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Access Arrangement  
Service Standard Report

Financial Year Ending June 2008

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28 October 2008

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## 1 Introduction

This report presents information required in accordance the *Electricity Networks Access Code 2004* ("the Code") for the financial year ending 30 June 2008.

## 2 Preamble

Section 11.2 of the Electricity Networks Access Code 2004 requires the Authority to monitor and annually publish a report on Western Power's actual service performance against the service standard benchmarks that are set out in Western Power's approved Access Arrangement.

This report to the Authority is a *service standard performance report* for 2007/08 and is intended to provide the information which the Authority has requested from Western Power under section 11.3 of the Code.

## 3 Service Standard Benchmarks Description

### 3.1 Circuit Availability

Circuit Availability is the percentage of total possible hours available for transmission circuits divided by the total possible defined circuit hours available.

Inclusions:

- 'Circuits' includes primary transmission equipment such as overhead lines, underground cables and bulk transmission power transformers; and
- Circuit 'unavailability' to include outages from all causes including planned, forced and emergency events, including extreme events, but not including the events defined as exclusions.

Exclusions:

- Tee configuration line circuits;
- Force majeure events; and
- Duration of planned outages for major construction work is capped at 14 days in calculating transmission line availability.

NB. For further details please see the approved Access Arrangement.

### 3.2 System Minutes Interrupted (SMI)

SMI is measured in minutes and is the summation of the Megawatt (MW) minutes of unserved energy at substations which are connected to the transmission network divided by the peak MW. SMI is measured for both the Meshed and Radial portions of the transmission network.

Inclusions:

- All unserved energy due to outages on any primary transmission equipment including all overhead lines, underground cables, power transformers, static var compensators, capacitor banks, etc. including primary zone substation equipment; and

- All unserved energy due to outages for forced and emergency events, including extreme events, but not including the events defined as exclusions.

Exclusions:

- Force majeure events.

NB. For further details please see the approved Access Arrangement.

### 3.3 System Average Interruption Duration Index (SAIDI)

SAIDI represents the average number of minutes without supply for each customer during a 12 month period on a particular network.

Exclusions:

- Outages due to transmission events;
- Outages due to generation events;
- Planned outages;
- Western Power uses the 2.5 Beta method as per IEEE 1366 to determine the following exclusions as per SCNRRR:
  - Individual events that exceed a threshold SAIDI impact of 3 minutes; and
  - Events that are caused by exceptional natural or third party incidents.

NB. For further details please see the approved Access Arrangement.

### 3.4 System Average Interruption Frequency Index (SAIFI)

SAIFI represents the average number of sustained supply interruptions for each customer during a 12 month period on a particular network.

Exclusions:

- Outages due to transmission;
- Outages due to generation;
- Planned outages;
- Western Power uses the 2.5 Beta method as per IEEE 1366 to determine the following exclusions as per SCNRRR:
  - Individual events that exceed a threshold SAIDI impact of 3 minutes; and
  - Events that are caused by exceptional natural or third party incidents.

NB. For further details please see the approved Access Arrangement.

## 4 Actual Performance

Actual performance is shown in the attached tables, including:

- An explanation of performances outside the normal performance range; and
- A comparison of performance for financial years 2006/07 and 2007/08 with supporting commentary.

## 5 Actions currently undertaken by Western Power

Western Power uses a number of sophisticated systems to analyse the performance of the SWIN. This analysis is used in the development of the works program, which endeavors to continually improve the service standard performance. Western Power has a Reliability Management Plan and develops reliability improvement strategies that are implemented through the works program. These include (but are not limited to) the following activities:

- Extensive automation program which involves the installation of automated switching devices; and
- Targeted maintenance and reinforcement work on the worst performing parts of the distribution network.

NB. For further details please see the approved Access Arrangement.

**Western Power Access Arrangement Service Standard Benchmarks**  
(Reference DMS# 4010670 - Electricity Compliance Manual Datasheet - Western Power Access)

**COMPARISON OF ACTUAL vs TARGET NETWORK PERFORMANCE FOR YEAR 2006/07**

No	Description	Target Performance Bandwidth			Actual Performance	Variance to Target (%)	Explanation of Variance Outside Normal performance Bandwidth
		-10%	Target	10%			
AA 1	Circuit availability (% of total time)	97.7	98.2	98.7	98.0	-0.2	
AA 2	System minutes interrupted (meshed network)	7.0	7.8	8.6	14.2	82.1	Actual performance was above the normal performance range due to bushfires damaging equipment and a number of uncharacteristic equipment failures in substations (now repaired and/or replaced). Future performance is expected to be within the normal range, notwithstanding any unforeseen major events.
AA 3	System minutes interrupted (radial network)	3.5	3.9	4.3	1.4	-64.1	Actual performance was below the normal performance range due to the fact that the expected effects of exposure to environmental factors did not eventuate. Should this continue, system minutes interrupted for radial networks may remain better than target performance in future years. In addition, see note below.
AA 4	SAIDI - SWIN total	249	277	305	229	-17.3	See note below
AA 5	SAIDI - Urban	200	222	244	145	-34.7	Actual performance was under the lower limit because of a general decrease in the impact of interruptions due to increased vegetation inspections and targeted maintenance in poor reliability areas. With these improved strategies in place, performance is expected to remain better than target in future years. In addition, see note below.
AA 6	SAIDI - Rural Short	383	425	467	333	-21.6	See note below
AA 7	SAIDI - Rural Long	667	741	815	625	-15.7	See note below
AA 8	SAIDI - CBD	19	21.4	24	33	54.2	Performance was above the normal performance range due to a cable joint failure in January. The CBD SAIDI performance indicator is potentially quite volatile over short periods of time due to the combined effects of small customer numbers and the relatively long repair times in a fully underground network. However, interruptions are relatively rare and performance is expected to be within the normal range in future years.
AA 9	SAIFI - SWIN total	3.1	3.44	3.78	2.52	-26.7	Performance was below the normal performance range due to the aggregate benefits of improved reliability strategies in place. Performance is expected to remain better than target in future years. In addition, see note below.
AA 10	SAIFI - Urban	2.81	3.12	3.43	1.83	-41.3	Actual performance was under the lower limit because of a general decrease in the impact of interruptions due to increased vegetation inspections and targeted maintenance in poor reliability areas. With these improved strategies in place, performance is expected to remain better than target in future years. In addition, see note below.
AA 11	SAIFI - Rural Short	4.4	4.89	5.37	3.84	-21.5	Performance was below the lower limit due primarily to increased vegetation inspections and maintenance. Performance is expected to be within the normal range in future years. In addition, see note below.
AA 12	SAIFI - Rural Long	5.03	5.58	6.13	4.73	-15.2	See note below
AA 13	SAIFI - CBD	0.29	0.32	0.35	0.26	-18.8	Performance was below the normal performance range due to the relatively small customer impact of each interruption. CBD SAIFI is expected to remain better than target in future years, noting that it is potentially volatile over short periods of time, similar to CBD SAIDI.

Note

Actual performance excludes planned interruptions and consequently is under the lower limit (Target Performance Bandwidths are inclusive of planned interruptions). Consequently performance based on SCNRRR Normalised Unplanned methodology is expected to be better than target in future years.

Western Power Access Arrangement Service Standard Benchmarks

COMPARISON OF ACTUAL vs TARGET NETWORK PERFORMANCE FOR YEAR 2007/08

No	Description	Target Performance Bandwidth			Actual Performance	Variance to Target (%)	Explanation of Variance Outside Normal performance Bandwidth
		-10%	Target	10%			
AA 1	Circuit availability (% of total time)	97.7	98.2	98.7	98.2	0.0	
AA 2	System minutes interrupted (meshed network)	7.0	7.8	8.6	8.7	11.5	Actual performance was above the normal performance range due to a number of un-characteristic equipment failures in substations (now repaired and/or replaced). Future performance is expected to be within the normal range, notwithstanding any unforeseen major events.
AA 3	System minutes interrupted (radial network)	3.5	3.9	4.3	1.8	-53.8	Actual performance was below the normal performance range due to the fact that the expected effects of exposure to environmental factors did not eventuate. Should this continue, system minutes interrupted for radial networks may remain better than target performance in future years.
AA 4	SAIDI - SWIN total	233	259	285	230	-11.2	Actual performance was below the normal performance range due to the approved performance measures being inclusive of planned interruptions and actual performance being exclusive of planned interruptons.
AA 5	SAIDI - Urban	188	208	228	165	-20.7	
AA 6	SAIDI - Rural Short	359	398	437	260	-34.7	
AA 7	SAIDI - Rural Long	624	693	762	611	-11.8	
AA 8	SAIDI - CBD	18	20	22	51	155.0	Performance was above the normal performance range due a cable failure in March. The CBD SAIDI performance indicator is potentially quite volatile over short periods of time due to the combined effects of small customer numbers and the relatively long repair times in a fully underground network. However, interruptions are relatively rare and performance is expected to be within the normal range in future years.
AA 9	SAIFI - SWIN total	2.9	3.22	3.54	2.5	-22.4	Actual performance was below the normal performance range due to the approved performance measures being inclusive of planned interruptions and actual performance being exclusive of planned interruptons.
AA 10	SAIFI - Urban	2.62	2.91	3.2	1.91	-34.4	
AA 11	SAIFI - Rural Short	4.13	4.58	5.03	3.13	-31.7	
AA 12	SAIFI - Rural Long	4.7	5.22	5.74	4.99	-4.4	
AA 13	SAIFI - CBD	0.27	0.3	0.33	0.23	-23.3	

## Western Power Access Arrangement Service Standard Benchmarks

### COMPARISON OF 2007/08 vs 2006/07 ACTUAL PERFORMANCE

No	Description	Actual Performance		Explanation of trends
		2006/07	2007/08	
AA 1	Circuit availability (% of total time)	98.0	98.2	No practical variation
AA 2	System minutes interrupted (meshed network)	14.2	8.7	In comparison to the 2006/07 financial year, there was a reduction in the impact of outages due to bushfires damaging equipment
AA 3	System minutes interrupted (radial network)	1.4	1.8	In comparison to the 2006/07 financial year, there was an increase in the impact of outages due to bushfires
AA 4	SAIDI - SWIN total	229	230	No practical variation
AA 5	SAIDI - Urban	145	165	In comparison to the 2006/07 financial year, there was an increase in the impact of outages due to storm damage and equipment failure
AA 6	SAIDI - Rural Short	333	260	In comparison to the 2006/07 financial year, there was a reduction in the impact of outages due to equipment failure, bushfire damage and storm damage
AA 7	SAIDI - Rural Long	625	611	In comparison to the 2006/07 financial year, there was a reduction in the impact of outages due to lightning
AA 8	SAIDI - CBD	33	51	In comparison to the 2006/07 financial year, there was an increase in the impact of outages due to equipment failure
AA 9	SAIFI - SWIN total	2.52	2.50	No practical variation
AA 10	SAIFI - Urban	1.83	1.91	In comparison to the 2006/07 financial year, there was an increase in the impact of outages due to equipment failure
AA 11	SAIFI - Rural Short	3.84	3.13	In comparison to the 2006/07 financial year, there was a decrease in impact of vehicles, fauna and lightning
AA 12	SAIFI - Rural Long	4.73	4.99	In comparison to the 2006/07 financial year, there was an increase in the impact of outages due to equipment failure
AA 13	SAIFI - CBD	0.26	0.23	No practical variation