	Short Rural	Long Rural
	Normalised distribution network (unplanned)	1.11	N/A	1.25	0.89	5.11
Rottnest Island Authority	**Overall**	**3.14**	**N/A**	**N/A**	**3.14**	**N/A**
	Distribution network (planned)	0.05	N/A	N/A	0.05	N/A
	Distribution network (unplanned)	3.09	N/A	N/A	3.09	N/A
	Normalised distribution network (unplanned)	0.00	N/A	N/A	0.00	N/A
CAIDI measure						
Western Power	**Overall**	**183**	**154**	**164**	**171**	**244**
	Distribution network (planned)	328	340	319	328	349
	Distribution network (unplanned)	159	30	140	143	219
	Normalised distribution network (unplanned)	117	30	101	95	179
Horizon Power	**Overall**	**101**	**N/A**	**49**	**90**	**164**
	Distribution network (planned)	175	N/A	296	163	205
	Distribution network (unplanned)	82	N/A	45	70	149
	Normalised distribution network (unplanned)	75	N/A	45	59	147
Rottnest Island Authority	**Overall**	**18.7**	**N/A**	**N/A**	**18.7**	**N/A**
	Distribution network (planned)	187.5	N/A	N/A	187.5	N/A
	Distribution network (unplanned)	16.2	N/A	N/A	16.2	N/A
	Normalised distribution network (unplanned)	0.0	N/A	N/A	0.0	N/A

Table 43: Complaints received by electricity distributors and complaints concluded within 15 business days

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Total electricity customer code complaints						
Horizon Power	469	291	244	627	271	121
Rottnest Island Authority	0	0	1	0	0	1
Western Power	664	547	660	640	901	873
Admin processes and customer service complaints						
Horizon Power	414	274	168	506	263	114
Rottnest Island Authority	0	0	1	0	0	0
Western Power	25	41	68	140	258	295
Other complaints						
Horizon Power	55	17	76	121	8	7
Rottnest Island Authority	0	0	0	0	0	1
Western Power	639	506	592	500	643	578
NQ&R code complaints[55]						
Horizon Power	30	31	32	34	111	27
Rottnest Island Authority	0	0	0	0	1	0
Western Power	643	765	975	693	728[56]	920
Customer complaints concluded in 15 business days (electricity code complaints and NQ&R code[57] **complaints combined)**						
Horizon Power	31	62	177	364	275	94
Rottnest Island Authority	0	0	1	0	0	0

55 Complaints raised about the standards in Part 2 and section 14(3) of the NQ&R Code.

56 The complaints number for 2016/17 was amended in the 2017/18 NQ&R Annual Reliability and Power Quality Report (Table 2) from 728 to 908 for reasons outlined in section 7.1 of that report.

57 This measures the resolution of complaints that are just about issues related to the standards in Part 2 and section 14(3) of the NQ&R Code.

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Western Power	1,017	1,021	1,320	1,152	1,520	1,662
Technical quality of supply[58] complaints						
Horizon Power	30	31	32	34	111	27
Rottnest Island Authority	0	0	0	0	0	0
Western Power	1,311	765	1889	1,803	2,245	1,796

[58] This is the number of complaints received about any technical quality of supply issue (as defined under the SCONRRR framework).

Table 44: Complaints received by gas distributors

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Total complaints						
ATCO	25	25	236	513	516	431
Esperance Power Station	0	0	0	0	0	0
Kleenheat	0	0	3	1	4	4
Admin processes and customer service complaints						
ATCO	6	0	132	211	163	140
Esperance Power Station	0	0	0	0	0	0
Kleenheat	0	0	0	0	0	0
Connection and augmentation complaints						
ATCO	4	6	16	52	49	16
Esperance Power Station	0	0	0	0	0	0
Kleenheat	0	0	0	0	2	0
Reliability of supply complaints						
ATCO	2	10	4	32	26	5
Esperance Power Station	0	0	0	0	0	0
Kleenheat	0	0	0	0	2	0
Quality of supply complaints						
ATCO	3	5	5	0	4	12
Esperance Power Station	0	0	0	0	0	0
Kleenheat	0	0	0	0	0	0
Network charges and costs complaints						
ATCO	0	2	8	14	10	8
Esperance Power Station	0	0	0	0	0	0

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Kleenheat	0	0	0	1	0	4
Other Complaints						
ATCO	10	2	71	204	264	250
Esperance Power Station	0	0	0	0	0	0
Kleenheat	0	0	3	0	0	0

Table 45: Percentage of all gas customer complaints concluded in 15 business days (combined total of gas compendium and quality and reliability complaints)

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ATCO	-	100.0%	89.0%	86.5%	87.0%	87.2%
Esperance Power Station	-	-	-	-	-	-
Kleenheat	-	-	100.0%	100.0%	75.0%	100.0%

Table 46: Electricity and gas distributor call centre performance

	Total number of calls						Percentage of answered within 30 seconds					
Year	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**
Electricity												
Horizon Power	103,301	14,437[59]	11,452	12,794	13,645	10,940	75.9	69.0	79.3	71.1	72.6	74.7
Rottnest Island Authority	6,173	4,850	5,250	1,955	814	852	81.2	90.8	93.3	89.4	93.1	91.1
Western Power	510,935	455,368	388,358	357,105	343,300	376,719	80.0	82.9	84.6	77.6	79.2	71.4
Electricity Total	**620,409**	**474,655**	**405,060**	**371,854**	**357,759**	**388,511**						
Gas												
ATCO	66,933	77,388	84,106	84,685	79,316	71,258	80.9	80.9	75.8	77.9	83.5	80.8

59 Since 2013/14, Horizon Power has been reporting performance for its distribution operations. Previously, the data also included calls about its retail operations.

Kleenheat[60]	220,710	235,698	233,363	222,505	285,887	310,803	77.8	77.8	76.6	72.6	72.6	79.8
Gas Total	**287,643**	**313,086**	**317,469**	**307,190**	**365,203**	**382,061**						
	Average duration before a call is answered by an operator (seconds)						**Percentage of unanswered calls**					
Electricity												
Horizon Power	36	40	25	32	26	31	2.6	15.1	8.9	13.7	5.6	7.7
Rottnest Island Authority	13	12	12	12	12	12	2.1	2.7	2.5	3.6	10.0	8.9
Western Power	12	14	11	15	17	37	7.0	4.8	3.9	5.8	4.5	4.8
Gas												
ATCO	31	27	30	33	21	23	3.2	2.7	2.8	3.2	3.1	3.3
Kleenheat	19	21	22	25	32	18	2.2	2.2	2.9	2.6	3.2	2.0

Table 47: Residential and non-residential gas consumption

	Residential gas consumption (GJ)						**Non-residential gas consumption (GJ)**					
	2012/13	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**
ATCO[61]	10,017,511	10,087,162	9,816,762	10,049,915	11,036,506	10,137,903	1,241,075	1,263,629	1,286,095	1,319,166	1,383,781	1,336,979
Esperance Power Station	3,567	3,969	3,981	4,014	4,017	3,933	26,481	28,276	32,669	32,342	20,570	29,199
Kleenheat	6,293	6,769	7,489	7,348	8,531	8,039	227	194	225	218	0[62]	0
Total	**10,027,371**	**10,193,727**	**9,828,232**	**10,061,277**	**11,049,054**	**10,149,875**	**1,267,783**	**1,292,099**	**1,318,989**	**1,351,726**	**1,404,351**	**1,366,178**

60 The Kleenheat call centre also handles calls for other Wesfarmers Kleenheat gas businesses, including its retail operations. The data presented in this table includes all calls to the Kleenheat call centre.

61 ATCO's gas consumption data is based on calendar year from January to December.

62 In previous years, Kleenheat reported non-residential gas consumption in error, due to some residential accounts being set up in business names (residential homes owned by businesses, such as charities). In 2016/17, it reported zero non-residential gas consumption by small use customers on its systems.

Table 48: Percentage of unaccounted for gas on distribution systems

	Unaccounted for gas (GJ)						Percentage unaccounted for gas					
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ATCO[63]	813,898	707,191	705,987	715,966	744,053	554,736	-	-	-	-	-	-
Esperance Power Station	0	0	0	0	425	419	0.0	0.0	0.0	0.0	1.7	1.3
Kleenheat	866	943	529	562	512	549	13.3	13.5	6.9	7.4	6.0	6.8
Total	**814,764**	**708,134**	**706,516**	**716,528**	**744,990**	**555,704**						

Table 49: Gas main leak repairs

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ATCO	835	842	575	781	943	562
Esperance Power Station	2	0	0	2	1	1
Kleenheat	1	1	25	41	11	1
Total	**838**	**843**	**600**	**824**	**955**	**564**

Table 50: Gas meter leak repairs

Distributor	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ATCO	486	471	3,527[64]	3,209	3,415	1,801
Esperance Power Station	0	0	0	2	3	6
Kleenheat	0	2	0	44	1	5
Total	**486**	**473**	**3,527**	**3,255**	**3,419**	**1,812**

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

64 ATCO commented that “the increase in meter leaks is due to the inclusion of regulator leaks, which were previously included in the connection leaks statistic. During the reporting period, ATCO enhanced its reporting process to enable regulator leaks to be distinguished from other connection leaks, and more accurately categorising them as meter leaks”.

Table 51: Gas property service connection meter repairs

Distributor	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ATCO	6,614	7,182	5,575	6,040	5,815	5,776
Esperance Power Station	3	0	1	0	1	0
Kleenheat	0	0	42	5	25	4
Total	**6,614**	**7,182**	**5,618**	**6,045**	**5,841**	**5,780**

Table 52: Number of streetlights and streetlight faults logged by distributors in each region

	Total number of street lights						Street light faults logged					
	2012/13	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**
Metropolitan												
Horizon Power	5,993	8,325	8,022	8,332	8,066	7,866	108	149	158	130	163	189
Western Power	199,767	207,146	213,526	219,734	223,721	226,973	36,525	33,447	28,647	28,388	33,145	36,321
Total	**205,760**	**215,471**	**221,548**	**228,066**	**231,787**	**234,839**	**36,633**	**33,596**	**28,805**	**28,518**	**33,308**	**36,510**
Regional												
Horizon Power	10,331	11,298	11,007	11,092	11,255	11,202	166	168	177	183	248	261
Rottnest Island Authority	190	190	189	189	189	189	46	18	112	79	22	33
Western Power	37,907	38,539	39,202	39,769	39,931	40,363	3,414	3,220	3,428	4,061	1,549	2,825
Total	**48,428**	**50,027**	**50,398**	**51,050**	**51,375**	**51,754**	**3,626**	**3,406**	**3,717**	**4.323**	**1,819**	**3,119**

Table 53: Metropolitan and regional area streetlight faults that are repaired after the permitted timeframe in each region

	Number of faults fixed in > 5 days						Percentage					
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Metropolitan												
Horizon Power	13	30	10	21	25	28	7.8	20.1	6.3	16.2	15.3	14.8
Western Power	899	218	215	421	2,194	2,693	2.5	0.7	0.8	1.5	6.6	7.4
Total	**912**	**248**	**225**	**442**	**2,219**	**2,721**						
	Number of faults fixed in > 9 days						**Percentage**					
Regional												
Horizon Power	1	14	27	40	46	52	0.9	8.3	15.3	21.9	18.5	19.9
Rottnest Island Authority	11	4	0	7	1	0	23.9	22.2	0.0	8.9	4.5	0.0
Western Power	173	32	15	19	70	554	5.1	1.0	0.4	0.5	4.5	19.6
Total	**185**	**50**	**32**	**66**	**117**	**606**						

Appendix 4 - Additional information about distribution system reliability measures

NQ&R code reliability measures

Schedule 1, clauses 11 and 13 of the NQ&R code specify the system reliability measures that distributors are to report, and how to calculate them.

Clause 11 specifies four reliability measures:

- average total length of all interruptions of supply to customer premises expressed in minutes (this is equivalent to CAIDI).
- average length of interruption of supply to affected customer premises expressed in minutes (this is equivalent to SAIFI).
- average number of interruptions of supply to affected customer premises.
- average percentage of time that electricity has been supplied to customer premises (this is equivalent to SAIDI).

Clause 13(3) of 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.
- the average of the four (annual) values.

The calculation in clause 13 gives a four year average value for each of the measures in clause 11.

Distributors are required to report the four reliability measures in clause 11 for each discrete area of the State defined in Schedule 1, clause 2 of the NQ&R code:

- Perth CBD
- urban areas other than the Perth CBD
- all other areas of the State.

SCONRRR definitions of overall and normalised interruptions

The overall SAIDI, SAIFI and CAIDI measures all sustained interruptions (including those caused by generation outages, transmission outages, planned interruptions, unplanned interruptions and directed load shedding).

The normalised SAIDI, SAIFI and CAIDI measures unplanned sustained interruptions that are caused by factors under the control of the distributor. Unplanned interruptions caused by generation outages, transmission outages and directed load shedding are excluded, as are unplanned outages where the daily SAIDI exceeds the Major Event Day (MED) threshold.

Section 4.5 of Standard *IEEE 1366-2003 - Guide for Electric Power Distribution Reliability Indices, Institute for Electrical and Electronic Engineers* (IEEE 1366)[65] describes a statistical approach to calculate the SAIDI threshold for a MED. The calculation of the MED threshold

[65] IEEE 1366-2003 has been superseded by IEEE 1366-2012. The data provided by distributors in this report is based on IEEE 1366-2003.

is based on the SAIDI associated with all of the interruptions that occurred during the reporting period, which is typically one year.[66]

The purpose of calculating the MED threshold is to remove days where the daily system SAIDI is much larger than the distribution system average for the reporting period.[67] This approach allows major events to be separately studied from normal daily operation. This exposes trends in daily operation of the system that might otherwise be masked by the MEDs.[68]

It is important to note that, although the SAIDI is used to identify MEDs, the system SAIFI and CAIDI should be calculated based on the removal of the values of SAIFI and CAIDI for each of the MEDs.

The Australian Energy Regulator also uses standard IEEE 1366 to calculate normalised values for SAIDI, SAIFI and CAIDI for the distribution systems in the National Electricity Market (NEM).[69] Adopting IEEE 1366 to calculate the normalised system reliability of Western Australian distributors provides opportunities to benchmark their performance with that of comparable distributors in the NEM.

SCONRRR distribution feeder classifications

The table below provides the definitions for the four types of feeder in the SCONRRR framework.

Table 54: Distribution feeder classifications (SCONRRR)

Description			
CBD[70]	**Urban**	**Short Rural**	**Long Rural**
A feeder supplying predominantly commercial, high rise buildings, supplied by a predominantly underground distribution network containing significant interconnection and redundancy compared to urban areas.	A feeder, which is not a CBD feeder, with actual maximum demand over the reporting period per total feeder route length greater than 0.3MVA/km.	A feeder, which is not a CBD or urban feeder, with a total feeder route length less than 200km.	A feeder, which is not a CBD or urban feeder, with a total feeder route length greater than 200km.

[66] The reporting period used for this report is the year ending 30 June.

[67] The calculation of the MED threshold uses the natural logarithms of the daily SAIDI values. The MED threshold is set at 2.5 log-standard deviations above the log-average of the SAIDI data set for the reporting period.

[68] Some regulators require distributors to separately report on the cause(s) of interruptions that occurred during MEDs. Often MEDs result from severe weather events, bushfires and the failure of critical network infrastructure beyond the control of the distributor.

[69] The National Electricity Market covers the ACT, New South Wales, South Australia, Queensland, Tasmania and Victoria.

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

Appendix 5 - List of Tables

Appendix 6 - List of Figures