



**ANNUAL SERVICE QUALITY REPORT  
JULY 2004 TO JUNE 2005**

**ENERGEN LIMITED**

**October 2005**

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

## **Annual service quality report**

### **Introduction**

ENERGEX recognises that electricity is an essential part of daily life, and is committed to delivering excellent service to its electricity customers.

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

In this annual report, ENERGETX 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, ENERGETX 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 ENERGETX's electricity distribution network**

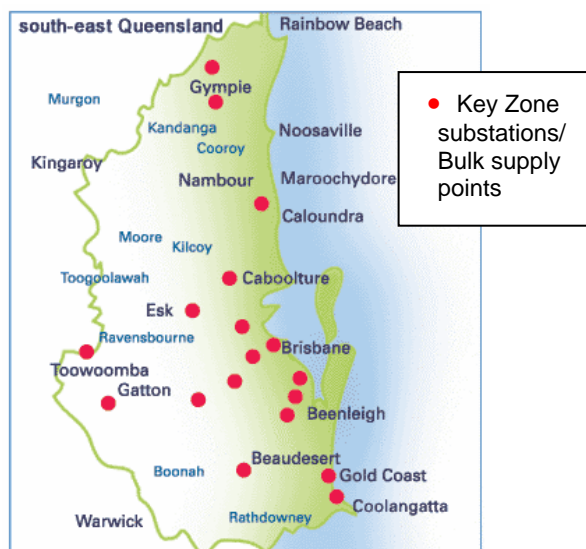
This report focuses on the performance of ENERGETX's electricity distribution network. The distribution network is the network of poles, wires, underground cables, and transformers that takes electricity from the high voltage wires operated by the electricity transmission company, and delivers them to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

ENERGETX provides distribution and retail electricity 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, ENERGETX supplies electricity to more than 1.13 million customers, including around 755,000 urban customers, and over 376,000 rural customers.

A series of severe thunderstorms affected much of south-east Queensland during January 2004. This resulted in a significant increase in storm-related outages for the month and contributed to the worst recorded monthly rise in the total duration of interruptions since collection of comparable outage data started in late 1997.

ENERGETX is very conscious of the impact of outages on customers, and is always striving to improve its reliability performance.



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

### *Measuring ENERGEX's performance*

This report provides information on ENERGEX's distribution network, including:

- the size and range 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 relative efficiency of ENERGEX's transformers, and maximum demand on the network. Maximum demand is an important measure of the capacity of the network to continue to deliver electricity when energy use is the highest;

- the performance of worst performing feeders in different sections of ENERGEX's network; and
- measures taken to address quality of supply (ie. voltage) problems reported by customers.

ENERGEX keenly 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 take electricity from substations to near customers' factories, shops, and houses. We classify and analyse the performance of the ten worst performing feeders in our urban and rural areas, looking at the breakdown of three important measures of reliability:

- the total duration of interruptions to supply during the year to these feeders (called System Average Interruption Duration Index or SAIDI in industry parlance);
- 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 ENERGETX's Performance

The highlights for the Annual Report 2004-05 are:

SAIDI, SAIFI and CAIDI performance for the whole distribution network to the end of the 2004-05 financial year was 162.403 minutes, 1.717 times, and 94.57 minutes, after removal of excluded events, which was consistent with the normalised performance reported in the 2003-04 financial year. By feeder category reliability performance was as follows:

- CBD – SAIDI 2.196 minutes (up from 0.627 minutes to the end of financial year 2003-04), SAIFI 0.024 times (up from 0.010 times), and CAIDI 91.394 minutes (up from 62.567 minutes);
- Urban – SAIDI 123.822 minutes (down from 128.590 minutes to the end of financial year 2003-04), SAIFI 1.336 times (down from 1.565 times), and CAIDI 92.705 minutes (up from 82.148 minutes); and
- Short rural – SAIDI 241.245 minutes (up from 217.128 minutes to the end of financial year 2003-04), SAIFI 2.498 times (up from 2.183 times), and CAIDI 96.575 minutes (down from 99.449 minutes).

At face value, the normalised reliability statistics for 2004-05 suggest that despite a mild summer season ENERGETX's reliability performance has remained largely consistent with the 2003-04 period (in the case of the CBD and short rural networks that performance actually fell). The convergence between the two financial years of normalised reliability statistics, despite quite different seasonal weather reflects:

- that the January 2004 summer storms were quite extraordinary weather events that created over 200 SAIDI minutes of exclusions (prior to the January 2004 storms the quarterly average for exclusions reported to the QCA was 17.48 SAIDI minutes);
- that once exclusions were deducted from ENERGETX's reliability statistics the normalised results were much lower than what they would otherwise have been, ie in a usual seasonal weather pattern;
- that in 2004-05 the unusual mild weather season resulted in there being 12.2 SAIDI minutes of exclusions (below the historic average), which resulted in the 2004-05 normalised reliability statistics being largely comparable with 2003-04; and
- highlights the effectiveness of normalising reliability statistics to remove the impact of such extraordinary events.

Another reason explaining the comparability of the 2003-04 and 2004-05 normalised reliability statistics was the system improvement which resulted in actual customer counting rather than the previous approach of estimating customer numbers using a business rule. While the changeover improved the accuracy and reasonableness of customer numbers it did result in there being an increase in SAIDI reliability numbers.

However, despite these issues ENERGETX's reliability performance to the end of financial year 2004-05 is below (better than) the minimum service standards (MSS) set by the Queensland Government in the Electricity Industry Code. For instance:

- urban SAIDI of 123.822 minutes is better than the Electricity Industry Code minimum service standard of 162 minutes for 2004-05;

- urban SAIFI of 1.336 times is better than the Electricity Industry Code of 1.78 times for 2004-05;
- short rural SAIDI of 241.245 minutes is better than the Electricity Industry Code minimum service standard of 272 minutes for 2004-05;
- short rural SAIFI of 2.498 times is better than the Electricity Industry Code of 2.84 times for 2004-05;
- CBD SAIDI of 2.196 minutes is better than the Electricity Industry Code minimum service standard of 20 minutes for 2004-05; and
- CBD SAIFI of 0.024 times is better than the Electricity Industry Code of 0.33 times for 2004-05.

Other notable highlights in the 2004-05 Annual Report include:

- network initiated customer complaints regarding the quality of supply totalled 1,212 compared to 1,479 in the previous financial year. The majority of quality of supply customer complaints related to network limitations (656 complaints), with the second most common type of complaint related to faulty network equipment (196);
- the total amount of energy delivered was 19,620GWh, which represents a 4 per cent increase compared to the previous financial year;
- the amount of distribution losses experienced by the network was 5.8 per cent for the financial year, which is slightly higher than the 2003-04 result of 5.6 per cent;
- the amount of unplanned energy not supplied fell by 60 per cent from 13,955MWh to 5,542MWh;

- the overhead sub-transmission network increased 31 km from 3,130 km to 3,161 km, while the underground sub-transmission network increased by 177 km from 769 km to 946 km;
- an additional 9 sub-transmission transformers were installed in 2004-05 taking the total number of sub-transmission transformers to 470 with an installed MVA of 6,554, while an additional 1,240 distribution transformers were installed taking the total number of distribution transformers to 39,572 with an installed MVA of 8,876;
- the physical characteristics of the CBD network (high density) were largely the same as in the 2003-04 financial year;
- the physical characteristics of the urban and short rural networks changed as a result of:
  - the growth on the network; and
  - an annual review of 11kV feeder types; and
- the number of poles in ENERGETX's service area of 25,624 km<sup>2</sup> rose by 8,131 to 595,928 from 587,797.

## 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	01-07-2004
1.3	<i>Last day of reporting period</i>	date	30-06-2005

## 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	3,161
	sub-transmission – underground	kilometres	945.2
	CBD		
	high voltage – overhead	kilometres	0
	high voltage – underground	kilometres	95.4
	low voltage – overhead	kilometres	1.6
	low voltage – underground	kilometres	26.3
	Urban		
	high voltage – overhead <sup>b</sup>	kilometres	4,093.0
	high voltage – underground	kilometres	2,599.4
	low voltage – overhead	kilometres	7,096.0

Item No.	Measure	Descriptor	Value
	low voltage – underground	kilometres	5,389.6
	Short rural		
	high voltage – overhead <sup>b</sup>	kilometres	13,251.1
	high voltage – underground	kilometres	706.7
	low voltage – overhead	kilometres	7,745.3
	low voltage – underground	kilometres	2,179.5
	Long rural		
	high voltage – overhead	kilometres	not applicable
	high voltage – underground	kilometres	not applicable
	low voltage – overhead	kilometres	not applicable
	low voltage – underground	kilometres	not applicable
2.3 <sup>c</sup>	<i>Number of poles</i>	number	595,928
2.4	<i>Network service area</i>	square kilometres	25,624
2.5 <sup>d</sup>	<i>Energy delivered</i>	GW.h	19,620
	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	5.79
2.7	<i>Transformers</i>		
	sub-transmission (ST/HV)		

Item No.	Measure	Descriptor	Value
	total number	number	470
	installed capacity	MVA	6,554
	distribution (HV/LV)		
	total number	number	39,572
	installed capacity	MVA	8,876
2.8 <sup>e</sup>	<i>Sub-transmission transformer utilisation factor</i>	percentage	34.15
2.9	<i>Coincident maximum demand for the total network over the reporting period</i>	MVA	4,205

Source: NFM

### 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>	
Two feeder events occurred during 2004-05:	
<ol style="list-style-type: none"> <li>LAWTKS5 – SAIDI – 88.000 minutes, SAIFI – 1.0, CAIDI – 88.000 minutes, customers affected 68 – supply to feeder was interrupted whilst switching was in progress to isolate fault on urban feeder MEX3.</li> <li>CRTSEQ4 – SAIDI – 78.044 minutes, SAIFI – 0.929, CAIDI – 84.000 minutes, customers affected 17 – substation equipment failure at SSCHA caused interruption to feeder CRTSEQ4.</li> </ol>	

Source: NFM

Item No.	Measure									
3.4	<i>System Average Interruption Duration Index (SAIDI) – worst performing feeders</i>									
<b>Urban</b>										
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
BHD21B	Burleigh Heads	1,544	15.3	0.0	0.0	874.798	153.301	721.497	2.428	872.371
HTN7A	Hamilton Lands	1,255	2.1	0.0	123.060	819.370	0.0	819.370	0.0	819.370
HMP4	Southport	974	0.0	0.0	0.0	658.545	0.0	658.545	0.0	658.545
BLH14A	Beenleigh	2,133	11.5	0.0	70.222	650.893	0.0	650.893	2.883	648.010
WMD6A	West Maroochydore	2,799	20.4	0.0	0.0	626.497	370.426	256.071	0.449	626.048
KRA10	Kirra	1,690	7.6	0.0	2.048	564.421	0.0	564.421	3.825	560.596
FIS8B	Fishermans Island	2	3.3	0.0	0.0	544.641	0.0	544.641	0.0	544.641
CCY6A	Hope Island	1,152	12.0	0.0	0.0	544.394	0.0	544.394	0.474	543.920
LTA3	Lota	1,353	8.1	0.0	0.0	526.759	483.520	43.238	21.611	505.148
LTA4	Lota	2,223	11.1	0.0	0.0	521.645	505.112	16.533	8.200	513.445

Source: NFM

Item No.	Measure									
3.5	<i>System Average Interruption Frequency Index (SAIFI) – worst performing feeders</i>									
<b>Urban</b>										
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
BHD21B	Burleigh Heads	1,544	15.3	0.0	0.0	3.276	1.039	2.237	0.015	3.260
HTN7A	Hamilton Lands	1,255	2.1	0.0	1.578	6.642	0.0	6.642	0.0	6.642
HMP4	Southport	974	0.0	0.0	0.0	3.141	0.0	3.141	0.0	3.141
BLH14A	Beenleigh	2,133	11.5	0.0	0.900	1.985	0.0	1.985	0.009	1.977
WMD6A	West Maroochydore	2,799	20.4	0.0	0.0	5.341	1.064	4.276	0.001	5.340
KRA10	Kirra	1,690	7.6	0.0	1.024	4.102	0.0	4.102	0.013	4.090
FIS8B	Fishermans Island	2	3.3	0.0	0.0	2.000	0.0	2.000	0.0	2.000
CCY6A	Hope Island	1,152	12.0	0.0	0.0	4.907	0.0	4.907	0.004	4.902
LTA3	Lota	1,353	8.1	0.0	0.0	1.497	1.191	0.306	0.061	1.436
LTA4	Lota	2,223	11.1	0.0	0.0	1.286	1.006	0.280	0.027	1.256

Source: NFM

Item No.	Measure									
3.6	<i>Customer Average Interruption Duration Index (CAIDI) – worst performing feeders</i>									
<b>Urban</b>										
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
BHD21B	Burleigh Heads	1,544	15.3	0.0	0.0	267.060	147.581	322.544	159.127	267.565
HTN7A	Hamilton Lands	1,255	2.1	0.0	78.000	123.361	0.0	123.361	0.0	123.361
HMP4	Southport	974	0.0	0.0	0.0	209.639	0.0	209.639	0.0	209.639
BLH14A	Beenleigh	2,133	11.5	0.0	78.000	327.850	0.0	327.850	334.645	327.821
WMD6A	West Maroochydore	2,799	20.4	0.0	0.0	117.303	348.000	59.880	419.000	117.243
KRA10	Kirra	1,690	7.6	0.0	2.000	137.582	0.0	137.582	300.000	137.076
FIS8B	Fishermans Island	2	3.3	0.0	0.0	272.320	0.0	272.320	0.0	272.320
CCY6A	Hope Island	1,152	12.0	0.0	0.0	110.946	0.0	110.946	109.428	110.948
LTA3	Lota	1,353	8.1	0.0	0.0	351.876	406.018	141.261	351.723	351.890
LTA4	Lota	2,223	11.1	0.0	0.0	405.668	502.000	59.111	303.750	407.854

**Source: NFM**

Item No.	Measure									
3.4	<i>System Average Interruption Duration Index (SAIDI) – worst performing feeders</i>									
<b>Short Rural</b>										
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
KWH3	Kenilworth	458	95.5	0.0	0.0	1,547.456	405.000	1,142.456	22.307	1,525.149
MGL6A	Moggill	1,220	16.1	0.0	0.0	1,521.831	0.0	1,521.831	0.0	1,521.831
ABL4	Amberley	368	46.9	0.0	0.0	1,227.639	846.054	381.585	0.0	1,227.639
KWH2	Kenilworth	663	0.0	0.0	0.0	1,192.074	182.353	1,009.721	84.656	1,107.418
VPT3A	Victoria Point	1,295	27.3	0.0	0.0	1,174.664	182.221	992.442	1.567	1,173.096
FDS4	Flinders	241	81.6	0.0	0.0	1,170.896	282.500	888.396	0.0	1,170.896
MBG2	Marburg	520	43.2	0.0	0.0	1,084.896	98.134	986.762	0.0	1,084.896
CPD1	Capalaba	289	71.9	0.0	0.0	1,004.489	178.461	826.029	0.0	1,004.489
MGP5	Mudgeeraba	1,151	90.3	0.0	0.0	982.062	147.568	834.494	0.759	981.303
THL2	Tenthill	161	107.0	0.0	0.0	980.833	323.908	656.925	0.0	980.833

**Source: NFM**

Item No.	Measure									
3.5	<i>System Average Interruption Frequency Index (SAIFI) – worst performing feeders</i>									
<b>Short Rural</b>										
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
KWH3	Kenilworth	458	95.5	0.0	0.0	10.723	2.311	8.411	0.126	10.597
MGL6A	Moggill	1,220	16.1	0.0	0.0	8.118	0.0	8.118	0.0	8.118
ABL4	Amberley	368	46.9	0.0	0.0	10.000	2.588	7.412	0.0	10.000
KWH2	Kenilworth	663	0.0	0.0	0.0	9.336	1.010	8.327	0.262	9.074
VPT3A	Victoria Point	1,295	27.3	0.0	0.0	4.090	1.044	3.046	0.007	4.082
FDS4	Flinders	241	81.6	0.0	0.0	10.366	2.160	8.206	0.0	10.366
MBG2	Marburg	520	43.2	0.0	0.0	4.183	1.023	3.160	0.0	4.183
CPD1	Capalaba	289	71.9	0.0	0.0	6.241	1.320	4.921	0.0	6.241
MGP5	Mudgeeraba	1,151	90.3	0.0	0.0	9.444	2.621	6.823	0.003	9.441
THL2	Tenthill	161	107.0	0.0	0.0	8.806	2.359	6.447	0.0	8.806

**Source: NFM**

Item No.	Measure									
3.6	<i>Customer Average Interruption Duration Index (CAIDI) – worst performing feeders</i>									
<b>Short Rural</b>										
Number	Locale <sup>9</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
KWH3	Kenilworth	458	95.5	0.0	0.0	144.314	175.212	135.823	177.211	143.923
MGL6A	Moggill	1,220	16.1	0.0	0.0	187.460	0.0	187.460	0.0	187.460
ABL4	Amberley	368	46.9	0.0	0.0	122.764	326.946	51.480	0.0	122.764
KWH2	Kenilworth	663	0.0	0.0	0.0	127.680	180.579	121.265	323.115	122.042
VPT3A	Victoria Point	1,295	27.3	0.0	0.0	287.233	174.605	325.822	218.917	287.353
FDS4	Flinders	241	81.6	0.0	0.0	112.951	130.762	108.262	0.0	112.951
MBG2	Marburg	520	43.2	0.0	0.0	259.360	95.886	312.313	0.0	259.360
CPD1	Capalaba	289	71.9	0.0	0.0	160.952	135.168	167.870	0.0	160.952
MGP5	Mudgeeraba	1,151	90.3	0.0	0.0	103.987	56.293	122.312	233.000	103.942
THL2	Tenthill	161	107.0	0.0	0.0	111.379	137.311	101.891	0.0	111.379

Source: NFM

Item No.	Measure	Descriptor	Value
3.7	<i>Energy not supplied – unplanned</i>	MWh	5,542.4
3.8	<i>Energy not supplied – planned</i>	MWh	150.1

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	1,134
4.21 <sup>k</sup>	Faulty network equipment	number	190
4.22	Network interference – standard breached by ENERGEX	number	178
4.23	Network interference caused by another customer	number	65
4.24	Network limitation	number	603
4.25	Environment	number	12
4.26 <sup>l</sup>	Other	number	86
4.3	<i>Quality of supply complaints initiated on the customer side of the meter</i>	number	294
4.4	<i>Quality of supply complaints for which no cause was found</i>	number	206

Source: Voltrac and voltage-related reports to Retail

## Notes to 2004-05 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 41 GWh supplied through our subtransmission network to South Western Power for distribution in their network, and sales of 200 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 Calculated on energy purchases, including embedded generation.
- 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:

<i>DATE</i>	<i>INCIDENT</i>
13 December 2004	Storm event

<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.