



**ANNUAL SERVICE QUALITY REPORT
JULY 2002 TO JUNE 2003**

ENERGEN LIMITED

October 2003

For media enquiries, please contact ENERGEN Public Affairs 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 ENERGETEX's service to the customers of its electricity distribution network.

In this annual report, ENERGETEX 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, ENERGETEX 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 ENERGETEX's electricity distribution network

This report focuses on the performance of ENERGETEX'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.

ENERGETEX 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, ENERGETEX supplies electricity to more than 1.1 million customers, including around 750,000 urban customers, and over 350,000 rural customers.

A series of severe thunderstorms affected much of south east Queensland during December 2002. 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. Storm emergency procedures were activated on 1, 4, 10-11, and 24-26 December, 2002.



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 overhead 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 (CAIDI).

Another important measure of ENERGEX's performance is its ability to supply 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.

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	01-07-2002
1.3	<i>Last day of reporting period</i>	date	30-06-2003

2. Aggregate Data

Item No.	Measure	Descriptor	Value
2.2 ^a	<i>Length of distribution lines</i>		
	Sub-transmission lines		
	sub-transmission – overhead	kilometres	3,025.3
	sub-transmission – underground	kilometres	613.8
	CBD		
	high voltage – overhead	kilometres	0.4
	high voltage – underground	kilometres	104.5
	low voltage – overhead	kilometres	2.7
	low voltage – underground	kilometres	29.8
	Urban		
	high voltage – overhead	kilometres	4,158.2

Item No.	Measure	Descriptor	Value
	high voltage – underground	kilometres	2,194.3
	low voltage – overhead	kilometres	7,028.9
	low voltage – underground	kilometres	4,499.0
	Short rural		
	high voltage – overhead	kilometres	12,755.3
	high voltage – underground	kilometres	616.3
	low voltage – overhead	kilometres	7,761.6
	low voltage – underground	kilometres	1,960.8
	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 ^b	<i>Number of poles</i>	number	577,555
2.4	<i>Network service area</i>	square kilometres	25,264
2.5 ^c	<i>Energy delivered</i>	GW.h	17,900
	CBD	GW.h	not available
	Urban	GW.h	not available
	Short rural	GW.h	not available
	Long rural	GW.h	not applicable

Item No.	Measure	Descriptor	Value
2.6	<i>Distribution losses</i>	percentage	5.7
2.7	<i>Transformers</i>		
	sub-transmission (ST/HV)		
	total number	number	396
	installed capacity	MVA	5,529
	distribution (HV/LV)		
	total number	number	37,666
	installed capacity	MVA	7,931
2.8 ^d	<i>Sub-transmission transformer utilisation factor</i>	percentage	39.2
2.9	<i>Coincident maximum demand for the total network over the reporting period</i>	MVA	3,556

Source: NFM

3. Reliability measures^e

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>
CBD^f	
<p>Two feeder events occurred during 2002-03:</p> <ol style="list-style-type: none"> 1. Substation staff inadvertently disturbed feeder protection circuits causing a loss of supply to feeder AFT2 and subsequent loss of supply to 149 Ann Street. 2. Emergency interruption at request of emergency services due to gas leak in Mary Street. Interruption to feeders PRLSHD2 and SHDT1. 	

Source: NFM

Item No.	Measure								
3.4	<i>System Average Interruption Duration Index (SAIDI) – worst performing feeders</i>								
Urban									
Number	Locale	Customer Numbers	Feeder Length (km)	Feeder SAIDI	SAIDI Exclusions ⁹	SAIDI Generation	SAIDI Transmission	SAIDI Planned	SAIDI Unplanned
CMY2	Coominya	1	0.5	1,411.707	0.000	0.000	0.000	0.000	1,411.707
GYM6	Gympie	1,333	63.2	1,374.698	883.059	0.000	38.000	8.087	1,366.611
PRG2A	Postman's Ridge	1,310	105.5	1,239.485	11.924	0.000	0.000	0.000	1,239.485
NMC5A	North Maclean	102	53.7	1,184.753	499.564	0.000	0.000	0.000	1,184.753
YTA25A	Yatala	550	37.7	1,152.217	0.000	0.000	0.000	0.000	1,152.217
NMC3A	North Maclean	54	25.2	947.844	0.000	0.000	0.000	0.000	947.844
BMG1A	Boomerang Street	1,228	6.0	914.273	0.000	0.000	0.000	0.000	914.273
PRG2B	Postman's Ridge	144	31.2	884.967	0.000	0.000	0.000	0.000	884.967
BHD7B	Burleigh Heads	3,505	18.4	853.740	0.000	0.000	244.144	0.000	853.740
CLD8	Caloundra	291	4.1	753.931	0.000	0.000	40.000	0.000	753.931

Source: NFM

Item No.	Measure								
3.5	<i>System Average Interruption Frequency Index (SAIFI) – worst performing feeders</i>								
Urban									
Number	Locale	Customer Numbers	Feeder Length (km)	Feeder SAIFI	SAIFI Exclusions ^g	SAIFI Generation	SAIFI Transmission	SAIFI Planned	SAIFI Unplanned
CMY2	Coominya	1	0.5	9.000	0.000	0.000	0.000	0.000	9.000
GYM6	Gympie	1,333	63.2	4.026	1.000	0.000	1.000	0.026	4.000
PRG2A	Postman's Ridge	1,310	105.5	9.767	0.045	0.000	0.000	0.000	9.767
NMC5A	North Maclean	102	53.7	7.000	1.000	0.000	0.000	0.000	7.000
YTA25A	Yatala	550	37.7	4.000	0.000	0.000	0.000	0.000	4.000
NMC3A	North Maclean	54	25.2	3.000	0.000	0.000	0.000	0.000	3.000
BMG1A	Boomerang Street	1,228	6.0	11.000	0.000	0.000	0.000	0.000	11.000
PRG2B	Postman's Ridge	144	31.2	7.000	0.000	0.000	0.000	0.000	7.000
BHD7B	Burleigh Heads	3,505	18.4	6.505	0.000	0.000	1.550	0.000	6.505
CLD8	Caloundra	291	4.1	4.000	0.000	0.000	1.000	0.000	4.000

Source: NFM

Item No.	Measure								
3.6	<i>Customer Average Interruption Duration Index (CAIDI) – worst performing feeders</i>								
Urban									
Number	Locale	Customer Numbers	Feeder Length (km)	Feeder CAIDI	CAIDI Exclusions ⁹	CAIDI Generation	CAIDI Transmission	CAIDI Planned	CAIDI Unplanned
CMY2	Coominya	1	0.5	156.856	0.000	0.000	0.000	0.000	156.856
GYM6	Gympie	1,333	63.2	341.479	883.059	0.000	38.000	314.517	341.653
PRG2A	Postman's Ridge	1,310	105.5	126.911	263.000	0.000	0.000	0.000	126.911
NMC5A	North Maclean	102	53.7	169.250	499.564	0.000	0.000	0.000	169.250
YTA25A	Yatala	550	37.7	288.054	0.000	0.000	0.000	0.000	288.054
NMC3A	North Maclean	54	25.2	315.948	0.000	0.000	0.000	0.000	315.948
BMG1A	Boomerang Street	1,228	6.0	83.116	0.000	0.000	0.000	0.000	83.116
PRG2B	Postman's Ridge	144	31.2	126.424	0.000	0.000	0.000	0.000	126.424
BHD7B	Burleigh Heads	3,505	18.4	131.237	0.000	0.000	157.539	0.000	131.237
CLD8	Caloundra	291	4.1	188.483	0.000	0.000	40.000	0.000	188.483

Source: NFM

Item No.	Measure								
3.4	<i>System Average Interruption Duration Index (SAIDI) – worst performing feeders</i>								
Short Rural									
Number	Locale	Customer Numbers	Feeder Length (km)	Feeder SAIDI	SAIDI Exclusions ⁹	SAIDI Generation	SAIDI Transmission	SAIDI Planned	SAIDI Unplanned
GYM9B	Gympie	902	178.339	1,920.148	812.198	0.000	38.000	0.000	1,920.148
MSV2	Mt Sylvia	105	39.395	1,882.811	255.935	0.000	0.000	0.000	1,882.811
CMY1	Coominya	901	147.764	1,752.572	0.000	0.000	0.000	0.000	1,752.572
MGP4	Mudgeeraba	558	19.834	1,237.293	465.334	0.000	88.940	0.000	1,237.293
WHO2	Wivenhoe	78	51.146	1,200.434	0.000	0.000	0.000	0.000	1,200.434
GYM2A	Gympie	1,319	128.852	1,164.410	986.469	0.000	33.376	0.000	1,164.410
TRP3	Tarampa	476	61.191	1,162.920	0.000	0.000	0.000	0.000	1,162.920
BWH3	Beerwah	1,322	66.16	1,103.462	0.000	0.000	0.000	21.916	1,081.546
ABL4	Amberley	752	50.239	1,069.064	312.291	0.000	0.000	0.000	1,069.064
WFD2	Woodford	228	20.165	899.890	0.000	0.000	0.000	21.973	877.917

Source: NFM

Item No.	Measure								
3.5	<i>System Average Interruption Frequency Index (SAIFI) – worst performing feeders</i>								
Short Rural									
Number	Locale	Customer Numbers	Feeder Length (km)	Feeder SAIFI	SAIFI Exclusions ⁹	SAIFI Generation	SAIFI Transmission	SAIFI Planned	SAIFI Unplanned
GYM9B	Gympie	902	178.339	11.889	0.639	0.000	1.000	0.000	11.889
MSV2	Mt Sylvania	105	39.395	6.000	2.000	0.000	0.000	0.000	6.000
CMY1	Coominya	901	147.764	11.858	0.000	0.000	0.000	0.000	11.858
MGP4	Mudgeeraba	558	19.834	8.698	0.963	0.000	1.910	0.000	8.698
WHO2	Wivenhoe	78	51.146	5.000	0.000	0.000	0.000	0.000	5.000
GYM2A	Gympie	1,319	128.852	3.216	0.753	0.000	0.878	0.000	3.216
TRP3	Tarampa	476	61.191	8.000	0.000	0.000	0.000	0.000	8.000
BWH3	Beerwah	1,322	66.16	9.790	0.000	0.000	0.000	0.062	9.728
ABL4	Amberley	752	50.239	4.000	1.000	0.000	0.000	0.000	4.000
WFD2	Woodford	228	20.165	9.101	0.000	0.000	0.000	0.101	9.000

Source: NFM

Item No.	Measure								
3.6	<i>Customer Average Interruption Duration Index (CAIDI) – worst performing feeders</i>								
Short Rural									
Number	Locale	Customer Numbers	Feeder Length (km)	Feeder CAIDI	CAIDI Exclusions ⁹	CAIDI Generation	CAIDI Transmission	CAIDI Planned	CAIDI Unplanned
GYM9B	Gympie	902	178.339	161.512	1,271.000	0.000	38.000	0.000	161.512
MSV2	Mt Sylvania	105	39.395	313.802	127.968	0.000	0.000	0.000	313.802
CMY1	Coominya	901	147.764	147.794	0.000	0.000	0.000	0.000	147.794
MGP4	Mudgeeraba	558	19.834	152.479	483.000	0.000	46.572	0.000	142.254
WHO2	Wivenhoe	78	51.146	240.087	0.000	0.000	0.000	0.000	240.087
GYM2A	Gympie	1,319	128.852	362.025	1,309.791	0.000	38.000	0.000	362.025
TRP3	Tarampa	476	61.191	145.365	0.000	0.000	0.000	0.000	145.365
BWH3	Beerwah	1,322	66.16	112.717	0.000	0.000	0.000	355.738	111.178
ABL4	Amberley	752	50.239	267.266	312.291	0.000	0.000	0.000	267.266
WFD2	Woodford	228	20.165	98.879	0.000	0.000	0.000	217.638	97.546

Source: NFM

Item No.	Measure	Descriptor	Value
3.7	<i>Energy not supplied – unplanned</i>	MWh	7,854.032
3.8	<i>Energy not supplied – planned</i>	MWh	141.424

Source: NFM

Quality of supply data

Item No.	Measure	Descriptor	Value
Quality of supply complaints – possible causes and response^h			
4.2	<i>Network initiated quality of supply complaints</i>	number	1692
4.21 ⁱ	Faulty network equipment	number	369
4.22	Network interference – standard breached by ENERGEX	number	269
4.23	Network interference caused by another customer	number	215
4.24	Network limitation	number	722
4.25	Environment	number	50
4.26 ^j	Other	number	67
4.3	<i>Quality of supply complaints initiated on the customer side of the meter</i>	number	264
4.4	<i>Quality of supply complaints for which no cause was found</i>	number	712

Source: Voltrac and voltage-related reports to Retail

Notes to 2002-03 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 Includes steel lattice towers and other non-wooded poles.
- ^c Represents estimate of total sales to customers. Includes 75 GWh supplied through our subtransmission network to Ergon for distribution in their network, and sales of 110 GWh supplied by embedded generation. ENERGETX does not have the capacity to estimate the breakdown of energy delivered by feeder type with an adequate level of accuracy.
- ^d Calculated on energy purchases, including embedded generation.
- ^e SAIDI, SAIFI and CAIDI are based on estimated customer numbers. More accurate reliability measures will be provided on completion of a multi-stage project to determine actual customer numbers affected by interruptions. This project is scheduled for completion during 2003-04.
- ^f 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.

^g The following exclusion events occurred in the reporting period:

<i>Date</i>	<i>Incident</i>
10-11 December 2002	Severe Storm

^h 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 will migrate quality of supply complaints to Ellipse during 2003-04 to reduce the incidence of misclassification and improve database controls.

ⁱ This figure includes 42 severe voltage dip complaints identified from retail queries, on behalf of their large commercial customers.

^j Includes complaints in the Voltrac system that are not classified.