Service Standard Performance Report

Year ending 30 June 2011

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Executive Summary

The Service Standard Performance Report (this report) outlines Western Power's performance in terms of the service standard benchmarks in its Access Arrangement for the 12 months 1 July 2010 to 30 June 2011.

Western Power applies 14 *reference services* for users connected to Western Power's network in which there are service standards applicable to them.

With the exception of the CBD network, Western Power's distribution network performance improved over the past 12 months. During that same period improvement was experienced on Western Power's transmission performance specifically in terms of system minutes lost on the meshed network.

Western Power performed better than the expected benchmarks for the 12 months ending 30 June 2011 with the exception of Circuit Availability and System Minutes Interrupted on the Radial network.

We achieved these service levels through a number of work programs and as a result of the influence of reduced environmental and other external factors.

Ongoing maintenance work programs and projects on the Western Power Network are expected to ensure the reliability performance will be within the service standard benchmarks in the year ending June 2012.

In terms of real dollars as of 30 June 2009, the application of Service Standard Adjustment Mechanism (SSAM) would produce a net financial benefit of $19.6 million across both periods of 1 July 2009 to 30 June 2010 and 1 July 2010 to 30 June 2011.

Table of Contents, Figures and Tables

1 Background and purpose of this report

The purpose of this report is to provide information on the service standards performance of the Western Power Network for the 12 month period 1 July 2010 to 30 June 2011.

The Economic Regulation Authority (the Authority) has requested this report to be provided by 1 September 2011 in accordance with the Service Standard Performance letter template 2011.

In accordance with Section 11.2 of the Electricity Networks Access Code 2004 (Access Code), “the Authority must monitor and, at least once each year, publish a service provider’s actual service standard performance against the service standard benchmarks.” that are set out in its approved Access Arrangement.

For the purposes of this report, the Western Power Network is termed South West Interconnected Network (SWIN) as per the current Access Arrangement.

2 How to read this report

Section 3 provides a brief overview of Western Power's network.

Section 4 outlines and describes the reference services provided by Western Power relevant to this report, for both entry and exit points on the Western Power Network.

Section 5 outlines and describes the current service standard benchmarks in the current Access Arrangement period 1 July 2009 to 30 June 2012.

Section 6 outlines and describes the actual performance against these current service standards for the 12 months 1 July 2010 to 30 June 2011.

Section 7 outlines and describes the Service Standards Adjustment Mechanism (SSAM) as well as any data exclusions over the current Access Arrangement to date.

3 Network Topology

Western Power operates and maintains the transmission and distribution electricity grid within the South West Interconnected System (SWIS) known as the Western Power Network.

The Western Power Network comprises of approximately 1,100 feeders and circuits incorporating 96,000 kilometres of conductor, 787,000 power poles and towers, 13,500 distribution substations, to provide electricity supply to approximately one million customers and 224,000 streetlights.

The Western Power Network covers a geographic area from Kalbarri down to Albany, and from Perth through to the Goldfields (Figure 1).

Figure 1 - Map of the SWIN (shaded in grey)

4 Reference Services

In accordance with the terms and conditions of the *Electricity Transfer Access Contract*, Western Power provides 11 *reference services* at *network exit points* for *users*, as well as 2 reference services at *network entry points* for *users*, and 1 bi-directional reference service. The following definitions apply in this report:

Entry Point

A point on a covered network identified as such in an access contract at which, subject to the access contract, electricity is more likely to be transferred into the network than transferred out of the network.

Entry Service

A covered service provided by a service provider at an entry point under which the user may transfer electricity into the network at the entry point

Exit point.

A point on a covered network identified as such in an access contract at which, subject to the access contract, electricity is more likely to be transferred out of the network than transferred into the network.

Exit service

A covered service provided by a service provider at an exit point under which the user may transfer electricity out of the network at the exit point.

Bidirectional Point

A point on a covered network identified as such in an access contract at which, subject to the access contract, electricity is both transferred into the network and transferred out of the network.

Bidirectional Service

A covered service provided by a service provider at a bidirectional point under which the user may transfer electricity into and out of the network.

4.1 Reference Services for network exit points

Table 1: Network exit point reference services

Reference Service		Reference Service Description
A1	Anytime Energy (Residential) Exit Service	An exit service combined with a connection service and a standard metering service at an exit point on the low voltage (415 volts or less) distribution system.
A2	Anytime Energy (Business) Exit Service	An exit service combined with a connection service and a standard metering service at an exit point on the low voltage (415 volts or less) distribution system.
A3	Time of Use Energy (Residential) Exit Service	An exit service combined with a connection service and a standard metering service at an exit point on the low voltage (415 volts or less) distribution system.
A4	Time of Use Energy (Business) Exit Service	An exit service combined with a connection service and a standard metering service at an exit point on the low voltage (415 volts or less) distribution system.
A5	High Voltage Metered Demand Exit Service	An exit service combined with a connection service and a standard metering service at an exit point on the high voltage (6.6 kV or higher) distribution system.
A6	Low Voltage Metered Demand Exit Service	An exit service combined with a connection service and a standard metering service at an exit point on the low voltage (415 volts or less) distribution system.
A7	High Voltage Contract Maximum Demand Exit Service	An exit service combined with a connection service and a standard metering service at an exit point on the high voltage (6.6 kV or higher) distribution system
A8	Low Voltage Contract Maximum Demand Exit Service	An exit service combined with a connection service and a standard metering service at an exit point on the low voltage (415 volts or less) distribution system.
A9	Streetlightning Exit Service	An exit service combined with a connection service at an exit point on the low voltage (415 volts or less) distribution system for the purpose of public street lightning, plus the service of the provision and maintenance of the streetlight.
A10	Un-Metered Supplies Exit Service	An exit service combined with a connection service at an exit point on the low voltage (415 volts or less) distribution system.
A11	Transmission Exit Service	An exit service combined with a connection service and a standard metering service at an exit point on the transmission system.

4.2 Reference Services for network entry points

Table 2: Network entry point reference services

Reference Service		Reference Service Description
B1	Distribution Entry Service	An entry service combined with a connection service and a standard metering service at an entry point on the distribution system.
B2	Transmission Entry Service	An entry service combined with a connection service and a standard metering service at an entry point on the transmission system.

4.3 Reference Services for bidirectional services

Table 3: Network bidirectional reference services

Reference Service		Reference Service Description
C1	Time of Use (Residential) – Bidirectional Service	A bidirectional service combined with a connection service and a standard metering service at a bidirectional point on the low voltage (415 volts or less) distribution system.

5 Current service standard benchmarks

The Access Arrangement contains 19 Service Standard Benchmarks.

5.1 Distribution Service Standards

For the reference services A1 to A10, B1 and C1 the service standard benchmarks are expressed in terms of System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI).

5.1.1 SAIDI

SAIDI is measured over a 12 month period and is the sum of the duration of each customer interruption lasting more than one minute (Customer Minutes Interrupted) attributable solely to the distribution network (after exclusions), divided by the average of the total number of connected consumers at the beginning and end of the period.

The unit of measure is System minutes per annum.

The lower the system minutes per annum the higher the service standard.

The following exclusions apply to SAIDI:

- Major Event Days in accordance with IEEE1366-2003 definitions.
- Outages shown to be caused by a fault or other event on the transmission system or a third party system (for instance, without limitation outages caused by an intertrip signal, generator unavailability or a customer installation).
- Planned Outages.
- *Force majeure* events.

The service standard benchmarks expressed in terms of SAIDI for each year of the Access Arrangement 2 period (2009/10-2011/12) are shown in Table 4.

Table 4: SAIDI service standard benchmarks

SAIDI	SWIN total	CBD	Urban	Rural Short	Rural Long
Year ending June 2010	230	38	165	259	612
Year ending June 2011	224	38	162	253	588
Year ending June 2012	213	38	153	244	556

5.1.2 SAIFI

SAIFI is measured over a 12 month period and is the total number of customer interruptions lasting more than one minute attributable solely to the distribution network (after exclusions), divided by the average of the total number of connected consumers at the beginning and end of the period.

The unit of measure is System interruptions per annum.

The lower the supply interruptions per annum the higher the service standard.

The exclusions for SAIDI discussed above, also apply to SAIFI.

The service standard benchmarks expressed in terms of SAIFI for each year of the Access Arrangement 2 period are shown in Table 5.

Table 5: SAIFI service standard benchmarks

SAIFI	SWIN total	CBD	Urban	Rural Short	Rural Long
Year ending June 2010	2.50	0.24	1.92	3.12	5.00
Year ending June 2011	2.46	0.24	1.89	3.06	4.85
Year ending June 2012	2.41	0.24	1.83	2.98	4.80

5.1.3 Network classifications

For Access Arrangement 2, the definitions of CBD, Urban, Rural Short and Rural Long distribution network classification are used. The definitions are consistent with those applied by the Steering Committee on National Regulatory Reporting Requirements (SCNRRR).

CBD

The predominantly underground distribution network supplying commercial, high rise buildings and contains significant interconnection.

Urban

The distribution network where actual maximum demand over the reporting period per total high voltage feeder route length greater than 0.3 Mega-Volt-Amperes per kilometre (excluding CBD distribution networks).

Rural Short

Those areas supplied by distribution network which are not CBD or Urban networks and where the total high voltage route length per feeder is less than 200 km.

Rural Long

The remainder of the distribution network.

5.2 Transmission service standards

In respect of the reference services A11 and B2 available to users directly connected to the transmission network, the service standard benchmarks are expressed in terms of:

- Circuit Availability;
- System Minutes Interrupted;
- Loss of Supply Events; and
- Average Outage Duration

These are defined below.

5.2.1 Circuit Availability

Circuit Availability is the availability of the transmission network. It is the actual circuit hours available for transmission circuits divided by the total possible defined circuit hours available.

The unit of measure is percentage of total possible hours available.

The higher the percentage of total possible hours available the higher the service standard.

The following exclusions apply to Circuit Availability:

- Outages on non-transmission primary equipment (primary equipment operating at voltages less than 66 kV, including zone substation power transformers).
- Unregulated transmission assets.
- Outages shown to be caused by a fault or other event on a '3rd party system' e.g. intertrip signal, generator outage, customer installation.
- *Force majeure* events.
- Duration of planned outages for major construction work, including periods where availability is temporarily restored, is to be capped at 14 days in calculating transmission line availability.

The service standard benchmarks expressed in terms of Circuit Availability for each year of the Access Arrangement period are shown in Table 6.

Table 6: Circuit Availability service standard benchmarks

	Year ending June 2010	Year ending June 2011	Year ending June 2012
Circuit Availability	98	98	98

5.2.2 System Minutes Interrupted

System Minutes Interrupted is the summation of Mega Watt (MW) minutes of unserved energy at substations which are connected to the transmission network (meshed or radial) divided by the system peak MW.

The unit of measure is System Minutes.

The lower the System Minutes the higher the service standard.

The following exclusions apply to System Minutes Interrupted:

- Unregulated transmission assets.
- Outages shown to be caused by a fault or other event on a '3rd party system' e.g. intertrip signal, generator outage, customer installation.
- *Force majeure* events.

The service standard benchmarks expressed in terms of System Minutes Interrupted for each year of the Access Arrangement 2 period are shown in Table 7.

Table 7: System Minutes Interrupted service standard benchmarks

	Year ending June 2010	Year ending June 2011	Year ending June 2012
Meshed Networks	9.3	9.3	9.3
Radial Networks	1.4	1.4	1.4

5.2.3 Loss of Supply Events

Loss of Supply Events is the frequency of events where the loss of supply:

- exceeds 0.1 system minutes; and
- exceeds 1.0 system minutes

The unit of measure is number of events per annum.

The lower the number of events per annum the higher the service standard.

The exclusions applied to System Minutes Interrupted also apply to Loss of Supply Events. In addition, planned outages and interruptions with a duration lasting less than one minute are excluded.

The service standard benchmarks expressed in terms of Loss of Supply Events for each year of the Access Arrangement 2 period are shown in Table 8.

Table 8: Loss of Supply Events service standard benchmarks

	Year ending June 2010	Year ending June 2011	Year ending June 2012
Number of events > 0.1 System Minutes	25	25	25
Number of events > 1 System Minutes	2	2	2

5.2.4 Average Outage Duration

Average Outage Duration is total number of minutes duration of all unplanned outages on the transmission network divided by the number of unplanned outage events.

The unit of measure is minutes.

The lower the minutes per annum the higher the service standard.

The exclusions that apply to Loss of Supply Events also apply to Average Outage Duration. In addition, any event contribution to Average Outage Duration is capped at 14 days.

The service standard benchmarks expressed in terms of Average Outage Duration for each year of the Access Arrangement 2 period are shown in Table 9.

Table 9: Average Outage Duration service standard benchmarks

	Year ending June 2010	Year ending June 2011	Year ending June 2012
Average Outage Duration	764	764	764

5.3 Streetlight Repairs

Western Power is responsible for the repair of faulty streetlights, with the following benchmarks applying.

Unit of measure is days.

The lower the days per annum the higher the service standard.

The service standard benchmarks expressed in terms of Streetlight Repairs for each year of the Access Arrangement 2 period are shown in Table 10.

Table 10: Streetlight Repairs service standard benchmarks

	Year ending June 2010	Year ending June 2011	Year ending June 2012
Perth metropolitan area	5 days	5 days	5 days
Major regional towns	5 days	5 days	5 days
Remote and rural towns	9 days	9 days	9 days

6 Actual service standard performance

Overall, Western Power has improved its service standard performance from 2010 and met the majority of 2011 service standard benchmarks as shown in the Distribution and Transmission Performance summary in Table 11.

Sections 6.1 to 6.3 provide explanatory details of Western Power's service standard performance against the service standard benchmark.

Table 11: Distribution and transmission performance summary

			2010	2011		
				Benchmark	Actual	Target Met?
Distribution	SAIDI	SWIN	217	224	176	✓
		CBD	1	38	30	✓
		Urban	156	162	120	✓
		Rural Short	212	253	192	✓
		Rural Long	661	588	529	✓
	SAIFI	SWIN	2.00	2.46	1.76	✓
		CBD	0.02	0.24	0.23	✓
		Urban	1.55	1.89	1.31	✓
		Rural Short	2.33	3.06	2.11	✓
		Rural Long	4.17	4.85	3.86	✓
Transmission	Circuit Availability		98.4%	≥ 98%	97.9%	✗
	System Minutes Interrupted	Meshed Network	8.9	9.3	6.7	✓
		Radial Network	0.8	1.4	4.8	✗
	Loss of Supply Events	>0.1 to 1.00 System Minute	27	25	18	✓
		>1 System Minute	2	2	1	✓
	Average Outage Duration		679	≤ 764	675	✓

6.1 Distribution

Table 12: Distribution performance commentary for the year ending June 2012

Service Standard Benchmark	2011 Performance		Comments
	Benchmark	Actual	
SWIN SAIDI	≤ 224	176	Performance was better than the 2011 benchmark and improved from the 2010 performance of 217 minutes. There was a reduction in the contribution to SAIDI in 2011 compared to 2010 from faults due to external factors such as lightning, bushfires, vandalism, vegetation and vehicles. Those activities contributing to the overall performance improvement of the distribution network include: • targeted maintenance work programmes during and following the 22 March 2010 significant storm which affected the urban network • power line reinforcements • the installation of automated switchgear on the rural network In addition, we believe there has been a reduced impact to the reliability performance of the distribution network from the weather patterns over the 12 months to June 2011. The work programs conducted in the 12 months to 30 June 2011 are expected to ensure that SWIN SAIDI performance meets the benchmark for the year ending June 2012, noting there is approximately a 12 month lag in the SAIDI impact of investment. See section 7.1.1 regarding Major Event Days that were excluded from the total SWIN SAIDI.
CBD SAIDI	≤ 38	30	Performance was better than the 2011 benchmark but worse than the 2010 performance of 1 minute. There was an increase in outages due to overloads in 2011 compared to 2010 on the low voltage distribution network which affected a localised area. Remedial actions were taken to reduce the occurrence of similar interruptions. Performance in the year ending June 2012 is expected to meet the benchmark. However, the CBD SAIDI performance indicator is potentially volatile over short periods of time due to the combined effects of small customer numbers and the relatively long repair times stemming from the fully underground CBD network. See section 7.1.1 regarding Major Event Days that were excluded from the total CBD SAIDI.

Service Standard Benchmark	2011 Performance		Comments
	Benchmark	Actual	
Urban SAIDI	≤ 162	120	Performance was better than the 2011 benchmark and improved from the 2010 performance of 156 minutes. There was a reduction in the contribution to SAIDI from faults due to external factors such as lightning, vandalism, vegetation and vehicles. Those activities contributing to the overall performance improvement of the distribution network include targeted maintenance work programmes during and following the 22 March 2010 significant storm which affected the urban network In addition, we believe there has been a reduced impact to the reliability performance of the distribution network from the weather patterns over the 12 months to June 2011. The work programs conducted in the 12 months to 30 June 2011 are expected to ensure that Urban SAIDI performance meets the benchmark for the year ending June 2012, noting there is approximately a 12 month lag in the SAIDI impact of investment. See section 7.1.1 regarding Major Event Days that were excluded from the Urban SAIDI.
Rural Short SAIDI	≤ 253	192	Performance was better than the 2011 benchmark and improved from the 2010 performance of 212 minutes. There was a reduction in the contribution to SAIDI from faults due to external factors such as lightning, bushfires, vandalism and vehicles. The main work programs that contributed to the Rural Short SAIDI reduction were power line reinforcement and the installation of automated switchgear. The work programs conducted in the 12 months to 30 June 2011 are expected to ensure that Rural Short SAIDI performance meets the benchmark for the year ending June 2012, noting there is approximately a 12 month lag in the SAIDI impact of investment. See section 7.1.1 regarding Major Event Days that were excluded from the Rural Short SAIDI.

Service Standard Benchmark	2011 Performance		Comments
	Benchmark	Actual	
Rural Long SAIDI	≤ 588	529	Performance was better than the 2011 benchmark and improved from the 2010 performance of 661 minutes. There was a reduction in the contribution to SAIDI from faults due to external factors such as emergency outages to remove hazards, lightning, bushfires, vandalism and vehicles. The main work programs that contributed to the Rural Long SAIDI reduction were power line reinforcement and the installation of automated switchgear. The Rural Long distribution network is susceptible to environmental events such as weather and bushfires. However, the work programs conducted in the 12 months to 30 June 2011 and in previous years should ensure that performance meets the benchmark for the year ending June 2012, noting there is approximately a 12 month lag in the SAIDI impact of investment. See section 7.1.1 regarding Major Event Days that were excluded from the Rural Long SAIDI.
SWIN SAIFI	≤ 2.46	1.76	Performance was better than the 2011 benchmark and improved from the 2010 performance of 2.00. There was a reduction in the contribution to SAIFI from faults due to external factors such as lightning, bushfires, vandalism and vegetation Those activities contributing to the overall performance improvement of the distribution network include: • targeted maintenance work programmes during and following the 22 March 2010 significant storm which affected the urban network • power line reinforcements • installation of automated switchgear on the rural network In addition, we believe there has been a reduced impact to the reliability performance of the distribution network from the weather patterns over the 12 months to June 2011. The work programs conducted in the 12 months to 30 June 2011 are expected to ensure that SWIN SAIFI performance meets the benchmark for the year ending June 2012, noting there is approximately a 12 month lag in the SAIFI impact of investment. See section 7.1.1 regarding Major Event Days that were excluded from the SWIN SAIFI.

Service Standard Benchmark	2011 Performance		Comments
	Benchmark	Actual	
CBD SAIFI	≤ 0.24	0.23	Performance was better than the 2011 benchmark but worse than the 2010 performance of 0.02. There was an increase in outages due to overloads in 2011 compared to 2010 on the low voltage distribution network which affected a localised area. Remedial actions were taken to reduce the occurrence of similar interruptions. Performance in the year ending June 2012 is expected to meet the benchmark. However, the CBD SAIFI performance indicator is potentially volatile over short periods of time due to the combined effects of small customer numbers and the relatively long repair times stemming from the fully underground CBD network. See section 7.1.1 regarding Major Event Days that were excluded from the total CBD SAIFI.
Urban SAIFI	≤ 1.89	1.31	Performance was better than the 2011 benchmark and improved from the 2010 performance of 1.55. There was a reduction in the contribution to SAIFI from faults due to external factors such as lightning, bushfires, vandalism and vegetation. Those activities contributing to the overall performance improvement of the distribution network include • targeted maintenance work programmes during and following the 22 March 2010 significant storm which affected the urban network • power line reinforcements on urban network In addition, we believe there has been a reduced impact to the reliability performance of the distribution network from the weather patterns over the 12 months to June 2011. The work programs conducted in the 12 months to 30 June 2011 are expected to result in performance improvements to meet benchmarks for the year ending June 2012, noting there is approximately a 12 month lag in the SAIFI impact of investment. See section 7.1.1 regarding Major Event Days that were excluded from the Urban SAIFI.

Service Standard Benchmark	2010 Performance		Comments
	Benchmark	Actual	
Rural Short SAIFI	≤ 3.06	2.11	Performance was better than the 2011 benchmark and improved from the 2010 performance of 2.33. There was a reduction in the contribution to SAIFI from faults due to external factors such as lightning, vegetation, bushfires and vandalism. The main work programs that contributed to the Rural Short SAIFI reduction were power line reinforcements and the installation of automated switchgear. The work programs conducted in the 12 months to 30 June 2011 are expected to result in performance improvements to meet benchmarks for the year ending June 2012, noting there is approximately a 12 month lag in the SAIFI impact of investment. See section 7.1.1 regarding Major Event Days that were excluded from the Rural Short SAIFI.
Rural Long SAIFI	≤ 4.85	3.86	Performance was better than the 2011 benchmark and improved from the 2010 performance of 4.17. There was a reduction in the contribution to SAIFI from faults due to external factors such as bushfires, vegetation, vehicles and lightning. The main work programs that contributed to the Rural Long SAIFI reduction were power line reinforcements and the installation of automated switchgear. The work programs conducted in the 12 months to 30 June 2011 are expected to result in performance improvements to meet benchmarks for the year ending June 2012, noting there is approximately a 12 month lag in the SAIFI impact of investment. See section 7.1.1 regarding Major Event Days that were excluded from the Rural Long SAIFI.

6.2 Transmission

Table 13: Transmission performance commentary for the year ending June 2012

Service Standard Benchmark	2011 Performance		Comments
	Benchmark	Actual	
Circuit availability	≥ 98.0%	97.9%	Performance was worse than the 2011 benchmark and worse than the 2010 performance of 98.432% The majority of circuit unavailability is due to planned work on the transmission network. In comparison to previous years, there were increases in plant upgrades and maintenance activities that impact Circuit Availability. Planned work activities on the transmission system pose a risk to circuit availability not reaching the benchmark in 2012. The improved maintenance coordination will mature further in the year ending June 2012 which will help alleviate this risk and should result in improved performance in future years. The performance excludes Circuit Availability related to the *force majeure* event on the 29 June 2011 (see section 7.2.1 for details). In addition, planned outages for major construction work were capped at 14 days (see section 7.2.2 for details).
System Minutes Interrupted Meshed Network	≤ 9.3	6.7	Performance was better than 2011 benchmark and better than the 2010 performance of 8.944 minutes. Due to in maintenance activities and revised work practices, there were decreases in the contribution from substation switchboard fault protection operations (known as “frame leakage” protection”), faults due to flashovers and asset failures. The performance excludes System Minutes Interrupted related to the *force majeure* event on the 29 June 2011 (see section 7.2.1 for details). Performance is expected to continue to meet the benchmark in the year ending June 2012.

Service Standard Benchmark	2011 Performance		Comments
	Benchmark	Actual	
System Minutes Interrupted Radial Network	≤ 1.4	4.8	Performance was worse than the 2011 benchmark and worse than the 2010 performance of 0.750 minutes. The increase is primarily due to pole top fire activity on a circuit. The circumstances that lead to the pole top fires are being addressed by way of maintenance and plant upgrades. The performance excludes System Minutes Interrupted related to the *force majeure* event on the 29 June 2011 (see section 7.2.1 for details). Performance is expected to continue to meet the benchmark in the year ending June 2012. However, some circuits of the radial network are susceptible to environmental events, which may affect performance until maintenance activities are completed.
Loss of Supply Events >0.1 to 1.00 System Minute	≤ 25	18	Performance was better than the 2011 benchmark and better than the 2010 performance of 27. Due to the increase in maintenance activities and revised work practices, there were decreases in the contribution from substation switchboard fault protection operations – known as “frame leakage protection”, as well as faults due to equipment flashovers. The performance excludes System Minutes Interrupted related to the *force majeure* event on the 29 June 2011 (see section 7.2.1 for details). Performance is expected to continue to meet the benchmark in the year ending June 2012.
Loss of Supply Events >1 System Minute	≤ 2	1	Performance was better than the 2011 benchmark and better than the 2010 performance of 2. There were decreases faults due to equipment fire. The performance excludes System Minutes Interrupted related to the *force majeure* event on the 29 June 2011 (see section 7.2.1 for details). Performance is expected to continue to meet the benchmark in the year ending June 2012.

Service Standard Benchmark	2011 Performance		Comments
	Benchmark	Actual	
Average Outage Duration	≤ 764	675	Performance was better than the 2011 benchmark and better than the 2010 performance of 679 minutes. There were decreases number of outages due to significant equipment fire and targeted maintenance resulted in the reduction in outages due to flashovers. Performance is expected to meet the benchmark in the year ending June 2012.

6.3 Streetlights

Table 14: Streetlight performance commentary for the year ending June 2012

	Service Standard Benchmark	2011 Performance		Comments
		Benchmark	Actual	
Streetlight Repairs	Perth Metropolitan Area	≤ 5 days	1.38	Performance was better than the 2011 benchmark and better than the 2010 performance of 1.98 days. The improvement in performance is due to: • the introduction of a range of improvement initiatives in 2009/10 and 2010/11 • a reduced volume of streetlight faults reported because of the increase in pro-active maintenance • the mild weather experienced throughout the year in comparison to previous years Performance is expected to meet the benchmark in the year ending June 2012.
	Major Regional towns	≤ 5 days	1.51	Performance was better than the 2011 benchmark and better than from the 2010 performance of 1.98 days. The improvement in performance is due to: • the introduction of a range of improvement initiatives in 2009/10 and 2010/11 • a reduced volume of streetlight faults reported because of the increase in pro-active maintenance • the mild weather experienced throughout the year in comparison to previous years Performance is expected to meet the benchmark in the year ending June 2012.
	Remote and Rural Towns	≤ 9 days	1.74	Performance was better than the 2011 benchmark and worse than the 2010 performance of 1.70 days. The total volume of faults for the Remote and Rural towns (which has wide a geographical base) reduced in 2010/11. This creates slightly longer repair times as crews wait for optimal bundle of works before dispatching to ensure labour and cost efficiencies. Performance is expected to meet the benchmark in the year ending June 2012.

7 Service Standard Adjustment Mechanism

The Authority applies a financial reward or penalty to Western Power in relation to the actual performance in respect to SAIDI, SAIFI, Circuit Availability and System Minutes Interrupted.

The reward or penalty is calculated using the following equations as per Western Power's Access Arrangement Contract.

$SSD_{2009/10} = (SSB_{2009/10} - SSA_{2009/10})$

$SSD_{2010/11} = (SSB_{2010/11} - SSA_{2010/11}) - (SSB_{2009/10} - SSA_{2009/10})$

$SSD_{2011/12} = (SSB_{2011/12} - SSA_{2011/12}) - (SSB_{2010/11} - SSA_{2010/11})$

Where:

SSD_t is the service standard difference in year t;

SSB_t is the service standard benchmark in year t; and

SSA_t is the actual service performance in year t.

Table 15 shows the results of the service standard adjustment mechanism for the performance to 30 June 2011. All values are expressed in real dollars as at 30 June 2009.

Table 15: SSAM results for the year ending June 2012

	Service Standard Benchmark		Year	Incentive Rate ($ per unit)	2011			Penalty (-) or Reward (+)
					SSB	SSA	SSD	
Distribution	SAIDI (minutes)	CBD	2010	$220,000	38	1	37	$8,140,000
			2011		38	30	-29	-$6,380,000
			Total CBD SAIDI Penalty/Reward					**$1,760,000**
		Urban	2010	$220,000	165	156	9	$1,980,000
			2011		162	120	33	$7,260,000
			Total Urban SAIDI Penalty/Reward					**$9,240,000**
		Rural Short	2010	$8,200	259	212	47	$385,400
			2011		253	192	14	$114,800
			Total Rural Short SAIDI Penalty/Reward					**$500,200**
		Rural Long	2010	$8,200	612	661	-49	-$401,800
			2011		588	529	108	$885,600
			Total Rural Long SAIDI Penalty/Reward					**$483,800**
	SAIFI (events)	CBD	2010	$10,300,000	0.24	0.02	0.22	$2,266,000
			2011		0.24	0.23	-0.21	-$2,163,000
			Total CBD SAIFI Penalty/Reward					**$103,000**
		Urban	2010	$10,300,000	1.92	1.55	0.37	$3,811,000
			2011		1.89	1.31	0.21	$2,163,000
			Total Urban SAIFI Penalty/Reward					**$5,974,000**
		Rural Short	2010	$450,000	3.12	2.33	0.79	$355,500
			2011		3.06	2.11	0.16	$72,000
			Total Rural Short SAIFI Penalty/Reward					**$427,500**
		Rural Long	2010	$450,000	5.00	4.17	0.83	$373,500
			2011		4.85	3.86	0.16	$72,000
			Total Rural Long SAIFI Penalty/Reward					**$445,500**
Total Distribution Penalty/Reward								**$18,934,000**

	Service Standard Benchmark		Year	Incentive Rate ($ per unit)	2011			Penalty (-) or Reward (+)
					SSB	SSA	SSD	
Transmission	Circuit Availability (%)		2010	(-) $375,000 per 0.1%	98.0%	98.432%	-0.432%	$162,000
			2011		98.0%	97.904%	0.528%	-$198,000
			Total Circuit Availability Penalty/Reward					**-$360,000**
	System Minutes Interrupted (minutes)	Meshed Network	2010	$75,000 per 0.1 minute	9.300	8.944	0.356	$267,000
			2011		9.300	6.685	3.676	$1,694,250
			Total SMI Meshed Network Penalty/Reward					$1,961,250
		Radial Network	2010	$25,000 per 0.1 minute	1.400	0.750	0.650	$162,500
			2011		1.400	4.833	-4.083	-$1,020,750
			Total SMI Radial Network Penalty/Reward					**-$858,250**
Total Transmission Penalty/Reward								**$743,000**

Total Penalty/Reward for 2009/10 and 2010/11	**$19,677,000**

7.1 Exclusions in distribution performance service standards

As indicted in section 5.1, for the 12 months to June 2010 and the 12 months to June 2011, the distribution performance service standards exclude the outages as indicated below:

7.1.1 Major Event Days (MED)

The following SAIDI (minutes) and SAIFI (events) were excluded for each feeder classification as Major Event Days as per IEEE 1366-2003 definitions, which resulted in exclusions by the following feeder classification levels

Table 16: SAIDI and SAIFI exclusions due to Major Event Days

			2010	2011
Major Event Days	SAIDI	CBD	0	3
		Urban	236	19
		Rural Short	170	186
		Rural Long	218	553
		SWIN	214	114
	SAIFI	CBD	0.00	0.01
		Urban	0.48	0.07
		Rural Short	0.42	0.39
		Rural Long	0.59	0.60
		SWIN	0.47	0.21

There were four days during the 12 months to 30 June 2011 which exceeded the daily Major Event Day threshold of 6.08 minutes.

For details on the performance of the distribution system for the 12 months to June 2011 please refer to section 5.1.

7.1.1.1 26 December 2010 (SAIDI = 8.27 minutes, SAIFI = 0.037)

Strong wind gusts exceeding 90 kph caused damage to, and blowing debris into overhead distribution assets. Approximately 32,000 customers were affected in the Perth area.

7.1.1.2 29 January 2011 (SAIDI = 55.7 minutes, SAIFI = 0.086)

A storm event with wind gusts exceeding 120 kph caused damage to the distribution network. Approximately 71,000 customers were affected, predominantly in the Wheatbelt and Great Southern regions.

7.1.1.3 6 February 2011 (SAIDI = 6.47 minutes, SAIFI = 0.017)

Localised bushfires in the outer Perth areas fanned by strong winds caused damage to the distribution network. Approximately 13,000 customers were affected.

7.1.1.4 28 February 2011 (SAIDI = 42.9 minutes, SAIFI = 0.068)

Thunderstorm activity and localised strong winds in the afternoon resulted in damage to the distribution network. Approximately 59,000 customers were affected, predominantly in the Perth northern suburbs, Hills and South East regions.

7.1.2 Transmission system

The following SAIDI (minutes) and SAIFI (events) were excluded for each feeder classification due to outages due to the Transmission system for the previous two financial years.

Table 17: SAIDI and SAIFI exclusions due to the transmission system

			2010	2011
Transmission	SAIDI	CBD	3	1
		Urban	67	14
		Rural Short	16	23
		Rural Long	31	97
		SWIN	51	24
	SAIFI	CBD	0.19	0.03
		Urban	0.35	0.23
		Rural Short	0.23	0.29
		Rural Long	0.57	0.42
		SWIN	0.36	0.26

For details on the performance of the transmission system for the 12 months to June 2011 please refer to Section 6.2.

7.1.3 Other third party systems

The following SAIDI (minutes) and SAIFI (events) were excluded for each feeder classification due to outages due to generator unavailability or customer equipment.

Table 18: SAIDI and SAIFI exclusions due to other third party systems

			2010	2011
Third Party	SAIDI	CBD	2	5
		Urban	8	5
		Rural Short	5	4
		Rural Long	3	7
		SWIN	7	5
	SAIFI	CBD	0.06	0.13
		Urban	0.13	0.13
		Rural Short	0.07	0.07
		Rural Long	0.03	0.09
		SWIN	0.11	0.11

This included an instance of generator failure on the 15 February 2011, which resulted in the de-energisation of circuits to stabilise the frequency on the transmission network.

7.1.4 Planned outages

The following SAIDI (minutes) and SAIFI (events) were excluded for each feeder classification due to outages due to planned work on the distribution network, which are conducted to expand and upgrade the distribution network to mitigate unplanned interruptions.

Table 19: SAIDI and SAIFI exclusions due to planned outages

			2010	2011
Planned Outages	SAIDI	CBD	6	3
		Urban	53	70
		Rural Short	59	88
		Rural Long	135	121
		SWIN	61	79
	SAIFI	CBD	0.01	0.00
		Urban	0.21	0.25
		Rural Short	0.24	0.33
		Rural Long	0.52	0.59
		SWIN	0.25	0.30

7.1.5 Force Majeure

There were no events on the Distribution network that were classified as *force majeure*.

7.2 Exclusions in transmission performance service standards

As indicted in section 5.2, for the 12 months to June 2010 and the 12 months to June 2011, the transmission performance service standards exclude the outages as indicated below:

7.2.1 Force majeure

The following exclusions on the transmission service standards due to *force majeure*.

Table 20: Transmission exclusions due to *force majeure*

			2010	2011
Force Majeure	Circuit Unavailability (%)		0.034%	0.008%
	System Minutes Interrupted (minutes)	Meshed Network	9.617	2.864
		Radial Network	0.000	0.066

A storm event on the 29 January 2011 (see also section 7.1.1.2) formed in northern part of Western Australia and propagated southward through the Central West, causing severe winds, lightning and rainfall. While not related directly to tropical cyclone Bianca, the southward movement of the cyclone along the state line resulted in strong mid-level winds that contributed to the development of the thunderstorm. The result was significant localised damage to parts of the Central West, the Central Wheat Belt and northwest Great Southern regions. Wind Gusts up to 126 kph were recorded at Cunderdin.

More than 13,000 customers had their supply interrupted on the day as a direct result of the transmission faults in these areas. There were more than 30 faults on the transmission network and around 198 MWh of load was lost for the extended duration of the outage.

In calculating Transmission Service Standard Performance for the 12 months to 30 June 2011 Western Power has assumed the transmission events that affected the areas mentioned above on the 29 January 2011 to be *force majeure* (as defined in the Electricity Networks Access Code 2004).

7.2.2 Planned outages for major construction work exceeding 14 days

In calculating circuit availability, planned outages for major construction work are capped at 14 days.

Table 21 shows the following information for each financial year:

- the number of planned outages for major construction work that were capped at 14 days
- the total number of days for these outages that exceeded the 14 day cap.

Table 21: Planned outages for major construction work exceeding 14 days

	2010	2011
Number of planned outages	33	50
Total days exceeding the 14 day cap	587	377