# Annual data report 2019/20

## Energy distributors

30 November 2020

Economic Regulation Authority
WESTERN AUSTRALIA

D222017

## Economic Regulation Authority

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# Chair's forward

The Economic Regulation Authority is Western Australia's economic regulator, and its responsibilities include administering the licensing schemes covering energy distributors.

Each year, the ERA reports to the Minister for Energy on trends in energy markets and indicators of energy distributors' performance, with a focus on reliability and customer service.

Performance reporting obligations apply only to distributors serving small-use customers, who are residential and small business customers consuming less than 160 megawatt hours of electricity or 1 terajoule of gas a year.

In 2019/20, the number of electricity distributors licensed to supply small use customers increased for the first time since the ERA assumed responsibility for licensing in 2005. In March 2020, the ERA granted an electricity distribution licence to Peel Renewable Energy Pty Ltd to supply small use customers through its microgrid.

Across the State, the downward trend in the number of new electricity and gas network connections, and in the amount of energy delivered, has continued.

There were 14,432 new customer connections to electricity networks in 2019/20, but this number of new electricity connections has been trending downwards for the six years reported. Similarly, there were 11,358 new customer connections to gas networks in 2019/20, continuing a downward trend observed over the past four years.

The energy delivered to customer connections on Western Power's distribution system was lower in 2019/20, down to 12,905 gigawatt-hours from 13,290 gigawatt-hours in 2018/19. Since 2015/16, the energy delivered to customer connections in the urban area has decreased by 18.2 per cent, which accounts for most of the overall reduction in energy delivered.

The annual energy delivered by the three gas distributors has remained relatively constant over the six years reported.

System reliability was affected by pole top fires in January 2020 and severe storms in February and May 2020. The number of Western Power's CBD and urban customer connections having more than the permitted nine interruptions and extended interruptions were the highest for the six years reported.

Regional reliability performance improved, with Horizon Power meeting the outage durations standards set in the relevant code for the second year running.

This report shows a sharp increase in the number of complaints received by Western Power, but this is due to the company including for the first time in its data complaints that were resolved at the first point of contact. Horizon Power reported a 49 per cent increase in complaints about administrative and customer service matters.

The number of faulty metropolitan and regional streetlights reported by Western Power in 2019/20 was the highest in the six years reported, mostly due to increased reporting by local government authorities and the public.

Both Horizon Power and Western Power reported increases in the percentage of metropolitan streetlights repaired after the benchmark five business days in 2019/20, reaching the highest levels in the six years reported.

Nicola Cusworth
**Chair, Economic Regulation Authority**

# 1. Energy distribution market overview

**Main points**

- The number of electricity distributors licensed to supply small use customers increased for the first time since the ERA assumed responsibility for licensing in 2005.
- In March 2020, the ERA granted an electricity distribution licence to Peel Renewable Energy Pty Ltd to supply small use customers through its microgrid.
- The downward trend in the number of new electricity and gas network connections has continued.

This section provides an overview of the energy distributors market in Western Australia, with a focus on the:

- number of licenced distributors supplying small use electricity and gas customers[1]
- number of small use electricity and gas customer connections.

## 1.1 Energy distributors

In 2019/20, the number of electricity distributors licenced to supply small use customers changed for the first time since the licensing scheme commenced in 2005. On 5 March 2020, the ERA granted an electricity distribution licence to Peel Renewable Energy Pty Ltd to supply small use customers.[2]

Electricity distribution licensees that supply small use customers are:

- Horizon Power
- Rottnest Island Authority
- Western Power
- Peel Renewable Energy Pty Ltd.[3]

The number of licenced gas distributors has not changed since the ERA took over the responsibility for licensing gas distributors in 2005.

Holders of gas distribution licences are:

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

1 A small use electricity customer is a customer who consumes less than 160 megawatt hours of electricity per year and a small use gas customer is a customer who consumes less than 1 terajoule of gas per year.

2 Electricity distribution licence EDL7 was granted to Enwave WA Pty Ltd. On 23 September 2020, the ERA approved a minor amendment to EDL7 to change the licensee's registered name from Enwave WA Pty Ltd to Peel Renewable Energy Pty Ltd.

3 This report does not include performance data for Peel Renewable Energy, as they were licensed only for part of the reporting year.

## 1.2 Connections on electricity distribution systems

Table 1 shows the total number of customer connections on each electricity distributor's system.[4]

**Table 1: Electricity connections by distributor at 30 June 2015 to 2020**

| | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|---|
| Horizon Power | 47,832 | 47,168 | 48,748 | 48,981 | 50,635 | 48,243 |
| Rottnest Island Authority | 527 | 527 | 528 | 528 | 529 | 529 |
| Western Power | 1,085,657 | 1,110,196 | 1,128,334 | 1,141,308 | 1,152,904 | 1,162,601 |
| **Total** | **1,134,016** | **1,157,891** | **1,177,610** | **1,190,817** | **1,204,068** | **1,211,373** |

There were 14,432 new customer connections to electricity networks in 2019/20. The annual increase in the number of new electricity connections has been trending downwards for the six years reported.[5]

Horizon Power has reported substantial reductions in the number of customer connections twice in the six years reported, between 2014/15 and 2015/16 and between 2018/19 and 2019/20.

In Horizon Power's 2020 performance audit for its electricity integrated regional licence EIRL2, the ERA required that particular focus be given to the effectiveness of the processes and systems Horizon Power uses to prepare its annual performance data for the ERA.[6] The audit found that Horizon Power had adequate controls in place to comply with the obligations that the data is based on. However, because Horizon Power did not retain the source of data it used to prepare its annual performance reports, the auditor could not replicate the calculations used by Horizon Power to prepare its reports to the ERA and compare them with the data reported to the ERA.

## 1.3 Connections on gas distribution systems

Table 2 shows the number of connections on each gas distributor's system.

**Table 2: Gas connections by distributor at 30 June 2015 to 2020**

| | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|---|
| ATCO | 714,488 | 736,746 | 750,339 | 760,355 | 769,597 | 772,861 |
| Esperance Power Station | 357 | 376 | 383 | 385 | 375 | 376 |
| Kleenheat | 922 | 958 | 1,006 | 1,048 | 1,071 | 1,103 |
| **Total** | **715,767** | **738,080** | **751,728** | **761,788** | **771,043** | **774,340** |

4 Throughout this report, the term "customer connection" means a small use customer connection.

5 Refer to indicator CCD1 in the Customer Connections tab of the distributor data published on the ERA website.

6 The 2020 operational audit is available on the ERA website.

There were 11,358 new customer connections to gas networks in 2019/20. As with electricity, the annual increase in the number of new gas connections has trended downwards for the past four years.[7]

[7] Refer to indicator D1 in the Customer Connections tab of the distributor data published on the ERA website.

# 2. Electricity distribution system reliability

**Main points**

- Pole top fires in January 2020 and severe storms in February and May 2020 in areas supplied by Western Power caused a substantial increase in the number of supply interruptions.
- The number of Western Power's CBD and urban customer connections having more than the permitted nine interruptions and extended interruptions were the highest for the six years reported.
- This is the second consecutive year that Horizon Power has met the outage duration standard for rural systems in the NQ&R Code.

Electricity distributors are required to report on the reliability of electricity supply 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.[8]

## 2.1 NQ&R Code specific reliability measures

The NQ&R Code requires distributors to report on the duration 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) and urban areas.[9]
  - 16 interruptions per year in all other areas of Western Australia.

For consistency, this report refers to "customer premises" as "customer connections" in the discussion on NQ&R Code reliability measures.

The NQ&R Code reliability measures include all supply interruptions regardless of their cause. Some interruptions are caused by factors that are within the control of the distributor, such as asset failures caused by inadequate maintenance practices and not replacing ageing or poorly performing assets in a timely manner. Other supply interruptions are caused by factors outside the reasonable control of the distributor, such as severe weather and third-party damage to distribution infrastructure. Including all supply interruptions means the distributor is reporting on the actual customer experience.

[8] 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).

[9] The CBD is the area supplied by the Milligan Street Zone Substation and the Hay Street Zone Substation, both operated by Western Power.

## 2.2 Common NQ&R Code and SCONRRR framework reliability measures

The SCONRRR framework and NQ&R Code both measure distribution system reliability through two main performance indicators:[10, 11]

- System Average Interruption Duration Index (SAIDI): the average total duration of supply interruptions across all customer connections on the network.
- System Average Interruption Frequency Index (SAIFI): the average number of supply interruptions across all customer connection on the network.

Section 13(2) of the NQ&R Code includes standards for the average total duration of interruptions in the three defined areas of the State:[12, 13]

- Perth CBD – 30 minutes
- urban areas other than the Perth CBD – 160 minutes[14]
- any other area of the State (rural areas) – 290 minutes.[15]

The standard for each area takes into account the level of interconnection and available capacity factored into the design of the distribution systems.

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

Western Power is also subject to reliability performance standards other than the NQ&R Code, which are set in its access arrangement service standard benchmarks.[16]

Further information on distribution system reliability measures is in Appendix 3.

10 The definition of the measures is in *Standard IEEE 1366-2003 – Guide for Electricity Power Distribution Reliability Indices, Institute for Electrical and Electronic Engineers*.

11 The NQ&R Code does not use the terms SAIDI, SAIFI and CAIDI. See Appendix 3 for information about the NQ&R Code measures of reliability.

12 This is equivalent to the SAIDI for the group of feeders supplying customer connections in each geographical area.

13 See Appendix 3 for more information about how the standard is calculated.

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

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

16 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.

## 2.3 System reliability – NQ&R Code

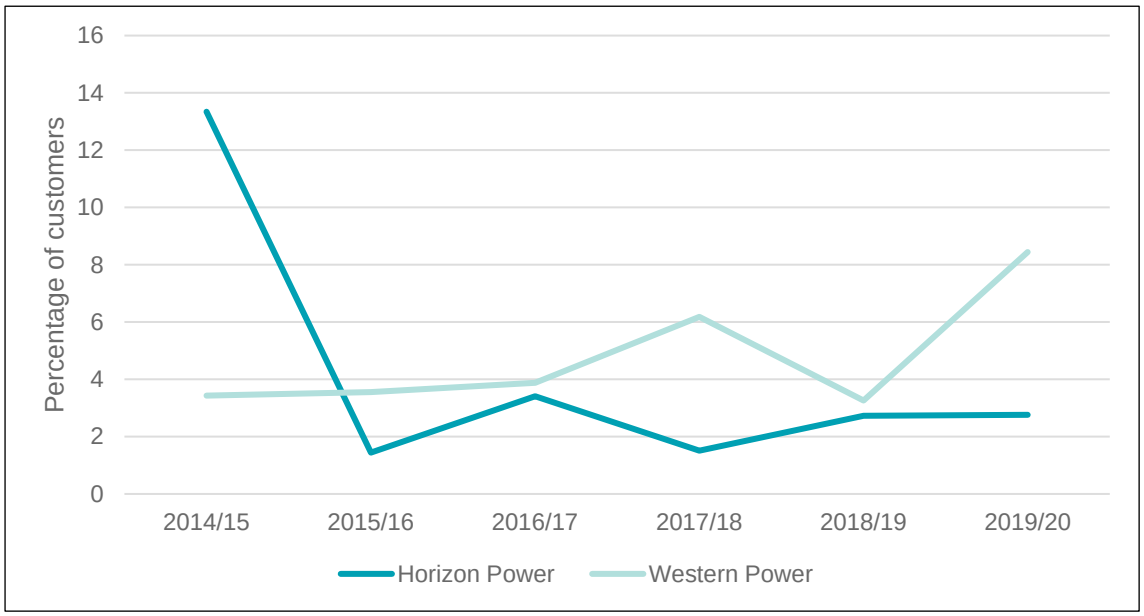
Data for Figures 1, 2, 3, 4 and 5 is in the energy distributor dataset published by the ERA.[17]

### *2.3.1 Extended interruptions*

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

Figure 1 shows the percentage of customer connections on the Horizon Power and Western Power distribution systems that had an extended interruption.[18]

**Figure 1: Horizon Power and Western Power extended interruptions 2015 to 2020 (%)**




The number of customer connections supplied by Western Power that had extended interruptions in 2019/20 was the highest for the six years reported, at 8.4 per cent (98,159 premises). Western Power attributed the increase to severe storms in February and May 2020 and pole top fires in January 2020.

### *2.3.2 Multiple interruptions*

Figure 2 shows the number of customer connections that had more than the permitted number of interruptions (nine) in the Perth CBD and urban areas.[19]

In 2019/20, 15,808 customer connections had more than nine interruptions, up from 1,266 connections in 2018/19, due to severe storms in February and May 2020 and pole top fires in January 2020.

17 Economic Regulation Authority, Energy Distributor Dataset – 2015 – 2020, Network Reliability (online).

18 The Rottnest Island Authority is excluded from Figure 1, because it has reported zero extended interruptions on its system in the past six years.

19 Western Power is the only distributor that supplies the Perth CBD and urban areas.

**Figure 2: Multiple supply interruptions on electricity distribution systems – CBD and urban 2015 to 2020**

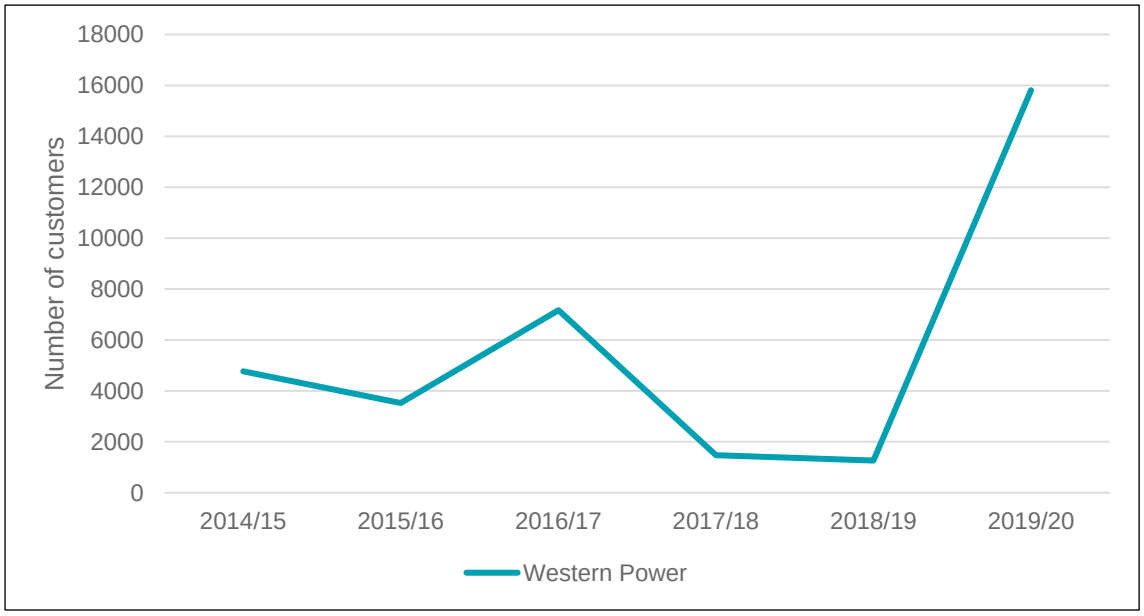
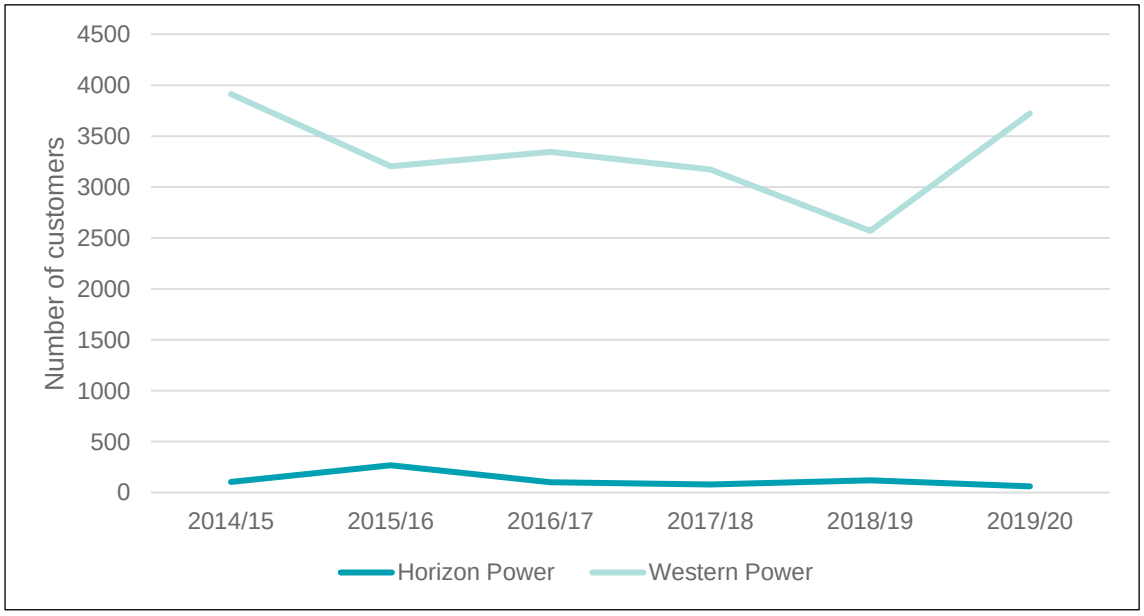



Figure 3 shows the number of customer connections that had more than the permitted number of interruptions (16) in rural areas, where all three distributors have distribution systems.[20]

**Figure 3: Multiple supply interruptions on electricity distribution systems – rural 2015 to 2020**




The 61 customer connections on the Horizon Power networks that had more than 16 supply interruptions in 2019/20 were the lowest for the six years reported. The increase reported by Western Power was due to severe storms in February and May 2020 and pole top fires in January 2020.

[20] The Rottnest Island Authority has been excluded from Figure 3, because it reported that none of its connections had more than 16 interruptions during the year.

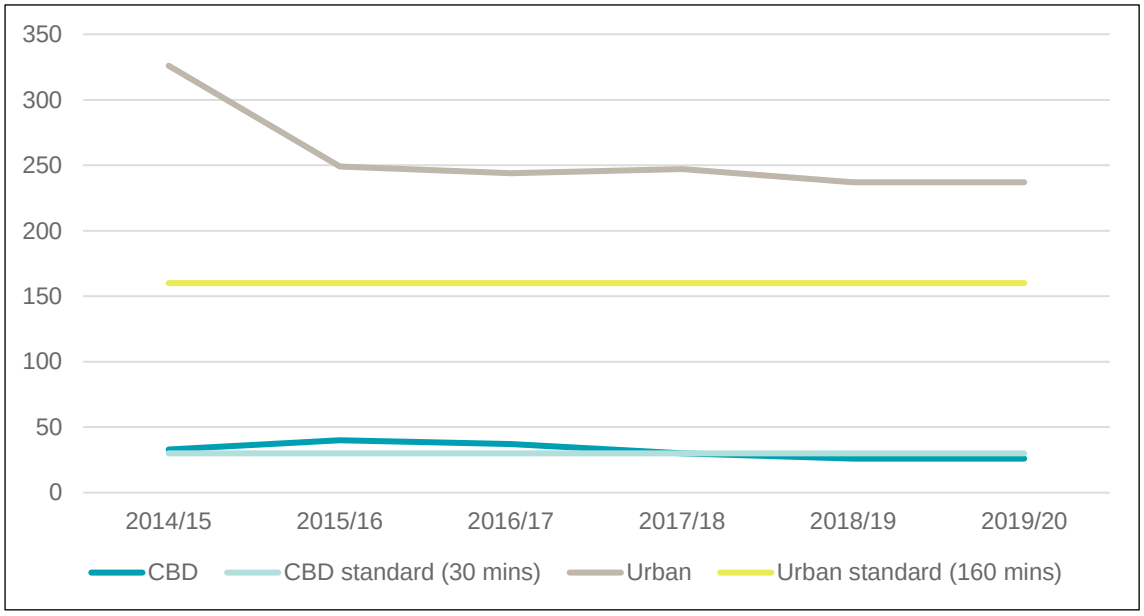
### 2.3.3 System reliability

#### 2.3.3.1 System Average Interruption Duration Index

Western Power is the only distributor that supplies customer connections in the Perth CBD and urban areas.

Figure 4 shows the average total duration of interruptions per connection (SAIDI) and compares them to the applicable standards in section 13 of the NQ&R Code.

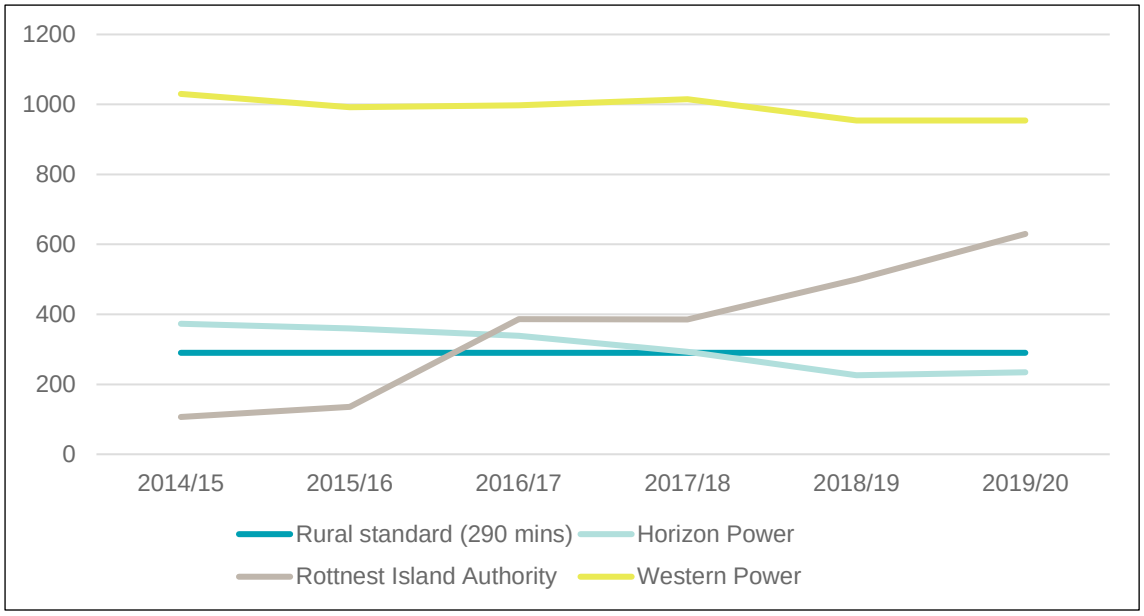
**Figure 4: Average total duration of interruptions per connection (SAIDI) in CBD and urban areas 2015 to 2020 (minutes)**




This was the third consecutive year that Western Power met the NQ&R Code's CBD SAIDI standard, but it has not met the NQ&R Code's SAIDI standard of 160 minutes for urban areas in any of the six years reported.

Figure 5 shows the average total duration of interruptions per connection (SAIDI) on distribution systems located in rural areas for each distributor.

**Figure 5: Average total duration of interruptions per connection (SAIDI) in rural areas 2015 to 2020 (minutes)**




Western Power has not met the NQ&R Code's standard for rural systems in any of the six years reported. As can be seen in section 2.4.1, Western Power's SAIDI performance considerably improves when it is normalised (see the discussion in section 2.1).

The Rottnest Island Authority's SAIDI performance has deteriorated for the second consecutive year, reaching 630 minutes in 2019/20.

This is the second consecutive year that Horizon Power has met the NQ&R Code's SAIDI standard for rural systems.

## 2.4 System reliability – SCONRRR framework

The SCONRRR reliability framework requires distributors to report on overall supply interruptions (which captures all interruptions regardless of cause) and normalised supply interruptions.

The benefit of reporting on overall supply interruptions is discussed in section 2.1. The normalised supply interruptions measurement in the SCONRRR framework removes all supply interruptions that were caused by factors outside the reasonable control of the distributor. The remaining supply interruptions are assumed to be caused by factors under the control of the distributor, such as asset failures caused by inadequate maintenance practices and not replacing aging or poorly performing assets in a timely manner. It is normal practice to use normalised reliability data to assess the reliability performance of distributors, particularly when comparing or benchmarking distributor performance.

### *2.4.1 System Average Interruption Duration Index*

SAIDI measures the average total duration of supply interruptions (in minutes) across all customer connections on a distribution system. The total network SAIDI is a weighted average value, with the weighting based on the proportion of total customer connections served by each of the distribution system feeder types.

Table 3 shows the overall and normalised SAIDI values by feeder class for each distributor for 2019/20.

**Table 3: Overall and normalised SAIDI by electricity distributor for 2019/20**

| Overall SAIDI (minutes per annum) | | | | | |
|---|---|---|---|---|---|
| | **Total network** | **CBD** | **Urban** | **Short rural** | **Long rural** |
| Horizon Power | 315 | n/a | 200 | 309 | 949 |
| Rottnest Island Authority | 864 | n/a | n/a | 864 | n/a |
| Western Power | 531 | 52 | 345 | 531 | 1905 |
| **Normalised SAIDI (minutes per annum)** | | | | | |
| | **Total network** | **CBD** | **Urban** | **Short rural** | **Long rural** |
| Horizon Power | 135 | n/a | 44 | 121 | 800 |
| Rottnest Island Authority | 0 | n/a | n/a | 0 | n/a |
| Western Power | 209 | 23 | 134 | 218 | 738 |

n/a – The distributor does not operate feeders of this type

Figures 6, 7, 8 and 9 compare the past six years of overall and normalised SAIDI values for the CBD, urban, short rural and long rural feeder classes, respectively, for Horizon Power and Western Power. Data for Figures 6, 7, 8 and 9 is in the energy distributor dataset published by the ERA (including the Rottnest Island Authority).[21, 22]

The value of the 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.[23] Long and short rural feeders tend not to have any redundancy, and are often in remote locations, which increases the time to repair faults.

21 Economic Regulation Authority, Energy Distributor Dataset – 2015 – 2020, Network Reliability (online).

22 The Rottnest Island Authority has been excluded from Figure 8 because it has reported zero minutes of normalised SAIDI for each of the last six years.

23 Redundancy is often achieved by designing spare capacity into the feeders in a network. If a feeder fails, the energy that would normally flow through it is delivered to customers via other designated feeders that have spare capacity reserved for the purpose.

**Figure 6: Overall and normalised SAIDI by electricity distributor – CBD 2015 to 2020**

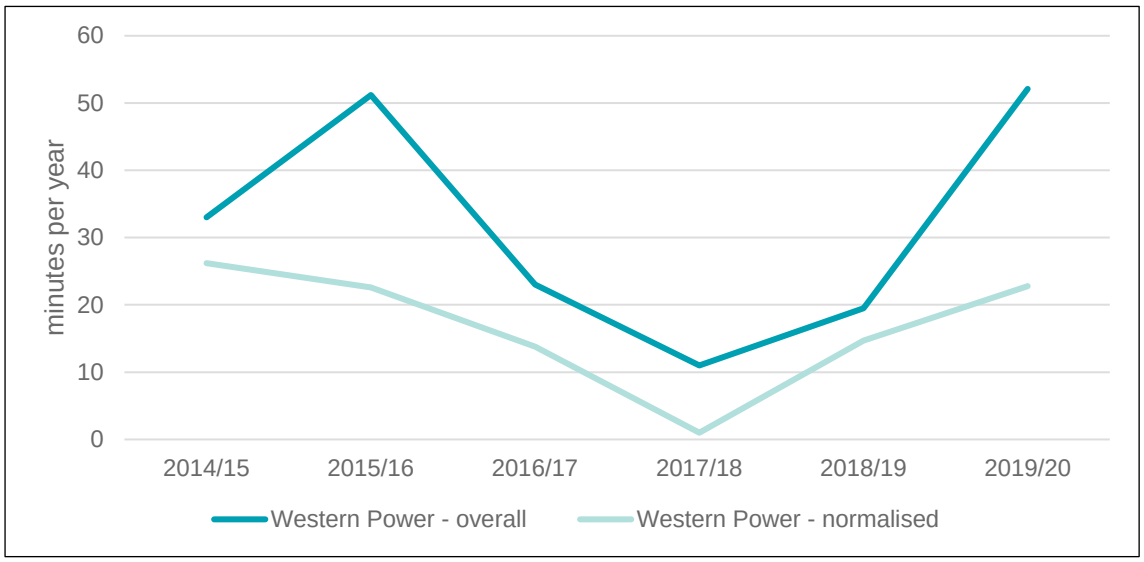



**Figure 7: Overall and normalised SAIDI by electricity distributor – urban 2015 to 2020**

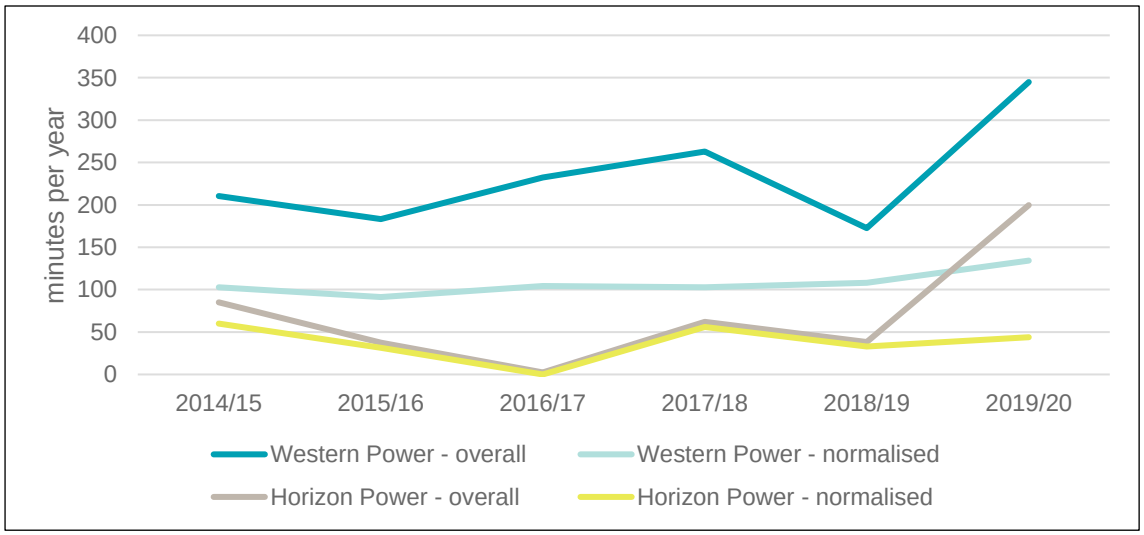



**Figure 8: Overall and normalised SAIDI by electricity distributor – short rural 2015 to 2020**

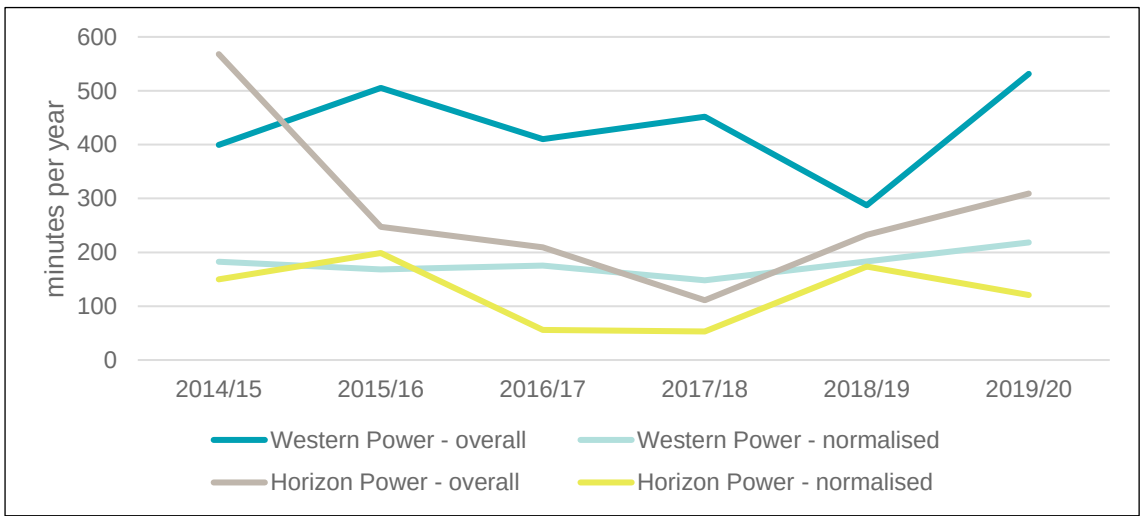
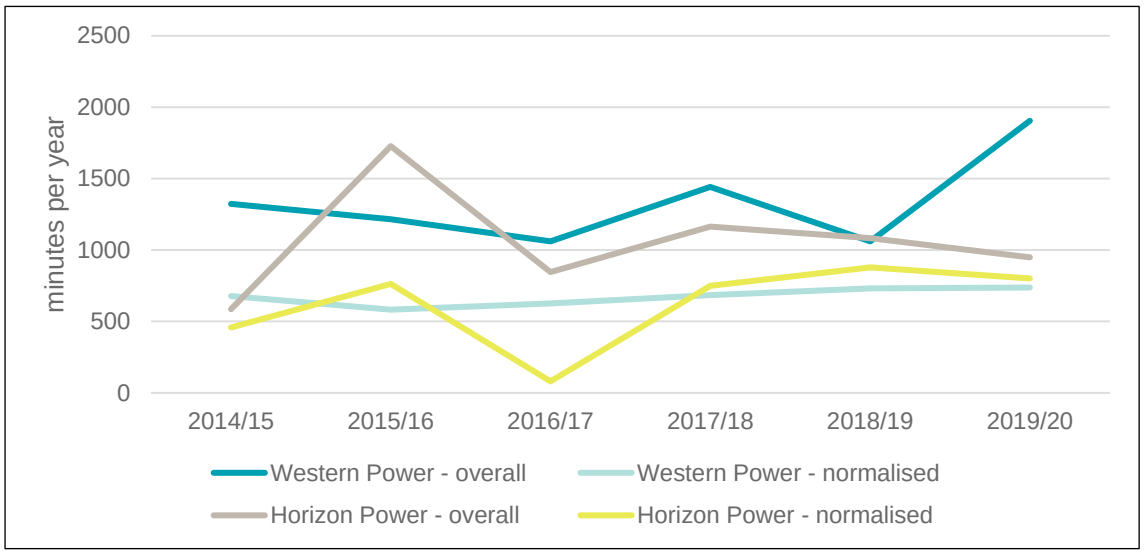


**Figure 9: Overall and normalised SAIDI by electricity distributor – long rural 2015 to 2020**




The normalisation process has resulted in the values of normalised SAIDI being lower than the overall SAIDI for all classes of feeder.

### 2.4.2 System Average Interruption Frequency Index

SAIFI measures average number of supply interruptions across all customer connections. 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.

Table 4 shows the overall and normalised SAIFI values by feeder class for each distributor in 2019/20.

**Table 4: Overall and normalised SAIFI for each electricity distributor in 2019/20**

| **Overall distribution network – SAIFI (per year)** | | | | | |
|---|---|---|---|---|---|
| | **Total network** | **CBD** | **Urban** | **Short rural** | **Long rural** |
| Horizon Power | 2.5 | n/a | 1.2 | 2.5 | 9.6 |
| Rottnest Island Authority | 9.0 | n/a | n/a | 9.0 | n/a |
| Western Power | 2.9 | 0.4 | 2.2 | 3.1 | 7.0 |
| **Normalised distribution network – SAIFI (per year)** | | | | | |
| | **Total network** | **CBD** | **Urban** | **Short rural** | **Long rural** |
| Horizon Power | 2.0 | n/a | 0.7 | 1.9 | 8.7 |
| Rottnest Island Authority | 0.0 | n/a | n/a | 0.0 | n/a |
| Western Power | 1.6 | 0.2 | 1.1 | 2.1 | 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 10, 11, 12 and 13 compare the past six years of overall and normalised SAIFI values for the CBD, urban, short rural and long rural feeder classes, respectively, for Horizon Power and Western Power. Data for Figures, 10, 11, 12 and 13 is in the energy distributor dataset published by the ERA (including the Rottnest Island Authority).[24, 25]

**Figure 10: Overall and normalised SAIFI by electricity distributor – CBD 2015 to 2020**

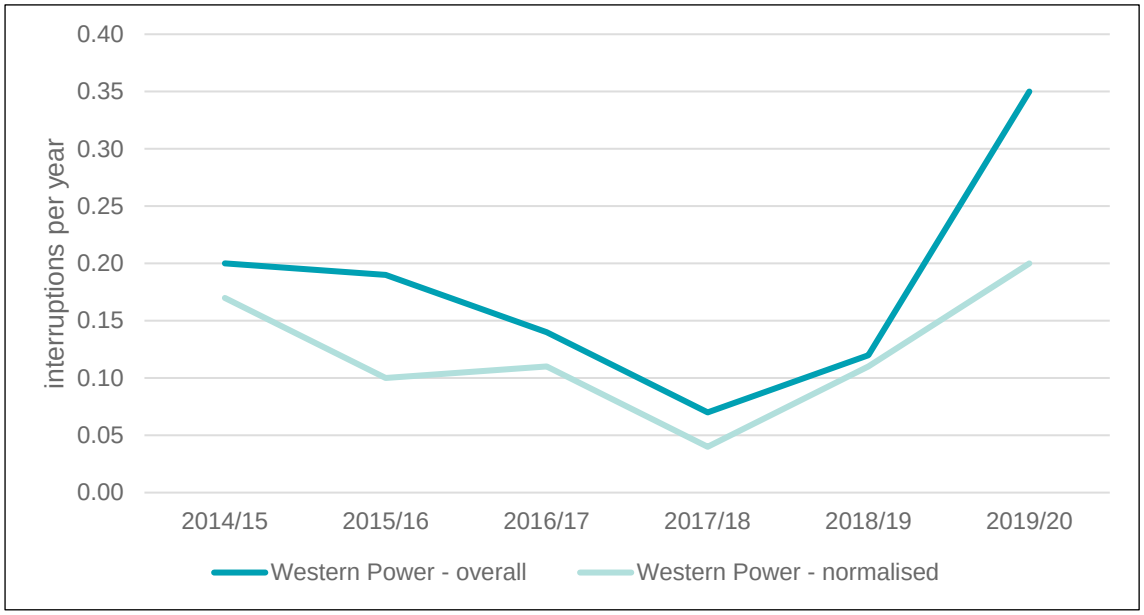
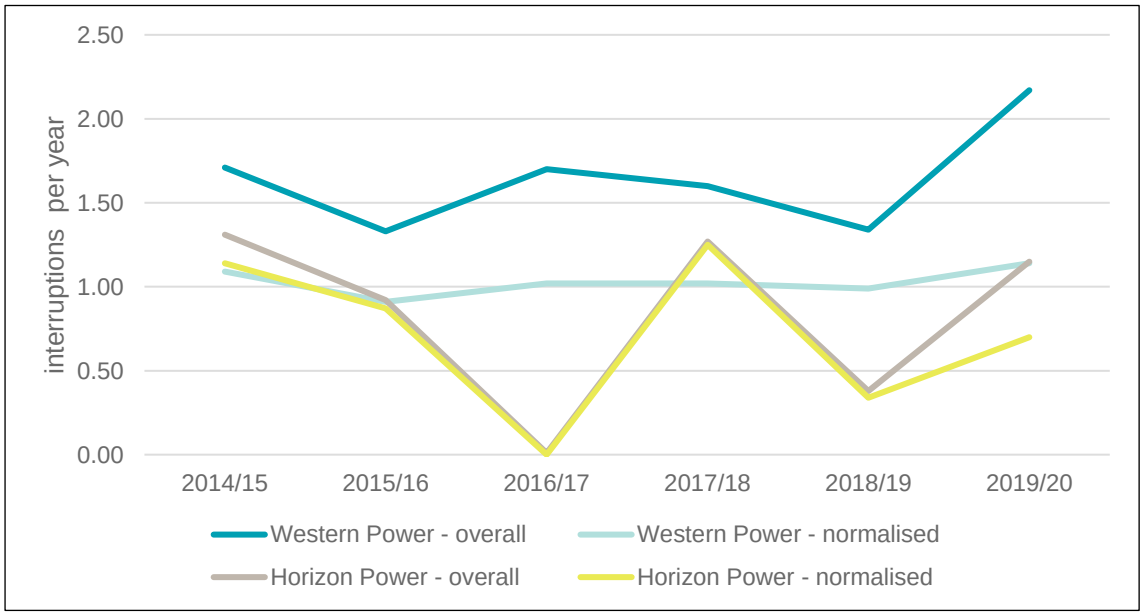



**Figure 11: Overall and normalised SAIFI by electricity distributor – urban 2015 to 2020**




24 Economic Regulation Authority, Energy Distributor Dataset – 2015 – 2020, Network Reliability (online).

25 The Rottnest Island Authority has been excluded from Figure 12 because it has reported zero normalised SAIFI for each of the last six years.

**Figure 12: Overall and normalised SAIFI by electricity distributor – short rural 2015 to 2020**

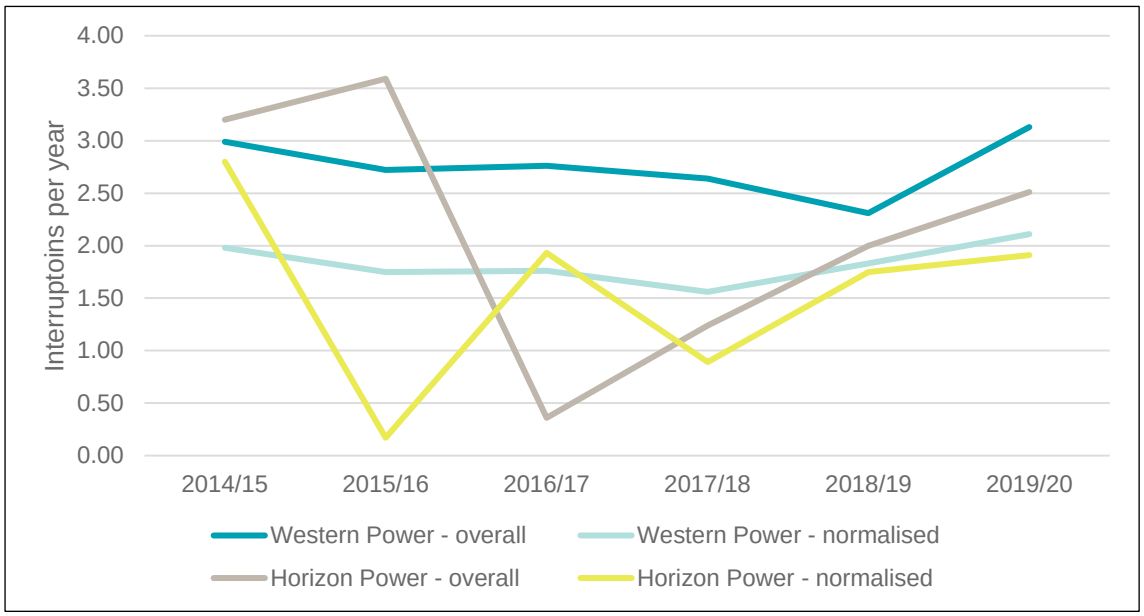
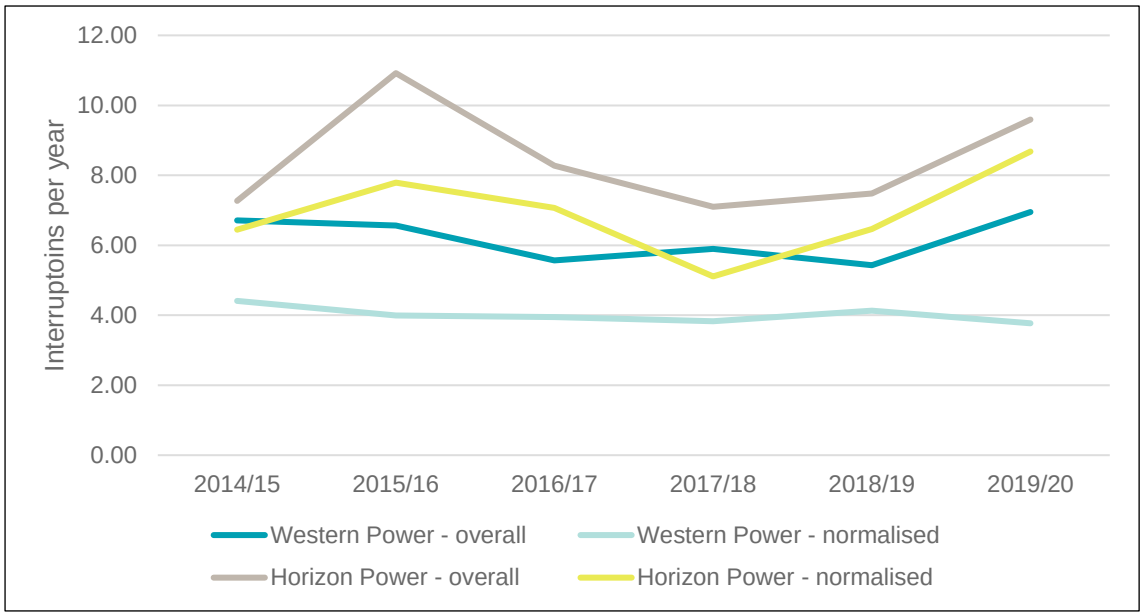



**Figure 13: Overall and normalised SAIFI by electricity distributor – long rural 2015 to 2020**




Comparing the SAIDI and SAIFI data shows the change in the values of SAIFI each year mostly follows the same pattern as the SAIDI values. The 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 significantly better than both their overall performance and the performance reported under the NQ&R Code.[26]

[26] Economic Regulation Authority, Energy Distributor Datasheet 2015 – 2020, Network Reliability, indicator NQR4 (online).

# 3. Gas distribution system reliability

**Main points**

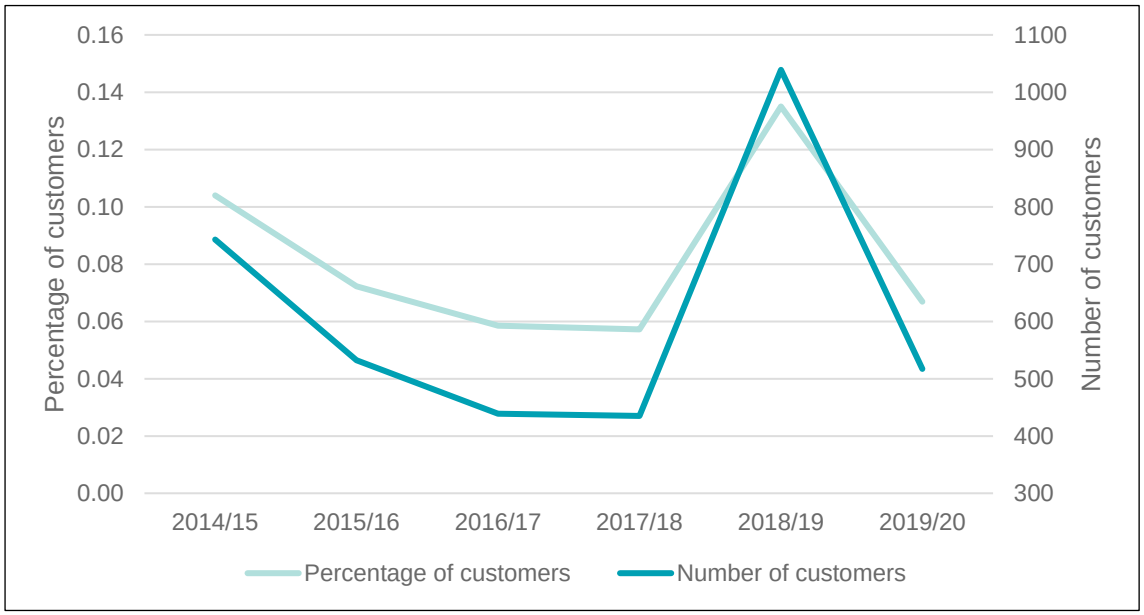
- Fewer than 0.1 per cent of ATCO customer connections experienced extended interruptions due to network outages in 2019/20.

Gas distributors are required to report on the number of customer connections with interruptions that exceed 12 hours continuously. These are referred to as extended interruptions.

## 3.1 Extended interruptions

Figure 14 shows the number and percentage of ATCO customer connections that had an extended interruption.

**Figure 14: ATCO extended interruptions 2015 to 2020 (%)**




In 2019/20, 517 ATCO customer connections had an extended interruption, which is much less than the 1,039 connections in 2018/19.[27]

Kleenheat reported that one customer connection had an extended interruption in 2019/20.

Esperance Power Station has not reported any extended interruptions in the past six years.

[27] ATCO reported that the large increase in 2018/19 was due to a major gas outage in August 2018 that affected 705 customer connections.

# 4. Energy delivered

**Main points**

- The energy delivered to customer connections on Western Power's distribution system continued its downward trend. 12,905 gigawatt-hours were delivered in 2019/20.
- The total electricity delivered to customer connections on the Rottnest Island Authority's distribution system in 2019/20 (5.7 gigawatt-hours) was the highest for the six years reported.
- The annual energy delivered by the three gas distributors has remained relatively constant over the six years reported.

Gas and electricity distributors report on the amount of energy delivered to customer connections on their distribution systems, measured as gigajoules of gas and gigawatt-hours of electricity, respectively.

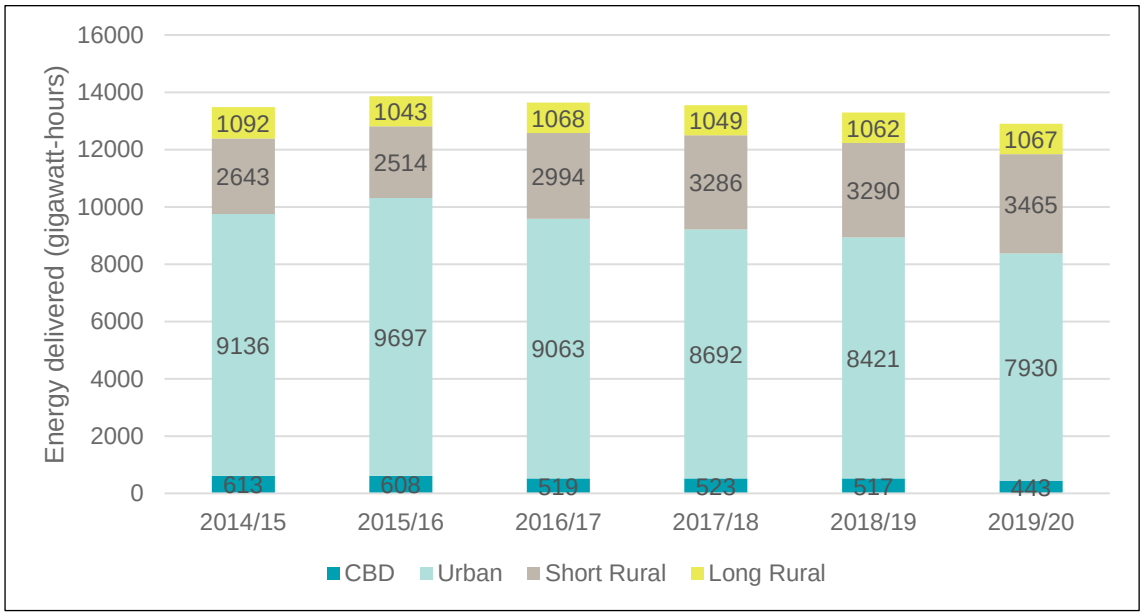
## 4.1 Energy delivered by electricity distributors

Data is provided separately for:

- Western Power
- Rottnest Island Authority
- Horizon Power.

Figure 15 shows the amount of energy delivered to Western Power's customer connections, broken down by feeder class.

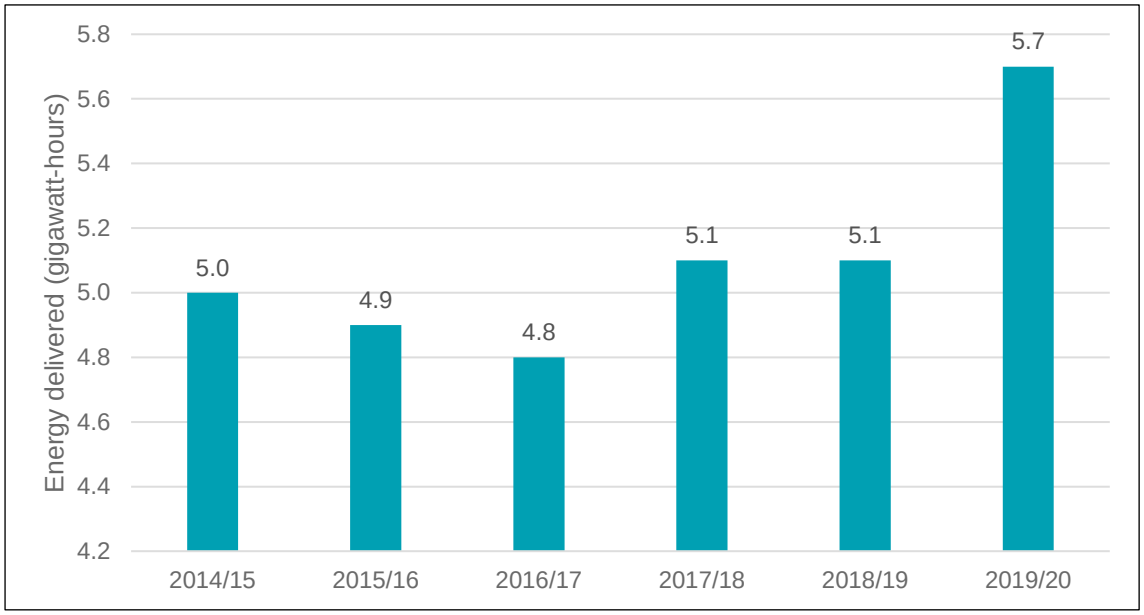
**Figure 15: Energy delivered by Western Power by feeder type 2015 to 2020**




The energy delivered to customer connections on Western Power's distribution system has continued to trend downwards, reaching 12,905 gigawatt-hours in 2019/20. Since 2015/16, the energy delivered to customer connections on urban feeders has decreased by 18.2 per cent, which accounts for most of the overall reduction in energy delivered.

Figure 16 shows the amount of energy delivered to customer connections on the Rottnest Island Authority's short rural feeders.

**Figure 16: Energy delivered by Rottnest Island Authority 2015 to 2020**

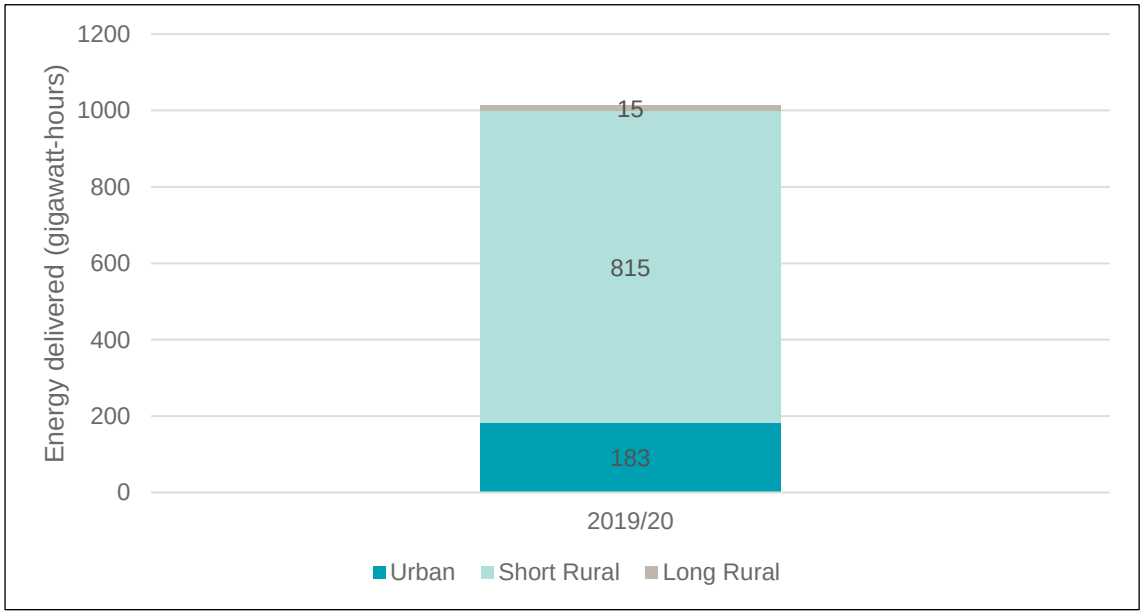



The total energy delivered to customer connections on the Rottnest Island Authority's distribution system in 2019/20 was the highest for the six years reported.

Figure 17 shows the amount of energy delivered to Horizon Power's customer connections, broken down by feeder class.

This is the first year that Horizon Power has been able to supply energy delivered data. Previously, it was unable to separate the energy delivered to small use customers from other customers for each feeder category.

**Figure 17: Energy delivered by Horizon Power 2020**



## 4.2 Energy delivered by gas distributors

Energy delivered data is provided separately for:

- ATCO
- Esperance Power Station
- Kleenheat.

Figure 18 shows the amount of energy delivered by ATCO to residential and non-residential customer connections.[28]

**Figure 18: Energy delivered by ATCO 2015 to 2020**

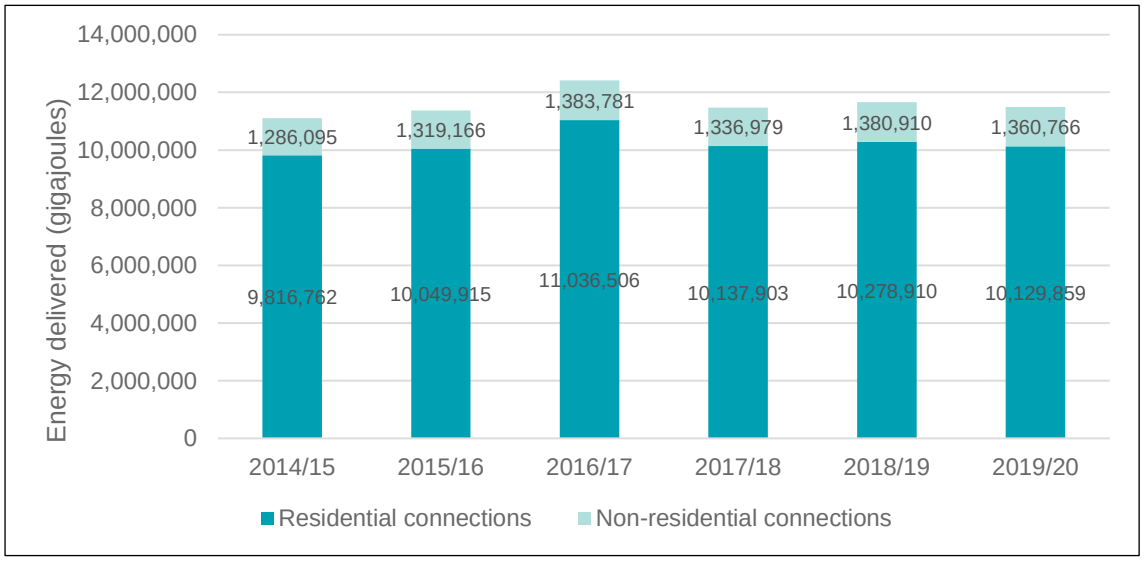
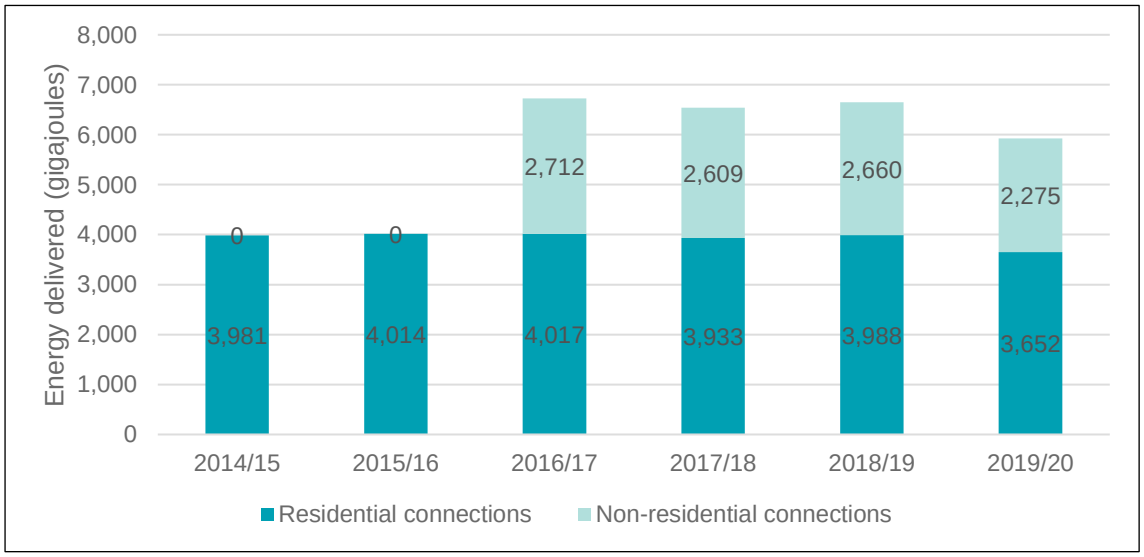



Figure 19 shows the amount of energy delivered by Esperance Power Station to residential and non-residential customer connections.

**Figure 19: Energy delivered by Esperance Power Station 2015 to 2020**

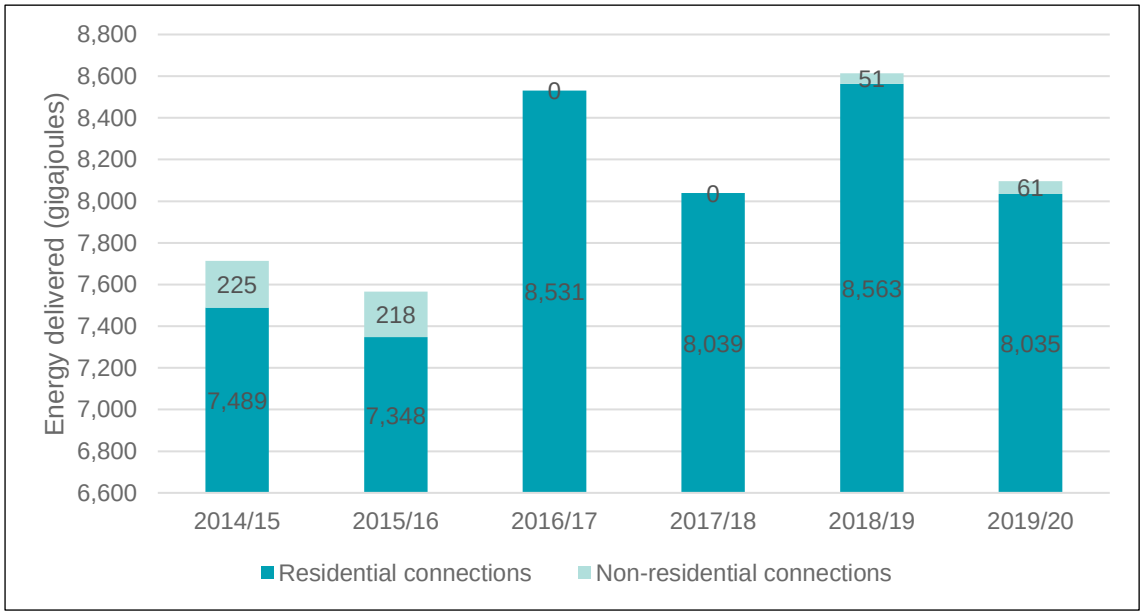



[28] ATCO's gas consumption data is measured over a calendar year. For example, the consumption data for 2019/20 period is in fact for the 2019 calendar year.

The energy delivered to non-residential customer connections in 2014/15 and 2015/16 has been removed from Figure 19, because it included energy delivered to customers not covered by Esperance Power Station's licence.[29]

Figure 20 shows the amount of energy delivered by Kleenheat to residential and non-residential customer connections.

**Figure 20: Energy delivered by Kleenheat 2015 to 2020**




[29] Customers who consumed 1 terajoule or more of gas per year.

# 5. Customer service

**Main points**

- The number of complaints about electricity code matters received by Horizon Power and Western Power in 2019/20 was the highest for the six years reported.
- Complaints about administrative and customer service matters received by Horizon Power have increased by 49 per cent in 2019/20.
- Complaints about other matters received by Western Power have increased by 361 per cent in 2019/20 due to, for the first time, including complaints that were resolved at the first point of contact.
- Complaints about NQ&R Code matters received by Western Power have increased by 352 per cent in 2019/20, due to including complaints resolved at the first point of contact.
- The percentage of calls received by the ATCO answered within 30 seconds (73.2 per cent) in 2019/20 was the lowest for the six years reported.

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 ISO 10002-2014 Guidelines for compliant management organisations*.

Customer service is reported on by energy distributors in terms of the number of complaints and call centre performance.

## 5.1 Electricity complaints

The electricity code requires distributors to report complaints information specified by the ERA.[30] The ERA has specified two categories of complaints:

- Administrative process or customer service complaints: includes meter reading issues, the timeliness or 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 focuses 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.[31]

### *5.1.1 Electricity code complaints*

Table 5 shows the number of complaints about electricity code matters received by Horizon Power and Western Power.[32]

30 The specification of complaints reporting obligations is in the ERA's *Electricity Distribution Licence Performance Reporting Handbook*.

31 These standards are in Part 2 or an instrument made under section 14(2) of the NQ&R Code.

32 Because it has received no complaints in the past six years, Rottnest Island Authority has been excluded from the table.

**Table 5: Complaints received by electricity distributors (electricity code) 2015 to 2020**

| | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|---|
| **Horizon Power**[33] | | | | | | |
| Administrative and customer service complaints | 168 | 506 | 263 | 114 | 992 | 1,480 |
| Other complaints | 76 | 121 | 8 | 7 | 49 | 43 |
| **Total complaints** | **244** | **627** | **271** | **121** | **1,041** | **1,523** |
| **Western Power** | | | | | | |
| Administrative and customer service complaints | 68 | 140 | 258 | 295 | 343 | 253 |
| Other complaints | 592 | 500 | 643 | 578 | 599 | 2,762 |
| **Total complaints** | **660** | **640** | **901** | **873** | **942** | **3,015** |

The number of complaints about electricity code matters received by both distributors in 2019/20 was the highest for the six years reported.

The increase in complaints received by Horizon Power was due to a 49 per cent increase in administrative and customer service complaints and the increase in complaints received by Western Power was due to a 361 per cent increase in other complaints.

Western Power reported that the increase in complaints received was because, for the first time, it included complaints that were resolved at first point of contact.[34]

### *5.1.2 NQ&R Code complaints*

Table 6 shows the number of complaints about NQ&R Code matters received by Horizon Power and Western Power.[35]

**Table 6: Complaints received by electricity distributors (NQ&R Code) 2015 to 2020**

| | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|---|
| Horizon Power | 32 | 34 | 111 | 27 | 76 | 56 |
| Western Power | 975 | 693 | 728 | 920 | 955 | 4,315 |
| **Total complaints** | **1,007** | **727** | **839** | **947** | **1,031** | **4,371** |

[33] Horizon Power's complaints data since 2013/14 is the combined total of complaints about their retail and distribution services, following a change of call centre service provider.

[34] Licensees are required to include all complaints received from customers, including those that are resolved at the first point of contact. For more information refer to section 4.3.4 of the ERA's 2019 *Electricity Distribution Licence Performance Reporting Handbook*.

[35] Because it has only received one complaint in the past six years, Rottnest Island Authority has been excluded from the table.

Complaints received by Western Power in 2019/20 increased by 352 per cent due to the inclusion of complaints that were resolved at first point of contact.[36]

## 5.2 Gas complaints

The complaint reporting obligations for gas distributors are contained in the ERA's reporting handbook.[37]

Table 7 shows the total number of complaints across the six categories specified in the gas reporting handbook received by ATCO and Kleenheat.[38]

**Table 7: Complaints received by gas distributors 2015 to 2020**

| | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|---|
| ATCO | 236 | 513 | 516 | 431 | 371 | 299 |
| Kleenheat | 3 | 1 | 4 | 4 | 12 | 1 |
| **Total** | **239** | **514** | **520** | **435** | **383** | **300** |

Table 8 categorises the complaints received by ATCO and Kleenheat in 2019/20.

**Table 8: Categorisation of complaints received by gas distributors in 2019/20**

| Complaint category | ATCO | Kleenheat |
|---|---|---|
| Connection and augmentation | 7 | 0 |
| Reliability of supply | 4 | 1 |
| Quality of supply | 1 | 0 |
| Network charges and costs | 20 | 0 |
| Administrative processes or customer service | 132 | 0 |
| Other | 135 | 0 |
| **Total** | **299** | **1** |

## 5.3 Call centre performance

Many customer interactions with distributors are by telephone. How responsive a distributor is to telephone calls is an important indicator of customer service. Distributors operate different types of call centres, depending on the number of calls they receive from customers.

36 See footnote 32.

37 Economic Regulation Authority, 2019, *Gas Distribution Licence Performance Reporting Handbook*, pp. 10-11.

38 Because it has only received two complaints in the past six years, Esperance Power Station has been excluded from the table.

### 5.3.1 Electricity distributor call centre performance

Western Power operates an in-house call centre. The Rottnest Island Authority and Horizon Power both outsource their call centre services.

The Rottnest Island Authority was unable to provide call centre data this year, because its contractor has changed its call centre platform to Skype Business. The Skype Business platform is unable to separate calls about Rottnest Island Authority matters from other calls it receives on behalf of the other customers.

Table 9 shows the number of calls received by each electricity distributor's call centre.

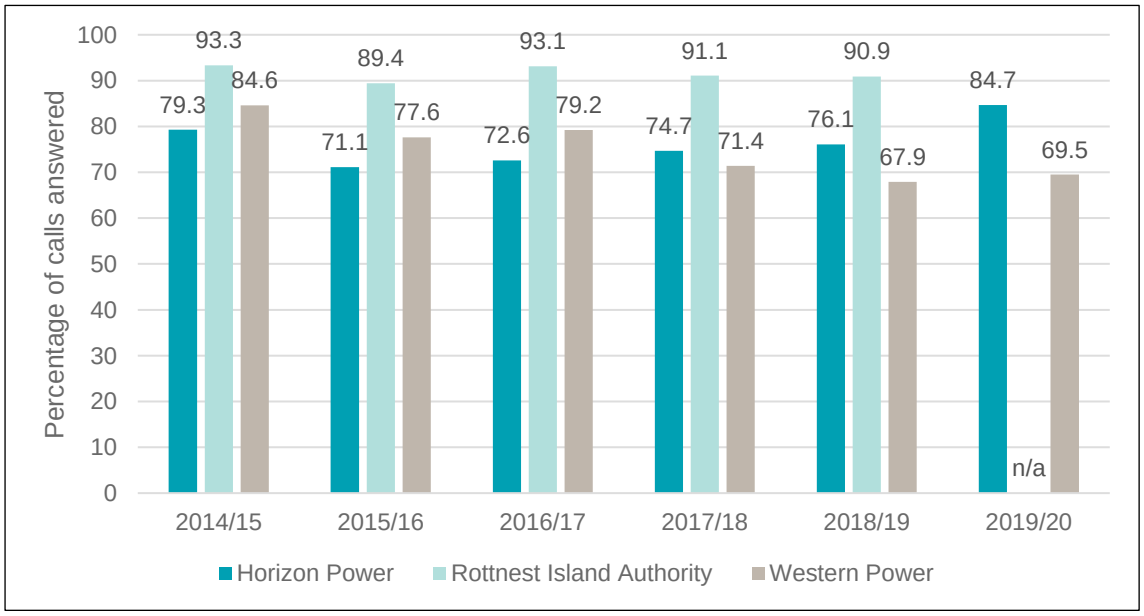
**Table 9: Number of calls to electricity distributor call centres 2015 to 2020**

| | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|---|
| Horizon Power | 11,452 | 12,794 | 13,645 | 10,940 | 9,234 | 11,382 |
| Rottnest Island Authority | 5,250 | 1,955 | 814 | 852 | 33 | n/a |
| Western Power | 388,358 | 357,105 | 343,300 | 376,719 | 357,889 | 394,175 |
| **Total** | **405,060** | **371,854** | **357,759** | **388,511** | **367,156** | **405,557** |

In 2019/20, the both Horizon Power and Western Power reported increases in calls to their call centres, up by 23.3 per cent and 10.1 per cent respectively.

Figure 21 shows the percentage of calls that were answered within 30 seconds by each electricity distributor call centre.

**Figure 21: Percentage of electricity distributor calls answered within 30 seconds 2015 to 2020**



### 5.3.2 Gas distributor call centre performance

Esperance Power Station does not operate a call centre.

Kleenheat's call centre handles calls about its gas retail operations and calls concerning other areas of its business as well as distribution calls.

Table 10 shows the number of calls received by ATCO and Kleenheat's call centres.

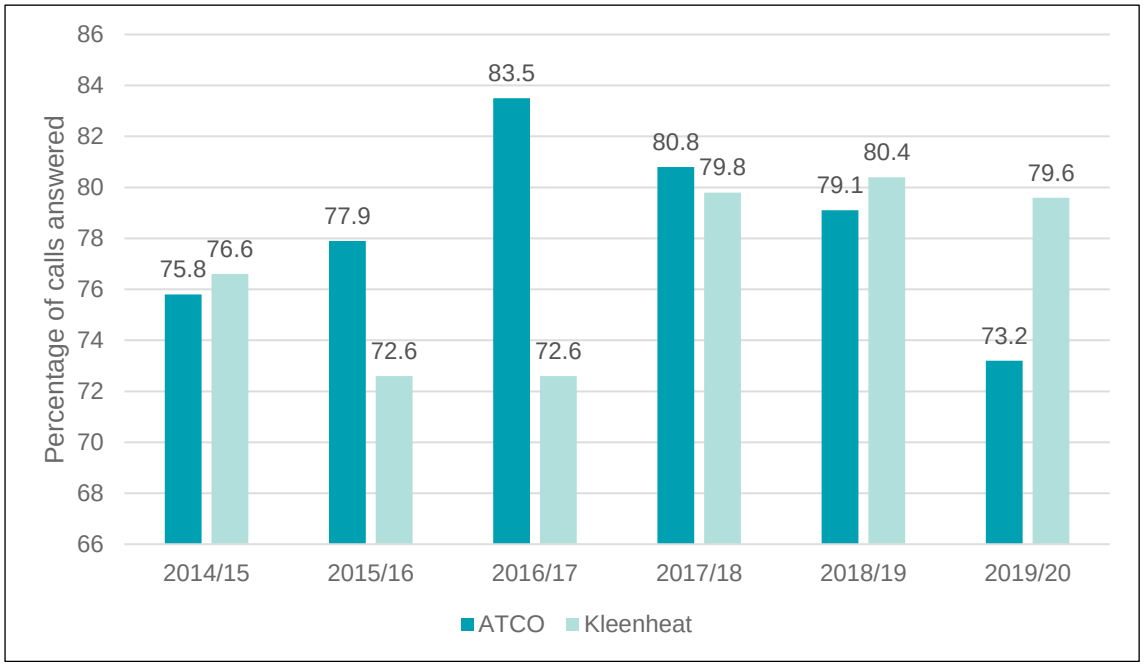
**Table 10: Number of calls to gas distributor call centres 2015 to 2020**

| | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|---|
| ATCO | 84,106 | 84,685 | 79,316 | 71,258 | 68,029 | 60,753 |
| Kleenheat | 233,363 | 222,505 | 285,887 | 310,803 | 289,778 | 246,101 |
| **Total** | **317,469** | **307,190** | **365,203** | **382,061** | **357,807** | **306,854** |

The total number of calls received by the ATCO and Kleenheat call centres was the lowest for the six years reported.

Figure 22 shows the percentage of calls that were answered by gas distributor call centres within 30 seconds.

**Figure 22: Percentage of gas distributor calls answered within 30 seconds 2015 to 2020**




The percentage of calls answered within 30 seconds by the ATCO call centre is the lowest for the six years reported.

# 6. Streetlight repair

**Main points**

- The number of faulty metropolitan and regional streetlights reported by Western Power in 2019/20 was the highest in the six years reported, mostly due to increased reporting by local government authorities and the public.
- Both Horizon Power and Western Power reported increases in the percentage of metropolitan streetlights repaired after the benchmark five business days in 2019/20, reaching the highest levels in the six years reported.

## 6.1 Number of streetlights

Table 11 shows the number of streetlights in metropolitan and regional areas that were maintained by each distributor at 30 June 2020.

**Table 11: Number of streetlights in metropolitan and regional areas at 30 June 2015 to 2020**

| | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|---|
| **Metropolitan areas** | | | | | | |
| Horizon Power | 8,022 | 8,332 | 8,066 | 7,866 | 7,672 | 7,501 |
| Western Power | 213,526 | 219,734 | 223,721 | 226,973 | 230,188 | 233,144 |
| **Total** | **221,548** | **228,066** | **231,787** | **234,839** | **237,860** | **240,645** |
| **Regional areas** | | | | | | |
| Horizon Power | 11,298 | 11,007 | 11,255 | 11,202 | 11,225 | 11,336 |
| Rottnest Island Authority | 190 | 189 | 189 | 189 | 189 | 189 |
| Western Power | 38,539 | 39,202 | 39,931 | 40,363 | 40,637 | 41,072 |
| **Total** | **50,027** | **50,398** | **51,375** | **51,754** | **52,051** | **52,597** |

Table 12 shows the number of streetlight faults in metropolitan and regional areas reported to each distributor.

**Table 12: Number of streetlight faults reported in metropolitan and regional areas 2015 to 2020**

| | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|---|
| **Metropolitan areas** | | | | | | |
| Horizon Power | 158 | 130 | 163 | 189 | 267 | 122 |
| Western Power | 28,805 | 28,518 | 33,308 | 36,510 | 41,889 | 49,801 |
| **Total** | **28,963** | **28,648** | **33,471** | **36,699** | **42,156** | **49,923** |

| | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|---|
| **Regional areas** | | | | | | |
| Horizon Power | 177 | 183 | 248 | 261 | 354 | 257 |
| Rottnest Island Authority | 112 | 79 | 22 | 33 | 43 | 30 |
| Western Power | 3,428 | 4,061 | 1,549 | 2,825 | 3,745 | 5,914 |
| **Total** | **3,717** | **4,323** | **1,819** | **3,119** | **4,142** | **6,201** |

The total number of both metropolitan and regional streetlight faults received by Western Power was the highest for the six years reported. Western Power attributed the increase in metropolitan and regional streetlight faults in 2019/20 to increased reporting of faults by local government authorities and the public, and the failure of mercury vapour globes that are reaching their end of life.

Figure 23 shows the number of metropolitan and regional streetlight faults received by distributors, expressed as a percentage of the total streetlights maintained by each distributor in these areas.

**Figure 23: Faulty streetlights by distributor and location 2015 to 2020**

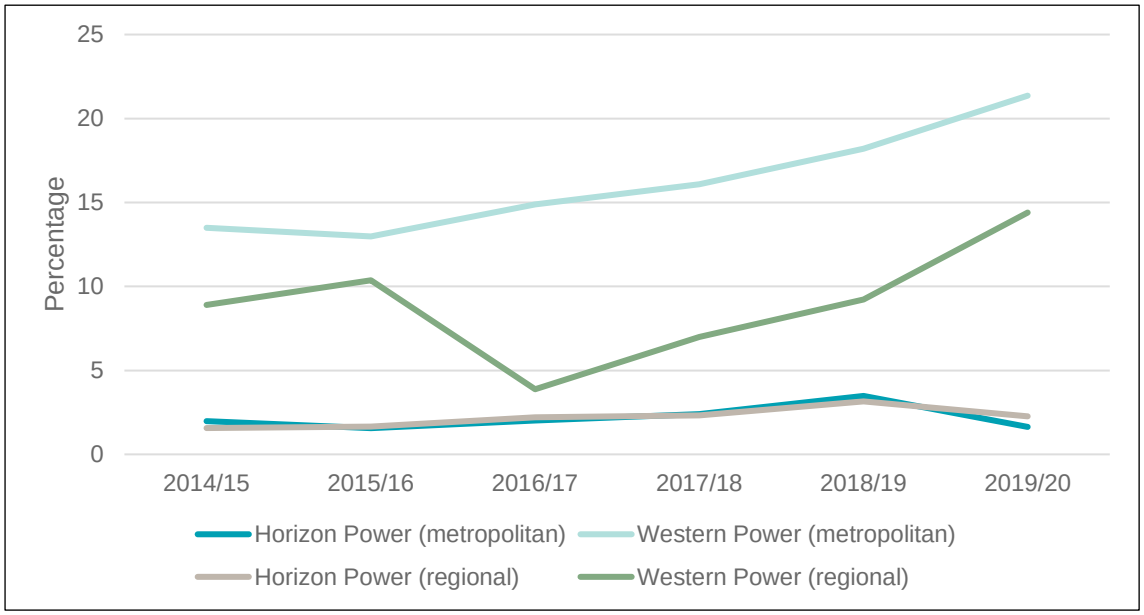
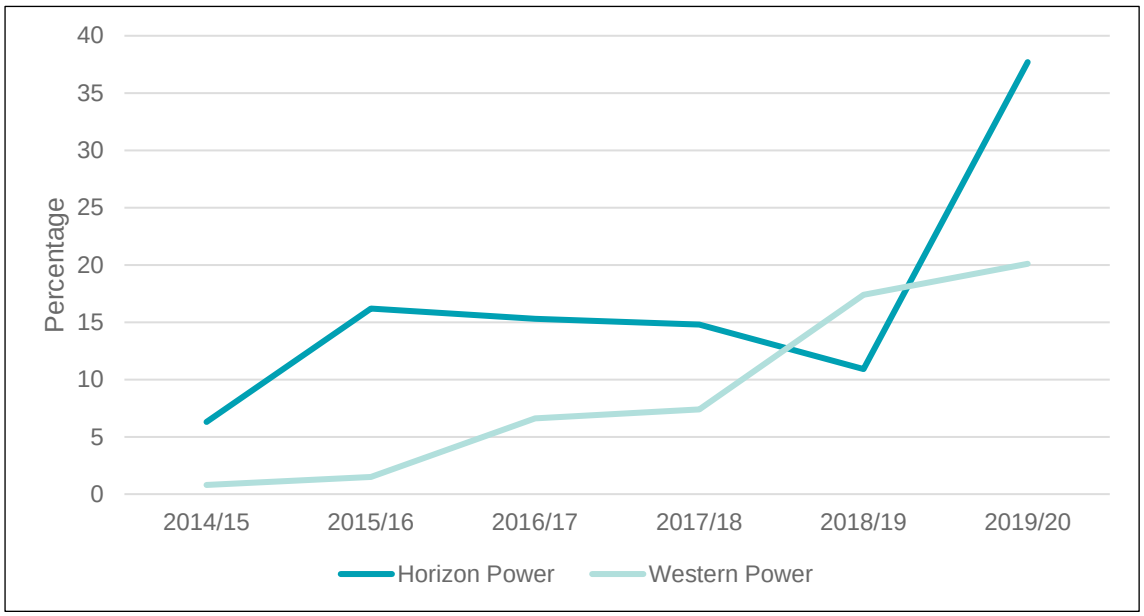



Figure 24 shows the proportion of faulty metropolitan streetlights that were repaired more than the benchmark five business days after they were reported faulty.

**Figure 24: Faulty metropolitan streetlights repaired after five business days 2015 to 2020**




Both Horizon Power and Western Power reported increases in the percentage of metropolitan streetlights repaired after five business days in 2019/20, reaching the highest levels in the six years reported.

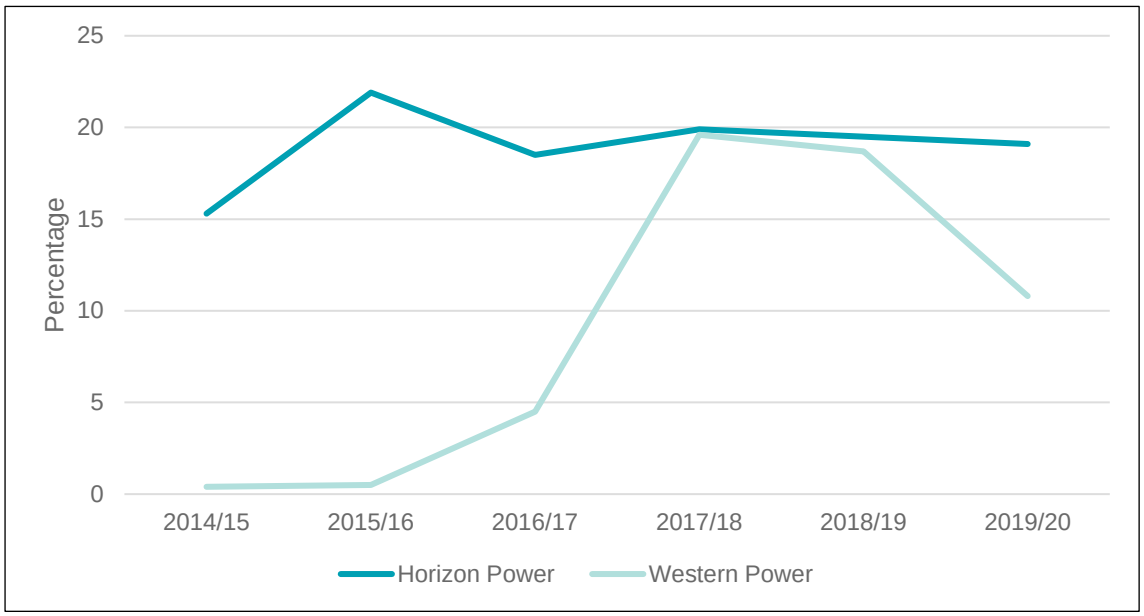
Horizon Power explained the increase was due to local government authorities and Main Roads requesting traffic management planning to repair faulty streetlights, and Cyclone Damien affecting repair times when priority was given to fixing other damage to the network.[39]

Western Power explained the increase was due to an increase in reported faults, the transition of streetlight repair work from external contractors to their internal workforce (from mid-2019/20) and several severe storm events that diverted streetlight crews to priority power restoration work.

Figure 25 shows the percentage of faulty regional streetlights that were repaired more than the benchmark nine business days after they were reported faulty.

[39] Applications for Traffic Management Plans can take up to six weeks to be approved.

**Figure 25: Faulty regional streetlights repaired after nine business days 2015 to 2020**




Western Power reported a 7.9 percentage point reduction in the percentage of regional streetlight faults that were repaired after the benchmark nine business days.

# Appendix 1 List of Tables

# Appendix 2 List of Figures

# Appendix 3 Additional information on 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 must report, and how to calculate them.

Clause 11 specifies four reliability measures:

- Average total duration of all interruptions of supply to customer premises expressed in minutes (this is equivalent to CAIDI).
- Average duration 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) 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-yea average value for each of the measures in clause 11.

Distributors are required to report the four reliability measures in clause 11 for each discreet 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 measure 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 measure 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) describes a statistical approach to calculate the SAIDI threshold for a MED. The calculation of the MED threshold is

based on the SAIDI associated with all the interruptions that occurred during the reporting period, which is typically one year.[40, 41]

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.[42] 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.[43]

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).[44] 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 13: Distribution feeder classifications (SCONRRR)**

| Description | | | |
|---|---|---|---|
| **CBD[45]** | **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. |

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

41 The reporting period used for this report is the year ending 30 June.

42 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.

43 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.

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

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