



Network Quality and Reliability of Supply Code

2015/2016 Performance Report

Prepared by: Asset Management Support
Audited: Qualeng

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Horizon Power Service Areas

- Supply Area
- Office



1. INTRODUCTION

This report has been produced to meet the requirements of the Electricity Industry (Network Quality and Reliability of Supply) Code 2005, Schedule 1 – Information to be published.

To assist in meeting reporting requirements the Economic Regulation Authority Western Australia (ERAWA) publishes the Electricity Distribution Licence Performance Reporting Handbook which specifies measures to be reported. The report is prepared in accordance with Schedule 1 of the Code, however as Horizon Power is a vertically integrated business (responsible for generation, transmission and distribution) reliability data includes generation and transmission outages.

2. AUDIT BY INDEPENDENT EXPERT

Division 3 of the Electricity Industry (Network Quality and Reliability of Supply) Code 2005 requires that Horizon Power arrange for an independent expert to audit, and report on the operation of the systems that Horizon Power has in place for monitoring its compliance with the code.

Horizon Power appointed Qualeng to perform the audit of its systems for compliance with the code. Qualeng is a locally based engineering consulting group with over 15 years engineering, regulatory and quality assurance expertise throughout various industries. Qualeng has a long and successful trading history and comprises a team of highly experienced consultants with recent, relevant and international expertise in the energy sector.

3. SCHEDULE 1 - INFORMATION TO BE PUBLISHED:

Clause 4 and 10

Clause 4(a) Number of breaches of each provision of the Code:

<i>Quality of Supply</i>	<i>2014/15</i>	<i>2015/16</i>
Voltage fluctuations	0	0
Harmonics	0	0

Clause 4(b) Remedial action taken for each provision:

Voltage Fluctuations

<i>Location</i>	<i>Action Taken</i>
	N/A

Harmonics

<i>Location</i>	<i>Action Taken</i>
	N/A

N/A = Not Applicable.

Horizon Power has systems in place to monitor response of customer power quality complaints.

Clause 5 - Significant interruptions to small use customers.

<i>Clause Description</i>	<i>Total</i>
Clause 5(a) Number of premises that experienced interruptions greater than 12 hours continuous.	681
Clause 5(b) Number of premises that experienced more than 16 interruptions.	268

Detailed analysis of interruptions where duration is greater than 12 hours.

<i>System</i>	<i>Duration (Minutes)</i>	<i>Premises</i>	<i>Start Date</i>	<i>Cause Description</i>	<i>Incident Category</i>
Ardyaloon	2,835	1	09/11/2015	Fire (Not Pole Top Fire)	Underground Dome Damaged
Ardyaloon	1,753.87	1	12/11/2015	Unnecessary Attendance	SFW PQI Voltage Fluctuation
Beagle Bay	2,646.1	1	30/01/2016	Plan Outage or Disconnection	No Power
Beagle Bay	2,182.67	1	26/04/2016	Customer Installation or Appliance	Intermittent Power
Bidyadanga	1,359.37	1	20/07/2015	Customer Installation or Appliance	No Power
Broome	2,735.88	1	25/07/2015	Generation Failure	No Power
Broome	1,161.33	1	03/08/2015	Customer Installation or Appliance	Meter Box Fire
Broome	1,146.18	1	03/08/2015	Customer Installation or Appliance	Miscellaneous Hazard
Broome	19,360.32	1	19/08/2015	Unnecessary Attendance	No Power
Broome	10,013.78	1	09/11/2015	Unnecessary Attendance	Electric Shock
Broome	9,720	1	17/11/2015	Machine or Tool	Underground Cable Damaged
Broome	1,047.15	1	07/12/2015	Unknown	Part Power
Broome	1,440	1	07/12/2015	Customer Installation or Appliance	No Power
Broome	9,211.2	1	06/01/2016	Unknown	Pole Arcing
Broome	1,859.4	1	27/01/2016	Unnecessary Attendance	No Power
Broome	907.65	1	27/01/2016	Customer Installation or Appliance	Reconnection
Broome	4,319	1	15/02/2016	Unnecessary Attendance	No Power
Broome	1,641	1	25/02/2016	Customer Installation or Appliance	Part Power
Broome	15,710.88	1	27/05/2016	Customer Installation or Appliance	Electric Shock
Broome	1,511	58	27/06/2016	Vandalism or Willful Damage	Drop Out Fuse Trip
Carnarvon	1,265	1	15/07/2015	Unknown	Part Power
Carnarvon	1,579.12	1	29/09/2015	Unknown	Pole Leaning
Carnarvon	977	1	25/02/2016	Equipment Failure	Part Power
Carnarvon	1,209	1	23/03/2016	Unnecessary Attendance	SFW PQI Reliability
Coral Bay	1,801	8	20/06/2016	Plan Outage or Disconnection	Planned HVN Incident
Derby	1,193.88	1	28/07/2015	Fire (Not Pole Top Fire)	Underground Dome Damaged
Derby	8,577.98	1	29/07/2015	Unnecessary Attendance	No Power

System	Duration (Minutes)	Premises	Start Date	Cause Description	Incident Category
Derby	1,534.82	1	03/08/2015	Customer Installation or Appliance	Part Power
Derby	1,440	1	12/09/2015	Vehicle	No Power
Derby	14,286.57	1	06/11/2015	Vandalism or Willful Damage	No Power
Derby	1,489	1	17/11/2015	Equipment Failure	Miscellaneous Non Hazard
Derby	791	1	08/01/2016	Customer Installation or Appliance	No Power
Derby	13,765.08	1	28/02/2016	Equipment Failure	Street Wire Down
Derby	1,210	1	28/02/2016	Plan Outage or Disconnection	Switch Isolation
Derby	1,524	1	24/03/2016	Customer Installation or Appliance	SFW PQI Low Volts
Derby	1,038	1	04/05/2016	Fire (Not Pole Top Fire)	House / Building Fire
Derby	972	1	04/05/2016	Fire (Not Pole Top Fire)	House / Building Fire
Derby	4,432.58	1	06/05/2016	Equipment Failure	No Power
Djarindjin	1,411.52	1	31/05/2016	Customer Installation or Appliance	SFW PQI High Volts
Esperance	1,254	1	01/08/2015	Customer Installation or Appliance	No Power
Esperance	1,612	1	07/10/2015	Vehicle	Service Wire Down
Esperance	1,594	1	14/10/2015	Human Error	Underground Cable Damaged
Esperance	1,128	1	19/10/2015	Equipment Failure	Pole Broken/Damaged
Esperance	1,426	1	11/11/2015	Vehicle	Pole Hit
Esperance	1,522	1	17/11/2015	Fire (Not Pole Top Fire)	Bushfire
Esperance	7,544	15	17/11/2015	Fire (Not Pole Top Fire)	Drop Out Fuse Trip
Esperance	3,137	11	17/11/2015	Fire (Not Pole Top Fire)	Drop Out Fuse Trip
Esperance	3,136	1	17/11/2015	Fire (Not Pole Top Fire)	No Power
Esperance	3,134	1	17/11/2015	Fire (Not Pole Top Fire)	No Power
Esperance	1,479	1	17/11/2015	Fire (Not Pole Top Fire)	No Power
Esperance	3,129	2	17/11/2015	Fire (Not Pole Top Fire)	No Power
Esperance	1,473	1	17/11/2015	Fire (Not Pole Top Fire)	No Power
Esperance	1,472	1	17/11/2015	Fire (Not Pole Top Fire)	No Power
Esperance	3,122	1	17/11/2015	Fire (Not Pole Top Fire)	No Power
Esperance	1,835	1	17/11/2015	Fire (Not Pole Top Fire)	No Power
Esperance	1,032	141	17/11/2015	Fire (Not Pole Top Fire)	Recloser Trip
Esperance	1,479	11	17/11/2015	Fire (Not Pole Top Fire)	Recloser Trip
Esperance	792	1	17/11/2015	Fire (Not Pole Top Fire)	Pole Down
Esperance	11,743	5	18/11/2015	Fire (Not Pole Top Fire)	Sectionalizer Trip
Esperance	1,973	1	18/11/2015	Unnecessary Attendance	No Power
Esperance	1,848	1	18/11/2015	Fire (Not Pole Top Fire)	No Power
Esperance	10,096	55	19/11/2015	Fire (Not Pole Top Fire)	Switch Isolation
Esperance	15,590.4	18	19/11/2015	Fire (Not Pole Top Fire)	Recloser Trip
Esperance	12,553	2	19/11/2015	Fire (Not Pole Top Fire)	Switch Isolation
Esperance	8,433	6	19/11/2015	Fire (Not Pole Top Fire)	Drop Out Fuse Trip
Esperance	1,229	1	21/11/2015	Fire (Not Pole Top Fire)	Switch Isolation
Esperance	5,860	24	22/11/2015	Fire (Not Pole Top Fire)	Recloser Trip
Esperance	5,792	1	22/11/2015	Fire (Not Pole Top Fire)	Switch Isolation
Esperance	902	1	23/11/2015	Equipment Failure	No Power

System	Duration (Minutes)	Premises	Start Date	Cause Description	Incident Category
Esperance	1,340.67	15	23/11/2015	Lightning	Recloser Trip
Esperance	2,667	1	05/12/2015	Lightning	Switch Isolation
Esperance	2,787	1	05/12/2015	Lightning	Switch Isolation
Esperance	1,553	1	05/12/2015	Lightning	Switch Isolation
Esperance	864	1	07/12/2015	Customer Installation or Appliance	Wire Alert
Esperance	3,269	1	20/01/2016	Lightning	No Power
Esperance	1,457.3	20	20/01/2016	Lightning	Recloser Trip
Esperance	1,504	10	20/01/2016	Lightning	Recloser Trip
Esperance	827	1	23/01/2016	Lightning	No Power
Esperance	1,095	9	14/03/2016	Vegetation	Recloser Trip
Esperance	6,284.37	14	01/04/2016	Plan Outage or Disconnection	Switch Isolation
Esperance	78,308	1	01/04/2016	Plan Outage or Disconnection	Part Power
Esperance	1,370	1	07/04/2016	Human Error	Part Power
Esperance	995	1	07/04/2016	Equipment Failure	Miscellaneous Non Hazard
Esperance	1,297	1	12/04/2016	Human Error	Part Power
Esperance	845	1	29/04/2016	Vegetation	No Power
Esperance	6,694.67	1	04/05/2016	Vegetation	Switch Isolation
Esperance	930	1	20/05/2016	Vehicle	Pole Down
Esperance	735	3	20/05/2016	Vehicle	Switch Isolation
Esperance	817	1	27/05/2016	Unknown	No Power
Esperance	1,125.3	1	08/06/2016	Customer Installation or Appliance	Part Power
Esperance	1,151.33	1	09/06/2016	Customer Installation or Appliance	SFW PQI Voltage Fluctuation
Esperance	1,039.1	4	15/06/2016	Equipment Failure	Drop Out Fuse Trip
Esperance	1,021	1	15/06/2016	Equipment Failure	Transformer On A Pole Damaged
Esperance	1,031	1	28/06/2016	Emergency Outage For Hazard	Recloser Trip
Exmouth	3,038	1	06/10/2015	Vegetation	Miscellaneous Hazard
Exmouth	1,300	1	13/10/2015	Bird	No Power
Exmouth	8,905	1	02/02/2016	Unknown	Transformer On A Pole Damaged
Exmouth	1,208	1	30/03/2016	Unnecessary Attendance	Underground Dome Damaged
Fitzroy Crossing	994	1	30/07/2015	Equipment Failure	No Power
Fitzroy Crossing	9,826.05	1	28/10/2015	Customer Installation or Appliance	Electric Shock
Fitzroy Crossing	1,138	1	16/11/2015	Equipment Failure	Part Power
Fitzroy Crossing	4,354.02	1	04/12/2015	Equipment Failure	No Power
Fitzroy Crossing	1,131	1	01/01/2016	Lightning	No Power
Fitzroy Crossing	1,130	1	01/01/2016	Lightning	No Power
Fitzroy Crossing	1,132	1	28/02/2016	Customer Installation or Appliance	No Power
Fitzroy Crossing	2,857	1	27/05/2016	Unnecessary Attendance	Meter Box Damaged

System	Duration (Minutes)	Premises	Start Date	Cause Description	Incident Category
Fitzroy Crossing	12,469.02	1	30/05/2016	Customer Installation or Appliance	Electric Shock
Halls Creek	2,188.28	1	28/09/2015	Equipment Failure	Part Power
Hopetoun	885	1	18/07/2015	Customer Installation or Appliance	No Power
Hopetoun	935	1	04/11/2015	Vegetation	Intermittent Power
Hopetoun	1,724.88	4	19/11/2015	Equipment Failure	Drop Out Fuse Trip
Hopetoun	1,046	1	20/11/2015	Equipment Failure	No Power
Hopetoun	1,723	1	23/11/2015	Lightning	No Power
Hopetoun	1,339	1	23/11/2015	Equipment Failure	Part Power
Hopetoun	1,284	1	23/11/2015	Lightning	No Power
Hopetoun	1,007.72	1	29/12/2015	Equipment Failure	Recloser Trip
Hopetoun	1,142	1	31/01/2016	Wind or Wind Bourne Debris	Miscellaneous Non Hazard
Hopetoun	1,134.47	12	07/02/2016	Equipment Failure	Recloser Trip
Hopetoun	42,006	1	29/02/2016	Plan Outage or Disconnection	Disconnect For Fault
Hopetoun	1,376.43	23	07/05/2016	Emergency Outage For Hazard	Planned HVN Incident
Karratha	5,550	1	09/07/2015	Unknown	No Power
Karratha	1,358.18	1	20/07/2015	Unnecessary Attendance	Disconnect For Fault
Karratha	4,569	1	21/07/2015	Customer Installation or Appliance	Electric Shock
Karratha	21,604	1	06/08/2015	Vehicle	Electric Shock
Karratha	1,253	1	24/08/2015	Unnecessary Attendance	No Power
Karratha	2,973	1	08/09/2015	Vandalism or Willful Damage	No Power
Karratha	1,618	1	14/09/2015	Equipment Failure	Part Power
Karratha	771	1	04/11/2015	Vandalism or Willful Damage	Miscellaneous Hazard
Karratha	170,985.62	1	15/01/2016	Emergency Outage For Hazard	House / Building Fire Hazard
Karratha	164,821.83	1	15/01/2016	Emergency Outage For Hazard	House / Building Fire Hazard
Karratha	854	1	19/01/2016	Customer Installation or Appliance	Electric Shock
Karratha	3,786	1	06/02/2016	Unknown	Electric Shock
Karratha	1,280	1	23/03/2016	Customer Installation or Appliance	Miscellaneous Non Hazard
Karratha	24,758.08	1	26/04/2016	Customer Installation or Appliance	Electric Shock
Kununurra	2,032.97	1	27/07/2015	Bat	SFW PQI Voltage Fluctuation
Kununurra	1,735.75	1	22/08/2015	Plan Outage or Disconnection	Planned HVN Incident
Kununurra	830	1	25/09/2015	Human Error	No Power
Kununurra	4,702.78	6	22/10/2015	Plan Outage or Disconnection	Planned HVN Incident
Kununurra	1,028	1	07/11/2015	Customer Installation or Appliance	No Power
Kununurra	793	1	09/11/2015	Customer Installation or Appliance	Part Power
Kununurra	1,324	1	01/02/2016	Equipment Failure	Low Hanging Service Wire
Kununurra	1,526	1	23/06/2016	Emergency Outage For Hazard	House / Building Fire Hazard
Laverton	1,328	1	19/01/2016	Lightning	Low Hanging Street Wire

System	Duration (Minutes)	Premises	Start Date	Cause Description	Incident Category
Laverton	1,060.43	4	19/01/2016	Lightning	Recloser Trip
Laverton	3,191.87	5	19/04/2016	Wind or Wind Bourne Debris	Recloser Trip
Laverton	1,020.42	8	07/06/2016	Pole Top Fire	Feeder Trip
Leonora	1,223	1	03/02/2016	Vandalism or Willful Damage	No Power
Leonora	3,204	1	06/02/2016	Customer Installation or Appliance	Electric Shock
Looma	1,343.73	1	03/08/2015	Equipment Failure	No Power
Looma	1,407	1	30/10/2015	Equipment Failure	Part Power
Marble Bar	1,410.35	1	09/09/2015	Customer Installation or Appliance	SFW PQI Low Volts
Marble Bar	1,183	1	19/01/2016	Customer Installation or Appliance	No Power
Marble Bar	1,120.17	1	11/04/2016	Unnecessary Attendance	No Power
Meekatharra	937	1	09/03/2016	Insect	No Power
Norseman	5,201	1	30/10/2015	Wind or Wind Bourne Debris	Disconnect For Fault
Norseman	1,475	1	12/11/2015	Equipment Failure	No Power
Norseman	4,372	1	09/05/2016	Vandalism or Willful Damage	No Power
Nullagine	1,098	1	10/12/2015	Vandalism or Willful Damage	Electric Shock
Nullagine	975	1	25/01/2016	Equipment Failure	Part Power
Nullagine	1,429.2	1	27/06/2016	Customer Installation or Appliance	Low Hanging Service Wire
Onslow	1,213	42	19/11/2015	Plan Outage or Disconnection	Planned HVN Incident
Onslow	8,289	1	30/03/2016	Customer Installation or Appliance	Part Power
Port Hedland	836	1	01/10/2015	Fire (Not Pole Top Fire)	House / Building Fire
Port Hedland	3,658	1	05/10/2015	Vandalism or Willful Damage	No Power
Port Hedland	771	1	22/10/2015	Vandalism or Willful Damage	No Power
Port Hedland	1,157	1	18/12/2015	Equipment Failure	No Power
Port Hedland	1,288	1	21/01/2016	Human Error	No Power
Port Hedland	3,241.07	1	15/03/2016	Plan Outage or Disconnection	Planned HVN Incident
Port Hedland	1,000	1	08/06/2016	Unnecessary Attendance	No Power
Sandstone	1,058	1	08/03/2016	Customer Installation or Appliance	Part Power
Wiluna	1,074	1	18/01/2016	Lightning	Part Power
Wiluna	1,031	1	05/06/2016	Customer Installation or Appliance	Part Power
Wiluna	1,359	1	13/06/2016	Equipment Failure	Miscellaneous Hazard
Yalgoo	823	1	26/02/2016	Disconnection in Error	No Power
Horizon Power Total		681			

Customer interruptions greater than 12 hours were largely due to significant events (cyclones, severe storms, fire & floods) that Horizon Power systems experienced in 2015/16.

The notable significant event for 2015/16 was:

- Esperance Fires (Nov 2015)

Clause 6 and 10 - Total number of complaints received

2014/15	2015/16
32	34

Clause 7 and 10 - Number of customer complaints in each discrete area:

System	2014/15	2015/16
NWIS¹	10	6
Ardyaloon		
Beagle Bay		
Bidyadanga		
Broome	5	5
Carnarvon	2	4
Coral Bay		
Cue		
Denham		1
Derby	1	1
Djarindjin		
Esperance	6	9
Exmouth	4	1
Fitzroy Crossing		1
Gascoyne Junction		
Halls Creek	2	2
Hopetoun	1	1
Kalumburu		
Kununurra	1	1
Lake Argyle		
Laverton		
Leonora		
Looma		
Marble Bar		
Meekatharra		1
Menzies		
Mount Magnet		
Norseman		1
Nullagine		
Onslow		
Sandstone		
Warmun		
Wiluna		
Wyndham		
Yalgoo		
Yungngora		
Horizon Power Total	32	34

(1) NWIS – North West interconnected system as per Clause 1

Clause 8 and 10 - Total amount spent addressing complaints.

2014/15	2015/16
\$1,361,370	\$595,064

Clause 9 and 10 - Payments to customers for failure to meet certain standards

The number and total payments made to customers for failure to give required notice of planned interruption.

2014/15		2015/16	
Number	Cost	Number	Cost
1	\$20	6	\$120

The number and total payments made to customers for supply interruptions exceeding 12 hours.

2014/15		2015/16	
Number	Cost	Number	Cost
1,618	\$129,440	17	\$1,360

Nine of the payments made for supply interruptions exceeding 12 hours were due to the Esperance fires.

Clause 11(a), 12 and 13 - Average Length of Interruption of Supply to Customer Premises in Minutes

System	2012/13	2013/14	2014/15	2015/16	Average
NWIS ¹	90.56	164.04	62.99	64.89	95.62
Ardyaloon	80.90	113.00	74.94	38.54	76.84
Beagle Bay	0.00	38.15	20.38	85.60	36.03
Bidyadanga	92.06	52.29	24.54	261.48	107.59
Broome	70.71	52.25	146.23	68.69	84.47
Carnarvon	74.87	35.54	287.83	85.07	120.83
Coral Bay	0.00	0.00	3.30	438.14	110.36
Cue	183.17	32.45	83.28	85.15	96.01
Denham	41.40	26.32	96.58	44.38	52.17
Derby	146.39	54.94	83.10	70.05	88.62
Djarindjin	110.81	0.00	74.34	113.91	74.76
Esperance	149.22	88.41	69.07	106.90	103.40
Exmouth	74.71	74.29	1423.22	115.84	422.01
Fitzroy Crossing	55.14	45.70	200.78	30.54	83.04
Gascoyne Junction	0.00	90.00	29.51	18.60	34.53
Halls Creek	78.31	54.82	248.83	102.02	121.00
Hopetoun	94.70	100.71	104.72	140.62	110.19
Kalumburu	0.00	105.64	55.85	180.50	85.50
Kununurra	38.61	37.97	46.39	53.28	44.06
Lake Argyle	50.59	125.50	0.00	97.50	68.40
Laverton	201.42	132.73	73.90	168.28	144.08
Leonora	99.84	50.55	35.50	82.20	67.02
Looma	159.33	163.34	63.86	129.97	129.13
Marble Bar	92.42	87.91	84.38	15.35	70.02
Meekatharra	139.61	97.50	127.61	27.59	98.08
Menzies	0.00	58.06	0.00	53.00	27.76
Mount Magnet	15.75	24.21	19.56	9.95	17.37
Norseman	152.53	102.46	160.57	63.46	119.76
Nullagine	62.10	111.81	189.95	0.00	90.96
Onslow	96.03	37.59	97.08	77.20	76.98
Sandstone	268.00	12.63	27.22	0.00	76.96
Warmun	101.62	28.72	93.61	5.78	57.43
Wiluna	184.90	125.04	129.45	4.53	110.98
Wyndham	48.70	36.54	122.41	122.36	82.50
Yalgoo	27.83	278.67	17.41	80.21	101.03
Yungngora	225.00	47.31	22.73	58.34	88.34
Horizon Power Total	77.74	81.90	161.00	79.83	100.12

(1) NWIS – North West interconnected system as per Clause 1

Clause 11(b), 12 and 13 - Average Number of Interruptions of Supply to Customer Premises

System	2012/13	2013/14	2014/15	2015/16	Average
NWIS¹	3.24	3.03	1.20	0.83	2.07
Ardyaloon	2.93	0.61	2.49	3.17	2.30
Beagle Bay	0.00	1.35	1.39	1.26	1.00
Bidyadanga	1.08	2.15	2.41	2.07	1.93
Broome	0.82	1.91	0.29	5.29	2.08
Carnarvon	5.05	6.61	11.15	2.56	6.34
Coral Bay	0.00	0.00	1.00	1.75	0.69
Cue	1.45	2.04	6.01	2.25	2.94
Denham	2.02	3.93	10.91	7.10	5.99
Derby	1.15	5.62	4.37	2.91	3.51
Djarindjin	0.89	0.00	2.88	0.95	1.18
Esperance	2.40	3.40	4.03	6.65	4.12
Exmouth	3.30	2.07	3.44	2.08	2.72
Fitzroy Crossing	1.22	0.41	0.42	2.37	1.10
Gascoyne Junction	0.00	0.15	0.88	1.21	0.56
Halls Creek	3.30	1.40	1.17	1.62	1.87
Hopetoun	5.25	4.55	2.58	2.08	3.61
Kalumburu	0.00	2.08	5.19	3.19	2.62
Kununurra	20.18	17.62	10.75	11.33	14.97
Lake Argyle	1.88	2.03	0.00	1.88	1.45
Laverton	0.49	0.94	0.44	1.69	0.89
Leonora	7.94	2.28	5.93	3.76	4.98
Looma	0.28	2.30	4.32	1.37	2.07
Marble Bar	3.42	1.80	0.95	8.27	3.61
Meekatharra	1.96	3.17	1.71	1.46	2.08
Menzies	0.00	1.79	0.00	0.39	0.54
Mount Magnet	7.03	7.77	1.87	2.88	4.89
Norseman	1.09	2.60	4.13	2.88	2.67
Nullagine	0.52	0.91	0.44	0.00	0.47
Onslow	20.54	8.19	4.71	7.32	10.19
Sandstone	0.06	1.00	1.08	0.00	0.53
Warmun	2.61	0.81	2.75	0.96	1.78
Wiluna	3.35	3.17	1.25	0.84	2.15
Wyndham	20.39	6.26	0.29	3.86	7.70
Yalgoo	1.93	1.50	0.95	1.15	1.38
Yungngora	0.19	11.73	3.99	4.53	5.11
Horizon Power Total	4.09	4.09	3.11	3.55	3.71

(1) NWIS – North West interconnected system as per Clause 1

Clause 11(c), 12 and 13 - Average Percentage Of Time That Electricity Has Been Supplied To Customer Premises.

System	2012/13	2013/14	2014/15	2015/16	Average
NWIS ¹	99.98	99.97	99.97	99.99	99.98
Ardyaloon	99.98	99.98	99.98	99.99	99.98
Beagle Bay	100.00	99.99	99.99	99.98	99.99
Bidyadanga	99.98	99.99	99.99	99.95	99.98
Broome	99.99	99.99	99.99	99.99	99.99
Carnarvon	99.99	99.99	99.99	99.98	99.99
Coral Bay	100.00	100.00	100.00	99.92	99.98
Cue	99.97	99.99	99.99	99.98	99.98
Denham	99.99	99.99	99.99	99.99	99.99
Derby	99.97	99.99	99.99	99.99	99.98
Djarindjin	99.98	100.00	100.00	99.98	99.99
Esperance	99.97	99.98	99.98	99.98	99.98
Exmouth	99.99	99.99	99.99	99.98	99.98
Fitzroy Crossing	99.99	99.99	99.99	99.99	99.99
Gascoyne Junction	100.00	99.98	99.98	100.00	99.99
Halls Creek	99.99	99.99	99.99	99.98	99.99
Hopetoun	99.98	99.98	99.98	99.97	99.98
Kalumburu	100.00	99.98	99.98	99.97	99.98
Kununurra	99.99	99.99	99.99	99.99	99.99
Lake Argyle	99.99	99.98	99.98	99.98	99.98
Laverton	99.96	99.97	99.97	99.97	99.97
Leonora	99.98	99.99	99.99	99.98	99.99
Looma	99.97	99.97	99.97	99.98	99.97
Marble Bar	99.98	99.98	99.98	100.00	99.99
Meekatharra	99.97	99.98	99.98	99.99	99.98
Menzies	100.00	99.99	99.99	99.99	99.99
Mount Magnet	100.00	100.00	100.00	100.00	100.00
Norseman	99.97	99.98	99.98	99.99	99.98
Nullagine	99.99	99.98	99.98	100.00	99.99
Onslow	99.98	99.99	99.99	99.99	99.99
Sandstone	99.95	100.00	100.00	100.00	99.99
Warmun	99.98	99.99	99.99	100.00	99.99
Wiluna	99.96	99.98	99.98	100.00	99.98
Wyndham	99.99	99.99	99.99	99.98	99.99
Yalgoo	99.99	99.95	99.95	99.98	99.97
Yungngora	99.96	99.99	99.99	99.99	99.98
Horizon Power Total	99.99	99.98	99.98	99.98	99.98

(1) NWIS – North West interconnected system as per Clause 1

Clause 11(d), 12 and 13 - Average Total Length of All Interruptions of Supply to Customer Premises in Minutes

System	2012/13	2013/14	2014/15	2015/16	Average
NWIS ¹	293	496	76	54	230
Ardyaloon	237	69	186	122	154
Beagle Bay	0	52	28	108	47
Bidyadanga	99	112	59	540	203
Broome	58	100	43	364	141
Carnarvon	378	235	3209	217	1010
Coral Bay	0	0	3	767	193
Cue	265	66	500	192	256
Denham	84	104	1054	315	389
Derby	168	309	363	204	261
Djarindjin	99	0	214	109	105
Esperance	358	300	278	711	412
Exmouth	246	154	4903	241	1386
Fitzroy Crossing	67	19	85	72	61
Gascoyne Junction	0	14	26	23	16
Halls Creek	258	77	292	166	198
Hopetoun	497	458	270	292	379
Kalumburu	0	219	290	576	271
Kununurra	779	669	499	603	638
Lake Argyle	95	255	0	183	133
Laverton	98	125	33	284	135
Leonora	793	115	211	309	357
Looma	44	375	276	178	218
Marble Bar	316	158	80	127	170
Meekatharra	274	309	218	40	210
Menzies	0	104	0	21	31
Mount Magnet	111	188	37	29	91
Norseman	166	267	663	182	320
Nullagine	32	102	84	0	54
Onslow	1973	308	457	565	826
Sandstone	17	13	29	0	15
Warmun	265	23	257	6	138
Wiluna	619	396	162	4	295
Wyndham	993	229	35	472	432
Yalgoo	54	418	17	92	145
Yungngora	42	555	91	265	238
Horizon Power Total	318	335	501	284	359

(1) NWIS – North West interconnected system as per Clause 1

For the period 01/07/2015 to 30/06/2016 SAIDI using the Normalised data sets was **199** minutes.

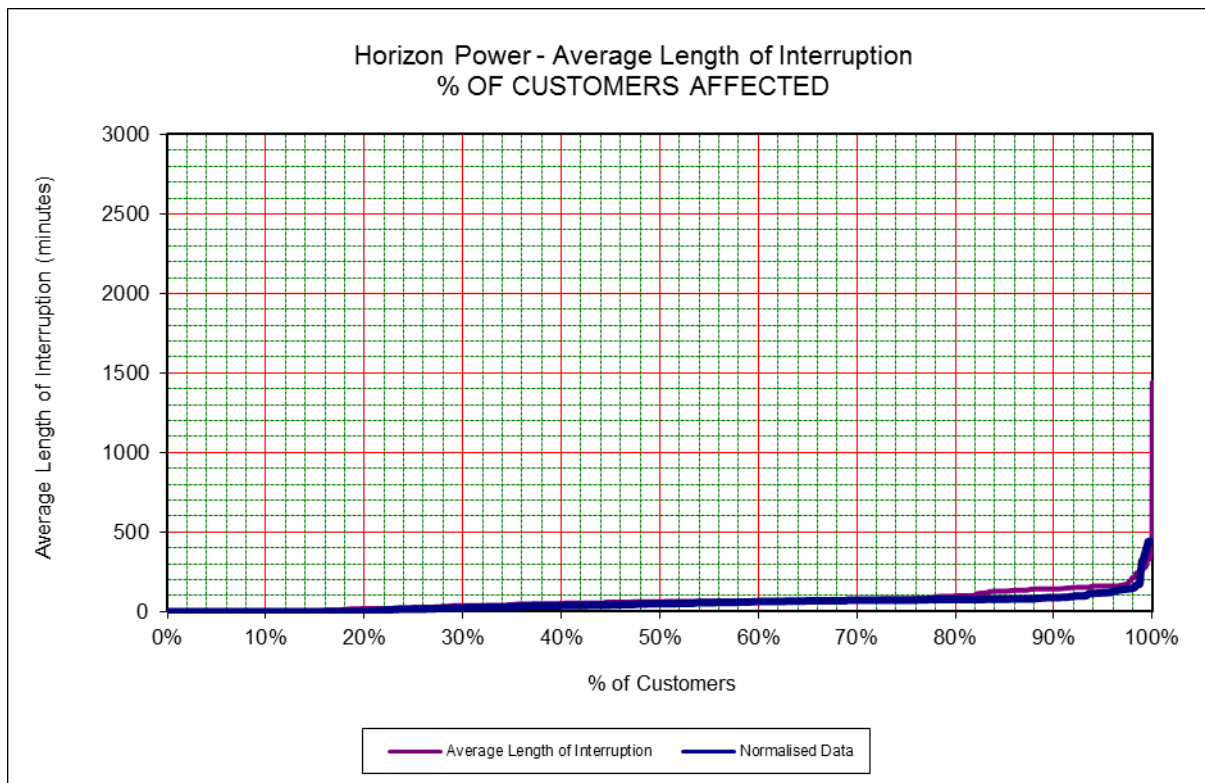
Clause 14(a) and 15 - Horizon Power - Average Length of Interruption

For the purposes of Clauses 14 and 15, Horizon Power shall pertain to “Clause 3(c) all other areas of the state”.

Average Length of Interruption - Frequency Distribution

<i>Percentile</i>	<i>Minutes</i>
25 th	27.07
50 th	62.90
75 th	80.23
90 th	141.79
95 th	160.00
98 th	213.66
100 th	1441.90

Average Length of Interruption - Frequency Graph.



During the period 01/07/2015 to 30/06/2016 of those customers who experienced an interruption, 59% had an interruption of less than 60 minutes.

Clause 14(b) and 15 - Horizon Power - Number of Interruptions

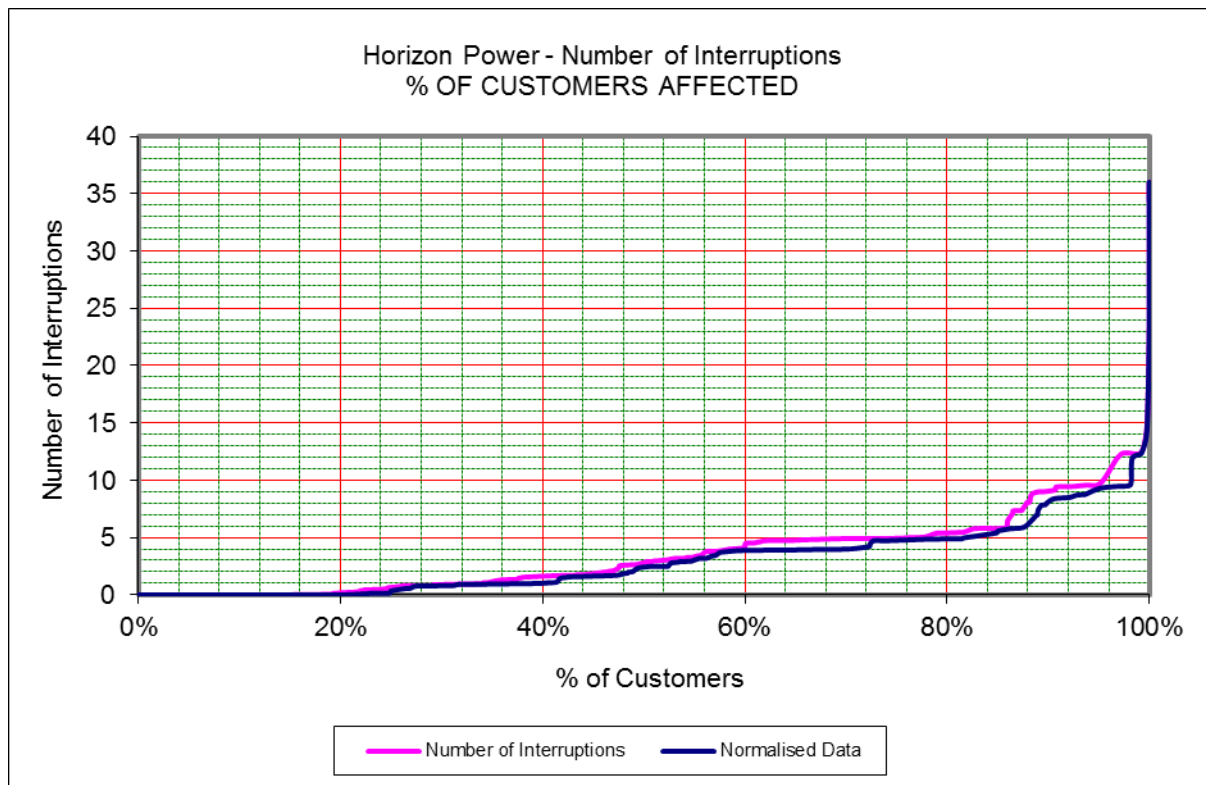
For the purposes of Clauses 14 and 15, Horizon Power shall pertain to “Clause 3(c) all other areas of the state”.

The methodology uses SAIFI averages which represents an “estimate number” as detailed in Clause 14.

Number of Interruptions - Frequency Distribution

<i>Percentile</i>	<i>Interruptions</i>
25 th	0.66
50 th	2.82
75 th	4.94
90 th	9.07
95 th	9.70
98 th	12.39
100 th	36.00

Number of Interruptions - Frequency Graph.



During the period 01/07/2015 to 30/06/2016, 99.7% of customers experienced an average of less than 16 outages or less.

Clause 14(c) and 15 - Horizon Power - Total Length of all Interruptions

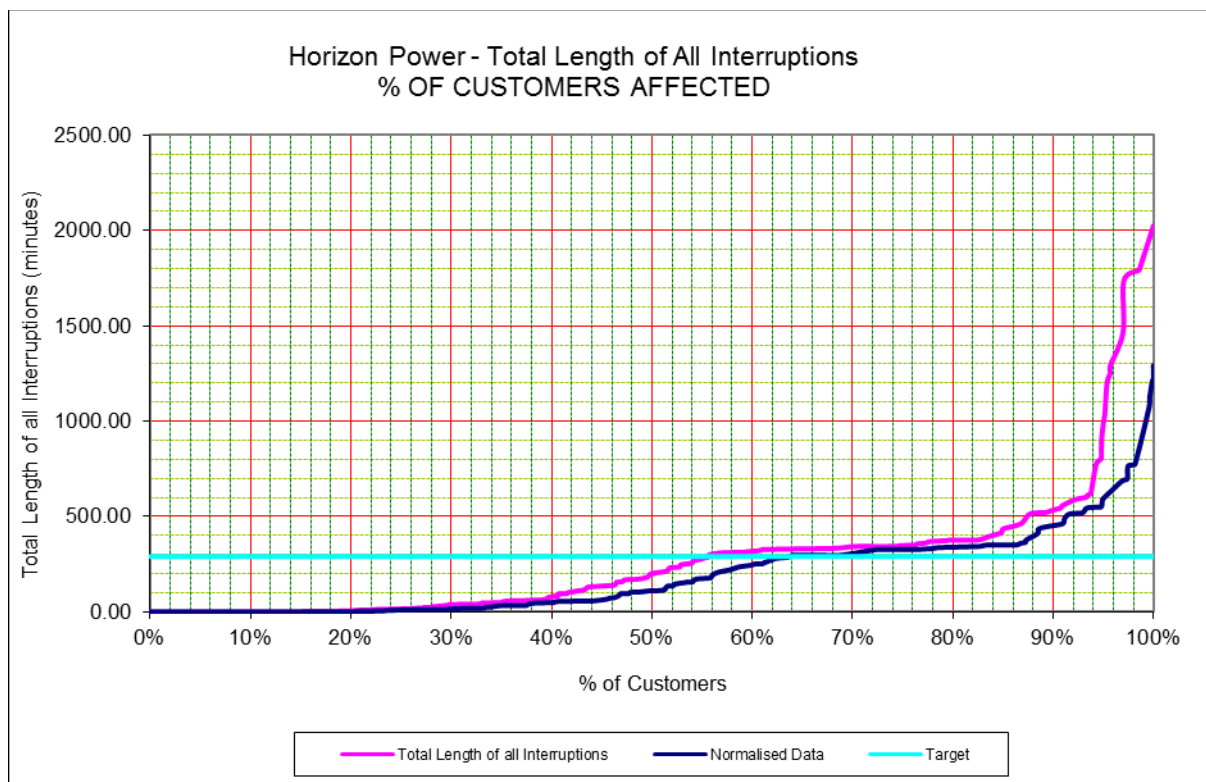
For the purposes of Clauses 14 and 15, Horizon Power shall pertain to “Clause 3(c) all other areas of the state”.

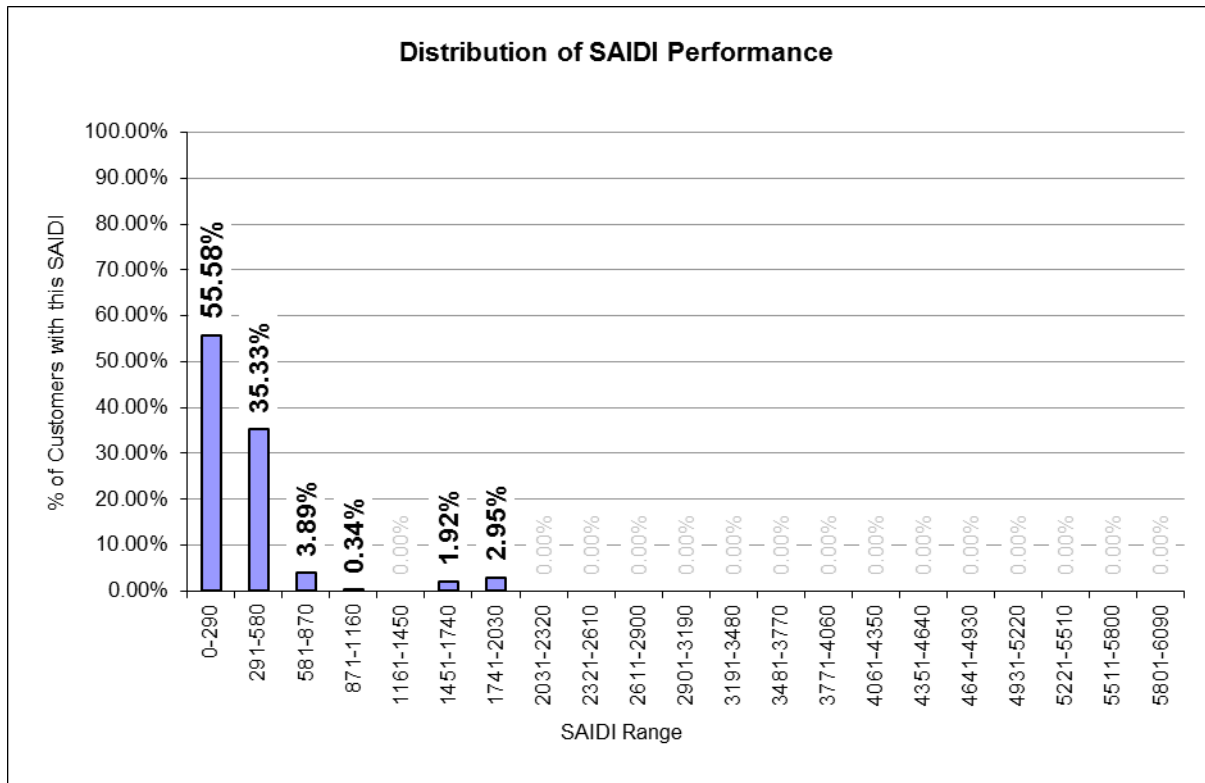
The methodology uses SAIDI averages which represents an “estimate number” as detailed in Clause 14.

Total Length of all Interruptions - Frequency Distribution

<i>Percentile</i>	<i>Minutes</i>
25 th	15.77
50 th	200.03
75 th	348.34
90 th	534.14
95 th	983.70
98 th	1772.91
100 th	2026.67

Total Length of all Interruptions - Frequency Graph





During the period 01/07/2015 to 30/06/2016, 55% of customers experienced outages with durations of less than 290 minutes. Using a normalised data set this is increased to 63%.

4. MAJOR EVENT DAYS

In the period 01/07/2015 to 30/06/2016 there was one significant event for which Major Event Days were recorded.

Power System	Major Event Day Dates	Event
Esperance	17 – 23 Nov 2015	Esperance Fires

5. APPENDIX

Major Event Days

Major event days are days in which interruptions affect the delivery of supply in a system and are not reasonably practicable to control such as extreme weather events (cyclones and floods). These days are excluded from Sustained Interruptions used for reliability measurement and reporting.

This report makes reference to the impact of major event days where they have had a significant impact on the statistics.

Major Event Day Classification

The classification of Major Event Days is to allow major events to be studied separately from daily operation, and in the process, to better reveal trends in daily operation that would be hidden by the large statistical effect of major events.

A Major Event Day is a day in which interruptions affect the delivery of supply in a system that is not reasonably practicable to control. All indices are calculated based on removal of the identified Major Event Days.

Interruptions that span multiple days are accrued to the day on which the interruption begins.

Normalised Data Sets - Unplanned

Horizon Power uses Normalised data sets to measure the management of incidents that are within the business' control.

Sustained Interruptions in Horizon Powers systems are those interruptions that result in a loss of electricity to customers for more than one minute in duration.

Horizon Power excludes interruptions from its Normalised data set where the interruption is not reasonably practicable to control such as:

- Customer installations/ appliances
- Planned outages/ disconnections
- Vehicle, machine or tool damage
- Wilful damage
- Damage due to events that Horizon Power cannot, so far as is reasonably practicable, control such as cyclones and floods.

As Horizon Power is a vertically integrated business (responsible for generation, transmission and distribution) reliability data includes generation and transmission outages.

Normalised data sets exclude incidents that aren't reasonably practicable to control by Horizon Power.

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