



**ANNUAL SERVICE QUALITY REPORT  
JULY 2005 TO JUNE 2006**

**ENERGEN LIMITED**

**August 2006**

For media enquiries, please contact ENERGEN Corporate Communications on (07) 3407 4420

## **Annual service quality report**

### **Introduction**

As the electricity distributor in south-east Queensland, ENERGEX is committed to delivering excellent service to its customers.

This report describes the quality of ENERGEX's service to the customers of its electricity distribution network.

In this annual report, ENERGEX provides a range of information on the state of its distribution network, including information on the size of the network, the total amount of electricity supplied to customers, and areas of the network where reliability is significantly less than the majority of similar areas in the network.

In order to keep customers up to date, ENERGEX also reports a wide range of service quality measures on a quarterly basis, covering the quarters from January to March, April to June, July to September, and October to December. These quarterly reports include extensive information on the reliability of supply, the quality of supply (voltage), and many different measures of customer service such as the performance of the call centre, the time taken to fix street lights, and punctuality in keeping appointments with customers.

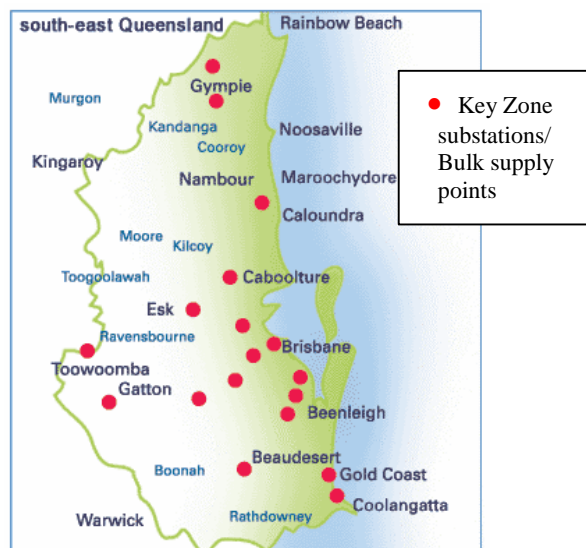
### **About ENERGEX's electricity distribution network**

This report focuses on the performance of ENERGEX's electricity distribution network. The distribution network is the network of poles, wires, underground cables, and transformers that takes electricity from the high voltage wires operated by the electricity transmission company, and delivers them to customers' factories, shops, and houses in south-east Queensland.

ENERGEX provides electricity distribution services to customers in south-east Queensland, in a region stretching from Gympie in the north to Gatton in the west and Coolangatta in the south.

Within this supply area, ENERGEX supplies electricity to more than 1.16 million customers, including around 865,000 urban customers, and over 294,000 rural customers.

A series of thunderstorms affected south-east Queensland during November and December 2005, contributing to electricity outages experienced by customers over the 2005-06 financial year. ENERGEX is very conscious of the impact of outages on customers, and is always striving to improve its reliability performance. ENERGEX has invested heavily in our network to improve reliability and the results can be seen throughout the information provided in this report.



**Map of ENERGEX's electricity distribution network**

### *Measuring ENERGEX's performance*

ENERGEX Performance is assessed in a number of ways to provide a complete picture of the quality of services provided to customers. This report provides information on ENERGEX's distribution network, including:

- a summary of reliability performance over the financial year, which is reported in detail in the Quarterly ENERGEX Service Quality reports. Reliability performance reports on the number and duration of interruptions in electricity supply experienced by customers;
- the size and characteristics of the network (the physical size in square kilometres of ENERGEX's network, the length of overhead and underground lines, the number of poles, the

number of transformers in the network, and the amount of energy delivered to customers);

- the utilisation of ENERGEX's transformers, and maximum demand on the network;
- the performance of the 10 worst performing feeders in urban and rural sections of ENERGEX's network; and
- measures taken to address quality of supply (ie. voltage) problems reported by customers.

ENERGEX monitors the performance of all parts of its distribution network to ensure that all customers receive an acceptable level of service. One way we do this is to examine and report on the performance of different areas of the network with a special focus on the reliability of the feeders that deliver electricity to customers connected to the network. We classify and analyse reliability performance looking at three important industry measures of reliability:

- the total duration of interruptions to supply during the year to these feeders (called System Average Interruption Duration Index or SAIDI);
- the number of times supply was interrupted during the year to these feeders (called System Average Interruption Frequency Index or SAIFI); and
- the average length of time to restore power after an interruption (called Customer Average Interruption Duration Index or CAIDI).

Another important measure of ENERGEX's performance is its ability to provide good quality of supply. This means supplying electricity at a constant voltage (generally 240 volts) and to a standard technical specification suitable for customers' electrical equipment. This report provides information on any quality of supply problems

reported by customers, and classifies these reported problems by cause, and by the type of remedial action taken to fix them.

## Summary of ENERGEX's Performance

### Reliability Performance

For the whole distribution network to the end of the 2005-06 financial year and after removal of excluded events, the reliability performance results show sustained levels of service quality since the 2004-05 financial year. Summarising the overall reliability performance:

- the average duration of interruptions for 2005-06 as measured by SAIDI was 154.787 minutes, which was an improvement on the 162.403 minutes reported for 2004-05;
- the average number of interruptions for 2005-06 as measured by SAIFI was 1.882 times, which was fairly consistent with the 1.717 reported for 2004-05; and
- the average time taken to restore power after an interruption for 2005-06 as measured by CAIDI was 82.259 minutes, an improvement on the 94.571 minutes reported for 2004-05.

Breaking down the overall reliability performance into the geographical categories of CBD, urban and short rural, the ENERGEX reliability performance can be assessed for different customer groups. ENERGEX is also given reliability targets called minimum service standards (MSS) set by the Queensland Government in the Electricity Industry Code. The reliability performance by category for 2005-06 compared to the MSS and 2004-05 financial year are summarised in Table 1.

**Table 1**      **ENERGEX Reliability performance by feeder category**

Category	measure	MSS 05-06	2005-06	2004-05
CBD	SAIDI	20.00	3.90	2.20
	SAIFI	0.33	0.02	0.02
	CAIDI		170.20	91.40
Urban	SAIDI	155.00	103.82	123.82
	SAIFI	1.73	1.41	1.34
	CAIDI		73.59	92.71
Short rural	SAIDI	265.00	306.35	241.25
	SAIFI	2.77	3.29	2.50
	CAIDI		93.19	96.58

The reliability performance across the categories shows strong CBD and urban performance. The strong improvements in urban performance have resulted from increased operating and maintenance activity. In particular, tree trimming has reduced the impact of severe storms and winds on the overhead urban network.

The short rural performance has not met expectations. The drivers of the current reliability performance in the short rural network are:

- 2005 storm activity impacting predominantly on the short rural network; and
- rapid urban spread resulting in short rural feeders on urban fringes being reclassified as urban feeders due to the increased load densities. This has the effect of reducing the short rural

customer base and inflating the customer based averages of SAIDI and SAIFI.

In addition, there is an overstatement in the duration and occurrence of interruptions on the short rural network. ENERGEX has initiated investigation into the underlying factors of the short rural performance. During the course of these investigations, a processing “error” was discovered in the way that new feeders were categorised as urban or rural in the ENERGEX network database. It is estimated that this processing error caused an overstatement in the short rural result of between 5 and 6 percent over the last 12 months. The process has been corrected, but will take the next 12 months to be fully reflected in the rolling 12 months results. The impact of the error on urban performance was minimal because of the larger size of the urban customer base.

### **Network Characteristics**

ENERGEX has invested heavily in our network to accommodate the high customer growth in south-east Queensland and improve reliability standards across the network. This investment can be seen in the network characteristics data.

- the overhead sub-transmission network increased by 37 km from 3,161 km to 3,198 km, while the underground sub-transmission network increased by 44.6 km from 945.2 km to 989.8 km;
- 19 sub-transmission transformers were installed during 2005-06 taking the total number of sub-transmission transformers to 489 with an additional 11 per cent of installed capacity raising the total capacity to 7,307 MVA.
- 1,497 distribution transformers were installed taking the total number of distribution transformers to 41,069 with an additional 9 per cent of installed capacity raising the total capacity to 9,657 MVA;
- the physical characteristics of the CBD network continued to be upgraded through the major Citigrind project;
- the physical characteristics of the urban network showed expansion of the underground network;
- the physical characteristics of the short rural network showed growth across both the underground and overhead networks;
- Within ENERGEX’s network service area of 25,624 square kilometres, the number of poles increased by 7,212 during 2005-06 to 605,326 poles.
- the total amount of energy delivered was 20,750 GWh, which represents a 5.76 per cent increase on the 19,620GWh recorded for the previous financial year;
- the amount of distribution losses experienced by the network was 6.50 per cent for the financial year, which was above the 5.79 recorded for 2004-05; and
- the amount of unplanned energy not supplied remained steady at 5,358 MWh (from 5,542MWh in 2004-05);

### **Worst performing feeders**

The worst performing feeders were selected according to normalised distribution SAIDI minutes. This was different to previous years and requested by the QCA. The normalised data selects the worst performing feeders excluding the impact of severe and unpredictable events.

### **Quality of Supply**

Network initiated customer complaints regarding the quality of supply increased to 1,811 compared 1,134 in the previous financial year. The increase in complaints has arisen with consumer expectations on electrical goods with electronic controls, which are more sensitive to variations in electricity supply.

## 1. Administrative Data

Item No.	Measure	Descriptor	Value
1.1	<i>DNSP Business</i>	Name	ENERGEX Limited
1.2	<i>First day of reporting period</i>	date	01-07-2005
1.3	<i>Last day of reporting period</i>	date	30-06-2006

## 2. Aggregate Data

Item No.	Measure	Descriptor	Value
2.2 <sup>a</sup>	<i>Length of distribution lines</i>		
	Sub-transmission lines		
	sub-transmission – overhead	kilometres	3,198
	sub-transmission – underground	kilometres	989.8
	CBD		
	high voltage – overhead	kilometres	0
	high voltage – underground	kilometres	95.4
	low voltage – overhead	kilometres	1.6
	low voltage – underground	kilometres	26.1
	Urban		
	high voltage – overhead <sup>b</sup>	kilometres	3,628.4
	high voltage – underground	kilometres	2,663.5
	low voltage – overhead	kilometres	6,800.7

Item No.	Measure	Descriptor	Value
	low voltage – underground	kilometres	5,616.2
	Short rural		
	high voltage – overhead <sup>b</sup>	kilometres	13,674.5
	high voltage – underground	kilometres	911.7
	low voltage – overhead	kilometres	7,986.5
	low voltage – underground	kilometres	2,522.4
	Long rural		
	high voltage – overhead	kilometres	Nil
	high voltage – underground	kilometres	Nil
	low voltage – overhead	kilometres	Nil
	low voltage – underground	kilometres	Nil
2.3 <sup>c</sup>	<i>Number of poles</i>	number	603,140
2.4	<i>Network service area</i>	square kilometres	25,624
2.5 <sup>d</sup>	<i>Energy delivered</i>	GW.h	20,750
	CBD	GW.h	not available
	Urban	GW.h	not available
	Short rural	GW.h	not available
	Long rural	GW.h	not applicable
2.6	<i>Distribution losses</i>	percentage	6.50
2.7	<i>Transformers</i>		
	sub-transmission (ST/HV)		

Item No.	Measure	Descriptor	Value
	total number	number	489
	installed capacity	MVA	7,307
	distribution (HV/LV)		
	total number	number	41,069
	installed capacity	MVA	9,657
2.8 <sup>e</sup>	<i>Sub-transmission transformer utilisation factor</i>	percentage	32.41
2.81	<i>Zone substations maximum demand divided by nameplate rating*</i>	percentage	65.0
2.9	<i>Coincident maximum demand for the total network over the reporting period</i>	MVA	4,350

**Source: NFM**

\* This is the first time zone substations maximum demand divided by nameplate rating has been reported in the Annual Service Quality Report. Historical data is provided below:

Substation	Substation Utilisation Category	2002/03	2003/04	2004/05
Zone	Demand Utilisation – NPR	68.0%	77.0%	68.8%

### 3. Reliability measures<sup>f</sup>

Item No.	Measure
3.4	<i>System Average Interruption Duration Index (SAIDI) – worst performing feeders</i>
3.5	<i>System Average Interruption Frequency Index (SAIFI) – worst performing feeders</i>
3.6	<i>Customer Average Interruption Duration Index (CAIDI) – worst performing feeders</i>
<b>CBD<sup>g</sup></b>	
<p>Three feeder events occurred during 2005-06:</p> <ol style="list-style-type: none"> <li>1. AMPCST4 – SAIDI - 93.936 minutes, SAIFI – 1.000, CAIDI – 93.936 minutes, Customers affected 11. Supply interrupted due to underground equipment failure.</li> <li>2. MSTSCC1 – SAIDI – 116.000 minutes, SAIFI – 1.000, CAIDI – 116.000 minutes, Customers affected 4. Supply interrupted due to substation equipment failure.</li> <li>3. PRLSHD2 – SAIDI – 2.138 minutes, SAIFI – 0.022, CAIDI – 97.182 minutes, Customers affected 91. Supply interrupted due to emergency services. Requested power shut down due to gas leak.</li> </ol>	

**Source: NFM**

Item No.	Measure									
3.4	<i>System Average Interruption Duration Index (SAIDI) – worst performing feeders</i>									
<b>Urban</b>										
Feeder Number	Locale <sup>9</sup>	Customer Numbers	Feeder Length (km)	SAIDI Generation	SAIDI Transmission	Distribution Only Total Feeder SAIDI	SAIDI Exclusions <sup>h</sup>	Normalised Distribution Only Feeder SAIDI <sup>i</sup>	SAIDI Planned	SAIDI Unplanned
BSC3	Boondal	4	2.407	0.000	0.000	814.895	0.000	814.895	0.000	814.895
TWT2OLD	Tewantin	2320	1.740	0.000	0.000	691.842	0.000	691.842	1.608	690.234
BBH2B	Broadbeach	1273	2.065	0.000	0.000	593.363	0.000	593.363	2.161	591.202
WRG3	Woodridge	1896	9.572	0.000	0.000	829.786	297.309	532.478	6.861	525.617
WRG1	Woodridge	2103	9.172	0.000	0.000	690.850	178.217	512.633	0.904	511.728
SHW12	Fig Tree Pocket	1259	13.919	0.000	0.000	606.782	118.491	488.290	0.635	487.655
MDR8A	Molendinar	672	10.839	0.000	0.000	467.067	0.000	467.067	6.205	460.862
SPO51A	Southport	1633	6.591	0.000	0.000	465.713	0.000	465.713	2.804	462.909
WRG4	Woodridge	1223	6.538	0.000	0.000	456.658	0.000	456.658	1.832	454.826
BBH6A	Broadbeach	2007	5.847	0.000	0.000	429.620	0.000	429.620	26.105	403.515

Source: NFM

Item No.	Measure									
3.5	<i>System Average Interruption Frequency Index (SAIFI) – worst performing feeders</i>									
<b>Urban</b>										
Feeder Number	Locale <sup>9</sup>	Customer Numbers	Feeder Length (km)	SAIFI Generation	SAIFI Transmission	Distribution Only Total Feeder SAIFI	SAIFI Exclusions <sup>h</sup>	Normalised Distribution Only Feeder SAIFI <sup>i</sup>	SAIFI Planned	SAIFI Unplanned
BSC3	Boondal	4	2.407	0.000	0.000	5.000	0.000	5.000	0.000	5.000
TWT2OLD	Tewantin	2320	1.740	0.000	0.000	5.626	0.000	5.626	0.008	5.618
BBH2B	Broadbeach	1273	2.065	0.000	0.000	3.044	0.000	3.044	0.012	3.032
WRG3	Woodridge	1896	9.572	0.000	0.000	4.221	1.000	3.221	0.026	3.195
WRG1	Woodridge	2103	9.172	0.000	0.000	4.103	0.924	3.179	0.004	3.174
SHW12	Fig Tree Pocket	1259	13.919	0.000	0.000	10.011	2.458	7.553	0.002	7.551
MDR8A	Molendinar	672	10.839	0.000	0.000	3.999	0.000	3.999	0.059	3.940
SPO51A	Southport	1633	6.591	0.000	0.000	4.137	0.000	4.137	0.009	4.128
WRG4	Woodridge	1223	6.538	0.000	0.000	1.132	0.000	1.132	0.008	1.125
BBH6A	Broadbeach	2007	5.847	0.000	0.000	3.219	0.000	3.219	0.116	3.103

**Source: NFM**

Item No.	Measure									
3.6	<i>Customer Average Interruption Duration Index (CAIDI) – worst performing feeders</i>									
<b>Urban</b>										
Feeder Number	Locale <sup>g</sup>	Customer Numbers	Feeder Length (km)	CAIDI Generation	CAIDI Transmission	Distribution Only Total Feeder CAIDI	CAIDI Exclusions <sup>h</sup>	Normalised Distribution Only Feeder CAIDI <sup>i</sup>	CAIDI Planned	CAIDI Unplanned
BSC3	Boondal	4	2.407	0.000	0.000	162.979	0.000	162.979	0.000	162.979
TWT2OLD	Tewantin	2320	1.740	0.000	0.000	122.974	0.000	122.974	196.421	122.867
BBH2B	Broadbeach	1273	2.065	0.000	0.000	194.956	0.000	194.956	183.270	195.001
WRG3	Woodridge	1896	9.572	0.000	0.000	196.606	297.309	165.337	267.644	164.516
WRG1	Woodridge	2103	9.172	0.000	0.000	168.376	192.808	161.271	202.553	161.213
SHW12	Fig Tree Pocket	1259	13.919	0.000	0.000	60.614	48.209	64.651	317.000	64.584
MDR8A	Molendinar	672	10.839	0.000	0.000	116.800	0.000	116.800	105.607	116.967
SPO51A	Southport	1633	6.591	0.000	0.000	112.573	0.000	112.573	307.594	112.142
WRG4	Woodridge	1223	6.538	0.000	0.000	403.253	0.000	403.253	242.532	404.332
BBH6A	Broadbeach	2007	5.847	0.000	0.000	133.470	0.000	133.470	225.927	130.028

Source: NFM

Item No.	Measure									
3.4	<i>System Average Interruption Duration Index (SAIDI) – worst performing feeders</i>									
<b>Short Rural</b>										
Feeder Number	Locale <sup>g</sup>	Customer Numbers	Feeder Length (km)	SAIDI Generation	SAIDI Transmission	Distribution Only Total Feeder SAIDI	SAIDI Exclusions <sup>h</sup>	Normalised Distribution Only Feeder SAIDI <sup>i</sup>	SAIDI Planned	SAIDI Unplanned
MGP5	Mudgeeraba Package	1115	91.671	0.000	0.000	1757.590	74.722	1682.867	29.470	1653.398
SDM3	Somerset Dam	153	67.560	0.000	0.000	1373.959	140.105	1233.855	0.000	1233.855
NVL10	Noosaville	697	9.744	0.000	0.000	1266.015	65.363	1200.652	124.841	1075.811
KCY2	Kilcoy	221	108.951	0.000	0.000	1296.388	111.797	1184.591	6.560	1178.031
AMR2	Amamoor	698	112.847	0.000	0.000	2689.951	1541.570	1148.381	70.944	1077.437
BTN6	Bromelton	186	81.970	0.000	0.000	1257.067	202.697	1054.370	0.000	1054.370
GGR5	Glenore Grove	534	39.538	0.000	0.000	1023.311	0.000	1023.311	0.000	1023.311
GGR4	Glenore Grove	1892	104.984	0.000	0.000	941.619	3.346	938.273	8.620	929.653
MTB3B	Mount Tamborine	1125	96.300	0.000	0.000	2952.169	2014.071	938.097	0.000	938.097
AMR3	Amamoor	420	96.781	0.000	0.000	1476.374	558.000	918.374	0.191	918.183

**Source: NFM**

Item No.	Measure									
3.5	<i>System Average Interruption Frequency Index (SAIFI) – worst performing feeders</i>									
<b>Short Rural</b>										
Feeder Number	Locale <sup>g</sup>	Customer Numbers	Feeder Length (km)	SAIFI Generation	SAIFI Transmission	Distribution Only Total Feeder SAIFI	SAIFI Exclusions <sup>h</sup>	Normalised Distribution Only Feeder SAIFI <sup>i</sup>	SAIFI Planned	SAIFI Unplanned
MGP5	Mudgeeraba Package	1115	91.671	0.000	0.000	9.916	0.448	9.468	0.187	9.281
SDM3	Somerset Dam	153	67.560	0.000	0.000	7.269	0.761	6.508	0.000	6.508
NVL10	Noosaville	697	9.744	0.000	0.000	10.976	0.211	10.765	0.482	10.282
KCY2	Kilcoy	221	108.951	0.000	0.000	10.008	0.990	9.018	0.017	9.001
AMR2	Amamoor	698	112.847	0.000	0.000	13.636	4.000	9.636	0.256	9.379
BTN6	Bromelton	186	81.970	0.000	0.000	8.491	2.084	6.408	0.000	6.408
GGR5	Glenore Grove	534	39.538	0.000	0.000	4.365	0.000	4.365	0.000	4.365
GGR4	Glenore Grove	1892	104.984	0.000	0.000	7.104	0.021	7.083	0.039	7.044
MTB3B	Mount Tamborine	1125	96.300	0.000	0.000	9.610	3.563	6.047	0.000	6.047
AMR3	Amamoor	420	96.781	0.000	0.000	8.352	1.000	7.352	0.005	7.347

**Source: NFM**

Item No.	Measure									
3.6	<i>Customer Average Interruption Duration Index (CAIDI) – worst performing feeders</i>									
<b>Short Rural</b>										
Feeder Number	Locale <sup>g</sup>	Customer Numbers	Feeder Length (km)	CAIDI Generation	CAIDI Transmission	Distribution Only Total Feeder CAIDI	CAIDI Exclusions <sup>h</sup>	Normalised Distribution Only Feeder CAIDI <sup>i</sup>	CAIDI Planned	CAIDI Unplanned
MGP5	Mudgeeraba Package	1115	91.671	0.000	0.000	177.254	166.964	177.741	157.396	178.151
SDM3	Somerset Dam	153	67.560	0.000	0.000	189.016	184.000	189.603	0.000	189.603
NVL10	Noosaville	697	9.744	0.000	0.000	115.347	309.781	111.536	258.744	104.629
KCY2	Kilcoy	221	108.951	0.000	0.000	129.530	112.930	131.352	387.200	130.871
AMR2	Amamoor	698	112.847	0.000	0.000	197.275	385.393	119.182	276.878	114.874
BTN6	Bromelton	186	81.970	0.000	0.000	148.042	97.287	164.545	0.000	164.545
GGR5	Glenore Grove	534	39.538	0.000	0.000	234.423	0.000	234.423	0.000	234.423
GGR4	Glenore Grove	1892	104.984	0.000	0.000	132.544	156.561	132.471	221.695	131.979
MTB3B	Mount Tamborine	1125	96.300	0.000	0.000	307.203	565.265	155.140	0.000	155.140
AMR3	Amamoor	420	96.781	0.000	0.000	176.775	558.000	124.920	40.000	124.975

Source: NFM

Item No.	Measure	Descriptor	Value
3.7	<i>Energy not supplied – unplanned</i>	MWh	5,358.2
3.8	<i>Energy not supplied – planned</i>	MWh	346.1

Source: NFM

#### 4. Quality of supply data

Item No.	Measure	Descriptor	Value
<b>Quality of supply complaints – possible causes and response<sup>j</sup></b>			
4.2	<i>Network initiated quality of supply complaints</i>	number	1811
4.21 <sup>k</sup>	Faulty network equipment	number	171
4.22	Network interference – standard breached by ENERGEX	number	218
4.23	Network interference caused by another customer	number	57
4.24	Network limitation	number	702
4.25	Environment	number	8
4.26 <sup>l</sup>	Other	number	113
4.3	<i>Quality of supply complaints initiated on the customer side of the meter</i>	number	210
4.4	<i>Quality of supply complaints for which no cause was found</i>	number	391

Source: Ellipse

## **Notes to 2005-06 Service Quality Report**

- a “Subtransmission” lines mean lines rated at 22 kV or above; “High voltage” lines mean 11, 5.5, and 3.3 kV lines; and “Low voltage” lines mean 415/240 volt lines.
- b At the end of each financial year, ENERGEX reviews the categorisation of its 11kV network by reviewing: (a) the actual load on each 11kV feeder; and (b) the actual length of the 11kV feeder. The result from the re-classification exercise for this financial year was that a number of Short rural 11kV feeders were re-classified as Urban 11kV feeders.
- c Includes steel lattice towers and other non-wooded poles.
- d Represents estimate of total sales to customers. Includes 42 GWh supplied through our subtransmission network to South Western Power for distribution in their network, and generated energy of 175 GWh supplied by embedded generation. ENERGEX does not have the capacity to estimate the breakdown of energy delivered by feeder type to an adequate level of accuracy.
- e Required as Energy delivered (MWh) as a percentage of sub-transmission transformer capacity (MVA) multiplied by number of hours per year.
- f SAIDI, SAIFI and CAIDI are based on actual customer numbers.

Due to the intermeshed nature of the network in the area, the concept of Worse Performing Feeder does not apply to the CBD.

In the CBD, customers are typically served by more than one feeder. Accordingly, the chance of a customer’s supply being interrupted is extremely infrequent. An interruption will generally only occur when there is a second contingency problem. For example:

- the network is configured in an abnormal state for maintenance (non-meshed) during which time a fault occurs;
- the network is configured normally (meshed), but there is a maloperation in protection systems following a fault; or
- there is a problem in the wider system such as a fault on the 110 kV system or 110/11 kV substations.

SAIDI, SAIFI and CAIDI are calculated on the basis of a customer actually experiencing an interruption to supply. Because of the meshed 11 kV feeder arrangements in the CBD, there is no longer a clear link between an 11 kV feeder fault and an interruption to customer supply. This is in contrast to the remainder of the 11kV system, which is predominantly non-meshed. As a result, calculating these reliability indices at the feeder level, and subsequently, identifying the worst performing feeders on very rare events, is not meaningful.

Accordingly, ENERGEX has reported any HV feeder event that has resulted in a customer interruption. The CBD feeders identified should not be classified as 'worst performing' in the context adopted for the other network categories because of the two-fold nature of the event, being dependent upon wider failure before registering.

<sup>g</sup> The locale of the feeder is designated by the suburb in which the feeder originates.

<sup>h</sup> The following exclusion events occurred in the reporting period:

<u>DATE</u>	<u>INCIDENT</u>
15/11/2005	Strong Winds
27/11/2005	Severe Storms
17/09/2005	Strong Winds
8/12/2005	Severe Storms
17/12/2005	Severe Storms
6/01/2006	Severe Storms

<sup>i</sup> Normalised SAIDI, SAIFI and CAIDI data is calculated by deducting the exclusion related data from the total or raw SAIDI, SAIFI and CAIDI data.

<sup>j</sup> As the database is live, the number of quality of supply complaints reported do not correspond exactly with the total of the four quarterly quality of supply complaints due to removal of possible double entries and misclassified complaints. ENERGEX migrated quality of supply complaints to Ellipse during 2004-05, which is expected to reduce the incidence of misclassification and improve database controls.

<sup>k</sup> This figure does not include severe voltage dip complaints identified from retailer queries, on behalf of their large commercial customers.

<sup>l</sup> Includes complaints in the Voltrac system that are not classified.