



**ANNUAL SERVICE QUALITY REPORT
JULY 2003 TO JUNE 2004**

ENERGEN LIMITED

October 2004

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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 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

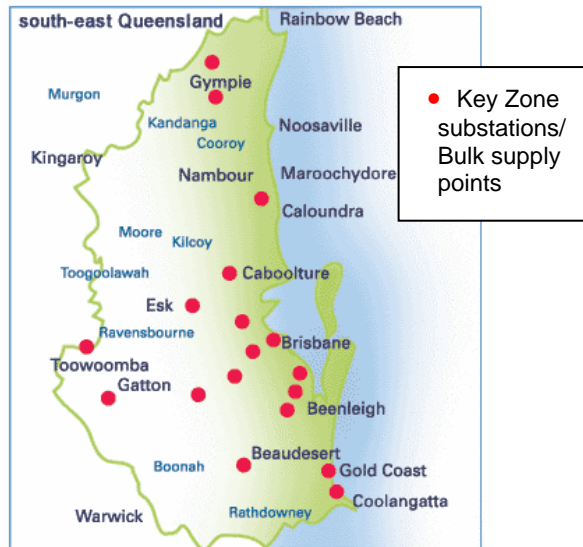
This report focuses on the performance of ENERGEX's electricity distribution network. The distribution network is the network of poles, wires, underground cables, and transformers that takes electricity from the high voltage wires operated by the electricity transmission company, and delivers them to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

ENERGEX provides 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, ENERGEX supplies electricity to more than 1.19 million customers, including around 750,000 urban customers, and over 430,000 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.

ENERGEX 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 2003-04 are:

- SAIDI, SAIFI and CAIDI performance for the distribution network to the end of the 2003-04 financial year was 160.5 minutes, 1.787 times, and 89.9 minutes, after removal of excluded events, which was a slight improvement compared to the 2002-03 financial year;
- network initiated customer complaints regarding the quality of supply totalled 1,479 compared to 1,692 in the previous period. The majority of quality of supply customer complaints related to network limitations (683 complaints), with the second most common type of complaint related to faulty network equipment (308);
- the total amount of energy delivered was 18,933GWh, which represents a 6 per cent increase compared to the previous period;
- the amount of distribution losses experienced by the network was 5.6 per cent for the period, which is consistent with the 2002-03 result of 5.7 per cent;
- the amount of unplanned energy not supplied increased by 78 per cent from 7,854MWh to 13,955MWh. The substantial increase reflects the impact of the extraordinary weather events experienced in the March quarter 2004;
- the overhead sub-transmission network increased 105 km from 3,025 km to 3,130 km, while the underground sub-transmission network increased by 155 km from 614 km to 769 km;
- an additional 65 sub-transmission transformers were installed in 2003-04 taking the total number of sub-transmission transformers to 461 with an installed MVA of 5,905, while an additional 666 distribution transformers were installed taking the total number of distribution transformers to 38,332 with an installed MVA of 8,227;
- the physical characteristics of the CBD network (high density) were largely the same as in the 2002-03 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, which resulted in approximately 450 km of short rural 11kV feeders being re-categorised as urban 11kV feeders, while approximately 1,150 km of urban 11kV feeders were re-categorised as short rural 11kV feeders; and
- the number of poles in ENERGETX's service area of 25,264 km rose by 10,242 to 587,797 from 577,555.

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	01-07-2003
1.3	<i>Last day of reporting period</i>	date	30-06-2004

2. Aggregate Data

Item No.	Measure	Descriptor	Value
2.2 ^a	<i>Length of distribution lines</i>		
	Sub-transmission lines		
	sub-transmission – overhead	kilometres	3,130.2
	sub-transmission – underground	kilometres	768.6
	CBD		
	high voltage – overhead	kilometres	0.4
	high voltage – underground	kilometres	112.1
	low voltage – overhead	kilometres	3.0
	low voltage – underground	kilometres	29.7
	Urban		
	high voltage – overhead ^b	kilometres	3,753.1
	high voltage – underground	kilometres	2,138.9
	low voltage – overhead	kilometres	6,460.0

Item No.	Measure	Descriptor	Value
	low voltage – underground	kilometres	3,942.0
	Short rural		
	high voltage – overhead ^b	kilometres	13,336.0
	high voltage – underground	kilometres	882.4
	low voltage – overhead	kilometres	8,306.4
	low voltage – underground	kilometres	2,574.3
	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 ^c	<i>Number of poles</i>	number	587,797
2.4	<i>Network service area</i>	square kilometres	25,624
2.5 ^d	<i>Energy delivered</i>	GW.h	18,933
	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	5.6
2.7	<i>Transformers</i>		
	sub-transmission (ST/HV)		

Item No.	Measure	Descriptor	Value
	total number	number	461
	installed capacity	MVA	5,905
	distribution (HV/LV)		
	total number	number	38,332
	installed capacity	MVA	8,227
2.8 ^e	<i>Sub-transmission transformer utilisation factor</i>	percentage	37.05
2.9	<i>Coincident maximum demand for the total network over the reporting period</i>	MVA	4,037

Source: NFM

3. Reliability measures^f

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^g	
<p>A single feeder event occurred during 2003-04:</p> <p>1. Substation staff inadvertently disturbed feeder protection circuits causing a loss of supply to feeder CSQQAC1 during testing being carried out at SSQAC. The SAIDI impact was 8 minutes, SAIFI of 1, CAIDI of 8, and affected 3 customers.</p>	

Source: NFM

Item No.	Measure									
3.4	<i>System Average Interruption Duration Index (SAIDI) – worst performing feeders</i>									
Urban										
Number	Locale ^h	Customer Numbers	Feeder Length (km)	SAIDI Generation	SAIDI Transmission	Distribution Only Total Feeder SAIDI	SAIDI Exclusions ⁱ	Normalised Distribution Only Feeder SAIDI ^j	SAIDI Planned	SAIDI Unplanned
SHW12	Sherwood	1,097	13.35	0.0	0.0	2,959.91	1,938.18	1,021.74	0.0	2,959.91
BHD7B	Burleigh Heads	2,384	15.79	0.0	0.0	2,022.71	2,022.71	0.0	0.0	2,022.71
GLY1	Grovely	1,943	16.60	0.0	0.0	2,347.09	1,995.79	351.30	0.0	2,347.09
TWG16	Toowong	1,173	12.67	0.0	0.0	2,178.03	1,878.87	299.16	0.0	2,178.03
TWG13	Toowong	1,687	7.17	0.0	0.0	2,088.94	2,088.94	0.0	0.0	2,088.94
BBS11	Belmont	1,634	19.93	0.0	20.40	2,040.86	2,040.86	0.0	0.0	2,040.86
MTG25	Mt Gravatt	1,746	11.41	0.0	14.99	2,020.55	1,936.51	84.04	0.0	2,020.55
IDY1	Indooroopilly	2,522	13.22	0.0	0.0	1,985.13	1,710.76	274.37	0.0	1,985.13
RBY4	Raby Bay	2,189	30.34	0.0	14.97	1,946.04	1,659.14	286.90	0.0	1,946.04
IDY9	Indooroopilly	1,841	6.73	0.0	0.0	1,860.09	1,612.25	247.84	0.0	1,860.09

Source: NFM

Item No.	Measure									
3.5	<i>System Average Interruption Frequency Index (SAIFI) – worst performing feeders</i>									
Urban										
Number	Locale ^h	Customer Numbers	Feeder Length (km)	SAIFI Generation	SAIFI Transmission	Distribution Only Total Feeder SAIFI	SAIFI Exclusions ⁱ	Normalised Distribution Only Feeder SAIFI ^j	SAIFI Planned	SAIFI Unplanned
SHW12	Sherwood	1,097	13.35	0.0	0.0	9.00	2.00	7.00	0.0	9.00
BHD7B	Burleigh Heads	2,384	15.79	0.0	0.0	1.00	1.00	0.0	0.0	1.00
GLY1	Grovely	1,943	16.60	0.0	0.0	4.00	2.00	2.00	0.0	4.00
TWG16	Toowong	1,173	12.67	0.0	0.0	4.01	1.76	2.25	0.0	4.01
TWG13	Toowong	1,687	7.17	0.0	0.0	1.56	1.56	0.0	0.0	1.56
BBS11	Belmont	1,634	19.93	0.0	1.77	2.64	2.64	0.0	0.0	2.64
MTG25	Mt Gravatt	1,746	11.41	0.0	0.99	5.24	5.00	0.24	0.0	5.24
IDY1	Indooroopilly	2,522	13.22	0.0	0.0	4.18	2.00	2.18	0.0	4.18
RBY4	Raby Bay	2,189	30.34	0.0	0.99	4.03	0.99	3.03	0.0	4.03
IDY9	Indooroopilly	1,841	6.73	0.0	0.0	5.00	1.00	4.00	0.0	5.00

Source: NFM

Item No.	Measure									
3.6	<i>Customer Average Interruption Duration Index (CAIDI) – worst performing feeders</i>									
Urban										
Number	Locale ^h	Customer Numbers	Feeder Length (km)	CAIDI Generation	CAIDI Transmission	Distribution Only Total Feeder CAIDI	CAIDI Exclusions ⁱ	Normalised Distribution Only Feeder CAIDI ^j	CAIDI Planned	CAIDI Unplanned
SHW12	Sherwood	1,097	13.35	0.0	0.0	328.88	969.09	145.96	0.0	328.88
BHD7B	Burleigh Heads	2,384	15.79	0.0	0.0	2,022.71	2,022.71	0.0	0.0	2,022.71
GLY1	Grovely	1,943	16.60	0.0	0.0	586.77	997.90	175.65	0.0	586.77
TWG16	Toowong	1,173	12.67	0.0	0.0	544.06	1,068.87	133.23	0.0	544.06
TWG13	Toowong	1,687	7.17	0.0	0.0	1,339.50	1,339.50	0.0	0.0	1,339.50
BBS11	Belmont	1,634	19.93	0.0	11.52	772.19	772.19	0.0	0.0	772.19
MTG25	Mt Gravatt	1,746	11.41	0.0	15.00	385.89	387.30	355.80	0.0	385.88
IDY1	Indooroopilly	2,522	13.22	0.0	0.0	474.85	855.38	125.83	0.0	474.85
RBY4	Raby Bay	2,189	30.34	0.0	15.00	482.90	1,663.00	94.62	0.0	482.90
IDY9	Indooroopilly	1,841	6.73	0.0	0.0	372.02	1,612.25	61.96	0.0	372.02

Source: NFM

Item No.	Measure									
3.4	<i>System Average Interruption Duration Index (SAIDI) – worst performing feeders</i>									
Short Rural										
Number	Locale ^h	Customer Numbers	Feeder Length (km)	SAIDI Generation	SAIDI Transmission	Distribution Only Total Feeder SAIDI	SAIDI Exclusions ⁱ	Normalised Distribution Only Feeder SAIDI ^j	SAIDI Planned	SAIDI Unplanned
SMF5A	Samford	777	36.00	0.0	0.0	2,893.09	2,070.10	822.99	0.0	2,893.09
WFD1	Woodford	808	116.17	0.0	8.96	2,671.46	1,311.19	1,360.27	7.06	2,664.40
KWH3	Kenilworth	650	101.10	0.0	0.0	2,556.20	1,294.87	1,261.33	11.82	2,544.38
KMR10	Kenmore	1,389	50.08	0.0	0.0	2,529.82	1,944.16	585.66	0.0	2,529.82
BHL2A	Bald Hills	1,128	15.28	0.0	0.0	2,322.32	2,092.93	229.39	0.0	2,322.32
BTA5A	Bethania	885	37.44	0.0	0.0	2,299.68	2,184.84	114.84	0.0	2,299.68
SMF6A	Samford	622	45.75	0.0	0.0	2,279.19	903.46	1,375.73	0.0	2,279.19
SIS1	Stradbroke Is	1,380	44.11	0.0	0.0	2,192.23	996.74	1,195.49	0.0	2,192.23
MGP5	Mudgeeraba	1,072	91.94	0.0	0.0	2,189.30	850.80	1,338.50	0.0	2,189.30
ACR7	Albany Creek	2,875	56.51	0.0	0.0	2,177.45	802.91	1,374.54	0.0	2,177.45

Source: NFM

Item No.	Measure									
3.5	<i>System Average Interruption Frequency Index (SAIFI) – worst performing feeders</i>									
Short Rural										
Number	Locale ^h	Customer Numbers	Feeder Length (km)	SAIFI Generation	SAIFI Transmission	Distribution Only Total Feeder SAIFI	SAIFI Exclusions ⁱ	Normalised Distribution Only Feeder SAIFI ^j	SAIFI Planned	SAIFI Unplanned
SMF5A	Samford	777	36.00	0.0	0.0	3.65	1.37	2.28	0.0	3.65
WFD1	Woodford	808	116.17	0.0	1.00	13.57	2.90	10.67	0.04	13.53
KWH3	Kenilworth	650	101.10	0.0	0.0	11.89	2.88	9.00	0.05	11.83
KMR10	Kenmore	1,389	50.08	0.0	0.0	11.68	5.25	6.43	0.0	11.68
BHL2A	Bald Hills	1,128	15.28	0.0	0.0	5.98	2.99	2.99	0.0	5.98
BTA5A	Bethania	885	37.44	0.0	0.0	5.00	3.00	2.00	0.0	5.00
SMF6A	Samford	622	45.75	0.0	0.0	5.57	1.11	4.46	0.0	5.57
SIS1	Stradbroke Is	1,380	44.11	0.0	0.0	7.99	1.00	6.99	0.0	7.99
MGP5	Mudgeeraba	1,072	91.94	0.0	0.0	8.36	0.58	7.78	0.0	8.36
ACR7	Albany Creek	2,875	56.51	0.0	0.0	8.51	4.00	4.51	0.0	8.51

Source: NFM

Item No.	Measure									
3.6	<i>Customer Average Interruption Duration Index (CAIDI) – worst performing feeders</i>									
Short Rural										
Number	Locale ^h	Customer Numbers	Feeder Length (km)	CAIDI Generation	CAIDI Transmission	Distribution Only Total Feeder CAIDI	CAIDI Exclusions ⁱ	Normalised Distribution Only Feeder CAIDI ^j	CAIDI Planned	CAIDI Unplanned
SMF5A	Samford	777	36.00	0.0	0.0	792.77	1,512.97	360.79	0.0	792.77
WFD1	Woodford	808	116.17	0.0	9.00	196.86	451.46	127.54	193.41	196.87
KWH3	Kenilworth	650	101.10	0.0	0.0	215.05	449.11	140.09	222.77	215.01
KMR10	Kenmore	1,389	50.08	0.0	0.0	216.69	370.63	91.09	0.0	216.69
BHL2A	Bald Hills	1,128	15.28	0.0	0.0	388.27	699.84	76.70	0.0	388.27
BTA5A	Bethania	885	37.44	0.0	0.0	459.94	728.28	57.42	0.0	459.94
SMF6A	Samford	622	45.75	0.0	0.0	409.34	811.55	308.83	0.0	409.34
SIS1	Stradbroke Is	1,380	44.11	0.0	0.0	274.10	997.00	170.83	0.0	274.10
MGP5	Mudgeeraba	1,072	91.94	0.0	0.0	261.84	1,461.37	172.06	0.0	261.84
ACR7	Albany Creek	2,875	56.51	0.0	0.0	255.76	200.73	304.54	0.0	255.76

Source: NFM

Item No.	Measure	Descriptor	Value
3.7	<i>Energy not supplied – unplanned</i>	MWh	13,955
3.8	<i>Energy not supplied – planned</i>	MWh	33

Source: NFM

Quality of supply data

Item No.	Measure	Descriptor	Value
Quality of supply complaints – possible causes and response^k			
4.2	<i>Network initiated quality of supply complaints</i>	number	1,479
4.21 ^l	Faulty network equipment	number	308
4.22	Network interference – standard breached by ENERGEX	number	177
4.23	Network interference caused by another customer	number	203
4.24	Network limitation	number	683
4.25	Environment	number	34
4.26 ^m	Other	number	74
4.3	<i>Quality of supply complaints initiated on the customer side of the meter</i>	number	243
4.4	<i>Quality of supply complaints for which no cause was found</i>	number	572

Source: Voltrac and voltage-related reports to Retail

Notes to 2003-04 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 Urban 11kV feeders were re-classified as Short Rural 11kV feeders.
- ^c Includes steel lattice towers and other non-wooded poles.
- ^d Represents estimate of total sales to customers. Includes 60 GWh supplied through our subtransmission network to South Western Power for distribution in their network, and sales of 165 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 estimated customer numbers. As reported previously more accurate reliability measures will be provided on completion of a multi-stage project to determine actual customer numbers affected by interruptions. This project has been completed and ENERGEX will report service reliability performance under the new method for the September quarter 2004.
- ^g 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.

^h The locale of the feeder is designated by the suburb in which the feeder originates.

ⁱ The following exclusion events occurred in the reporting period:

<i>DATE</i>	<i>INCIDENT</i>
25 January 2004	Storm
28 January 2004	Storm
29 January 2004	Storm
30 January 2004	Storm
22 February 2004	Storm
5 March 2004	Storm

^j Normalised SAIDI, SAIFI and CAIDI data is calculated by deducting the exclusion related data from the total or raw SAIDI, SAIFI and CAIDI data.

^k 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 2003-04, which is expected to reduce the incidence of misclassification and improve database controls. ENERGEX’s September quarter 2004 service quality report to the QCA will use service quality complaint data from Ellipse.

^l This figure includes 23 severe voltage dip complaints identified from retailer queries, on behalf of their large commercial customers.

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