



**Financial and Service Quality
Performance 2007-08**

Energex

March 2009

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1. INTRODUCTION AND SUMMARY

In its 2005 Final Determination on the Regulation of Electricity Distribution, the Authority required the Queensland Distribution Network Service Providers (DNSPs) to provide information relating to their financial and service quality performance annually.

This report provides an assessment of the financial performance of Energex for 2007-08, including a comparison with the financial forecasts that were included in the Authority's 2005 Determination and comparisons with past financial performance.

The financial information for 2007-08 was submitted by Energex in accordance with the Authority's Cost Allocation Guidelines. In December 2007, the Authority revised the regulatory reporting guidelines in order to identify excluded services separately from network services. Energex's financial report for 2007-08 was prepared to reflect the separate contribution of network and excluded services.

The service quality information was submitted in accordance with the Authority's Electricity Distribution Service Quality Reporting Guidelines, which require DNSPs to provide data on specific service quality measures on a quarterly and annual basis. The DNSPs reporting commenced in 2001. A revision of the Guidelines was made in August 2005 in order to improve the reporting of service quality performance. In some instances, this will mean that data provided since 1 July 2005 cannot be reliably compared to past data.

The report draws on data from the regulatory statements and both the annual and quarterly service quality reports, primarily for 2007-08, along with data obtained from the three preceding financial years.

1.1 General Operating Background

There are currently two DNSPs operating in Queensland: Energex and Ergon Energy. Both DNSPs are owned by the Queensland Government and previously had significant retailing operations. Energex's retailing operations and a portion of Ergon Energy's retailing operations were sold by the Government in 2006-07, with Ergon Energy retaining only certain franchise customers.

Network Characteristics: comparison between Energex and Ergon Energy

The distribution entities have considerably different network characteristics. Energex operates a largely urban network with relatively high customer density in southeast Queensland, whereas Ergon Energy operates a geographically dispersed network with low customer density that covers much of the remainder of the state.

Table 1 identifies the key characteristics of each network and illustrates the differences between the two networks. A key difference is customer density. Specifically, while there are 24.8 customers per kilometre of line in Energex's network, Ergon Energy has just 5.2 customers per kilometre of line in its network.

These differences in network characteristics are important determinants of the service quality performance of each distribution entity, particularly the reliability of their respective networks. It is also to be expected that the distribution entities' performances will vary significantly on a number of other service quality measures.

Table 1: Energex network characteristics: 2007-08

<i>Characteristics</i>	<i>Energex</i>	<i>Ergon Energy</i>
Network service area (sq km)	25,064	1,698,100
Number of customers ^a	1,270,734	766,453
Energy delivered (GWh)	20,879	13,813
Energy delivered per customer (MWh)	16.4	18.0
Kilometres of line	51,349	146,339
Customers per km of line	24.8	5.2
Maximum demand of network (MVA)	4,284	2,387
Number of distribution transformers	43,420	85,034
Asset utilisation (%) ^b	27.5	21.0
Distribution losses (%)	5.74	6.50

^a These values are reported in the distributors' 2007-08 Regulatory Reporting Statements and differ slightly to the values reported for the same measures in the distributors' 2007-08 Service Quality Reports due to technical differences in the way these measures are defined.

^b Sub-transmission transformer utilisation factor. Electricity throughput (MWh) is, expressed as a percentage of sub-transformer capacity (MVA) multiplied by the number of hours per year.

1.2 Energex Customer Profile

Energex's customer base consists of:

- Individually calculated customers (ICCs) – those customers whose electricity consumption is sufficiently large to warrant individually calculated prices;
- Connection asset customers (CACs) - those customers whose electricity consumption is sufficient to warrant individually calculated connection charges, but their remaining charges are averaged;
- Standard asset customers (SACs) – those customers who pay averaged prices. The SACs includes (small) customers with an average consumption of up to 100MWh per year and (large) customers with consumption between 100 and 4,000MWh;
- Embedded Generators (EGs) - those generators who have a name plate rating greater than 10kW single phase or 30kW three phase; and
- Public streetlights.

The number of customers in each category and the corresponding units of electricity sold to each in 2007-08 are presented in **Table 2**.

Table 2: Energex customer numbers and units sold: 2007-08

<i>Customer type</i>	<i>Customers</i>		<i>Units sold</i>		<i>Units sold per customer</i>	
	<i>Number</i>	<i>Percentage change from previous year</i>	<i>MWh</i>	<i>Percentage change from previous year</i>	<i>MWh/customer</i>	<i>Percentage change from previous year</i>
Individually calculated customers	28	3.7	1,592,660	(0.6)	56,880.7	(4.1)
Connection asset customers	410	11.1	3,758,305	5.4	9,166.6	(5.1)
Standard asset customers (consuming 100-4,000MWh pa)	5,636	6.0	3,864,641	2.3	685.7	(3.5)
Standard asset customers (consuming <100MWh pa)	1,264,593	1.8	11,498,952	(4.1)	9.1	(6.2)
Public street lighting	52	(70.0)	139,000	4.1	2,673.1	248.2
Embedded generators	15	50.0	25,130	(2.5)	1,675.3	(35.0)
Total	1,270,734	1.8	20,878,688	(1.0)	16.4	(3.0)

Overall, Energex experienced a 1.8% growth in customer numbers during 2007-08, which was lower than the forecast growth rate of 2.5%. The growth in 2007-08 was mainly driven by the increase in the number of small customers consuming less than 100MWh per annum.

Energy sales declined by 1.0% in real terms in 2007-08, which is substantially lower than the 1.6% growth rate recorded last year. This compares with the forecast growth in energy sales of 4.4% in the 2005 Final Determination. The lower than forecast growth reflects a reduction in energy consumption associated with a relatively mild summer season in 2007-08.

As the growth in customer numbers exceeded the growth in energy sales across most customer types, there was a decline of 3% to 16.4MWh in energy sales per customer.

1.3 Summary of Energex's Financial Performance

In its 2005 Final Determination, the Authority estimated the level of revenue, operating costs and capital expenditure required to deliver prescribed distribution services for each year of the regulatory period (July 2005 - June 2010). However, actual annual revenue, operating and capital expenditure are likely to vary from those estimates in response to a range of external circumstances and operational requirements not foreseen at the time estimates are made.

Table 3 presents a summary of the estimated and actual revenues earned in 2007-08 along with Energex's operating, maintenance and capital expenditures incurred in delivering prescribed distribution services for 2007-08. Actual revenue earned and costs incurred in 2006-07 are presented to provide performance comparisons between the two years.

Table 3: Energex financial performance: 2007-08 (\$ nominal)

<i>Revenue and expenditure</i>	<i>Actual</i>	<i>Actual</i>	<i>Forecast</i>	<i>Variance from forecast</i>	
	<i>2006-07</i>	<i>2007-08</i>	<i>2007-08</i>	<i>2007-08</i>	
	<i>(\$ mill)</i>	<i>(\$ mill)</i>	<i>(\$ mill)</i>	<i>(\$ mill)</i>	<i>(%)</i>
Revenue					
Revenue from services	715.1	754.3	777.8	(23.5)	(3.0)
Capital contributions	47.2	49.3	42.6	6.7	15.7
Less Income tax paid	6.6	6.7	12.7	(6.0)	(47.2)
Total Revenue	755.7	796.9	807.7	(10.8)	(1.3)
Operating and maintenance expenditure	274.5	283.3	288.8	(5.5)	(1.9)
Capital expenditure	718.9	683.0	799.4	(116.4)	(14.6)

Energex's total revenue for 2007-08 of \$796.9 million was \$10.8 million (or 1.3%) lower than its forecast revenue. This was due to the net effect of an under-recovery of \$23.5 million from the provision of services; an over-recovery of \$6.7 million from capital contributions, offset by under-payment of \$6.0 million in income tax compared to forecast in the 2005 Determination.

Operating and maintenance expenditure of \$283.3 million in 2007-08 was \$5.5 million (1.9%) lower than forecast. However, the forecasts made at the time of the 2005 Final Determination included \$16.2 million in operating costs attributed to non-DUOS services. Non-DUOS services were subsequently reclassified as excluded distribution services and hence the actual result for 2007-08 does not include operating costs associated with these excluded distribution services [on which actual expenditure amounted to \$24 million]. On a like with like basis, that is, including the operating costs associated with excluded distribution services in 2007-08, Energex's actual operating costs would increase to \$307.3 million. Hence, the difference between forecast and actual would be an over-expenditure of \$18.5 million (or 6.4%).

On this basis (adding back excluded services operating costs), the increase of \$18.5 million in operating costs is attributable to:

- Additional operating costs of approximately \$25.5 million associated with the implementation of full retail competition (FRC) in 2007-08;
- Overspending of approximately \$7.3 million on vegetation management to ensure network reliability and \$7.8 million on non-DUOS services (later reclassified as excluded distribution services); and
- An underspending on inspections and planned maintenance of approximately \$21.8 million which Energex submits was due to milder storm season and the improvement in managing vegetation.

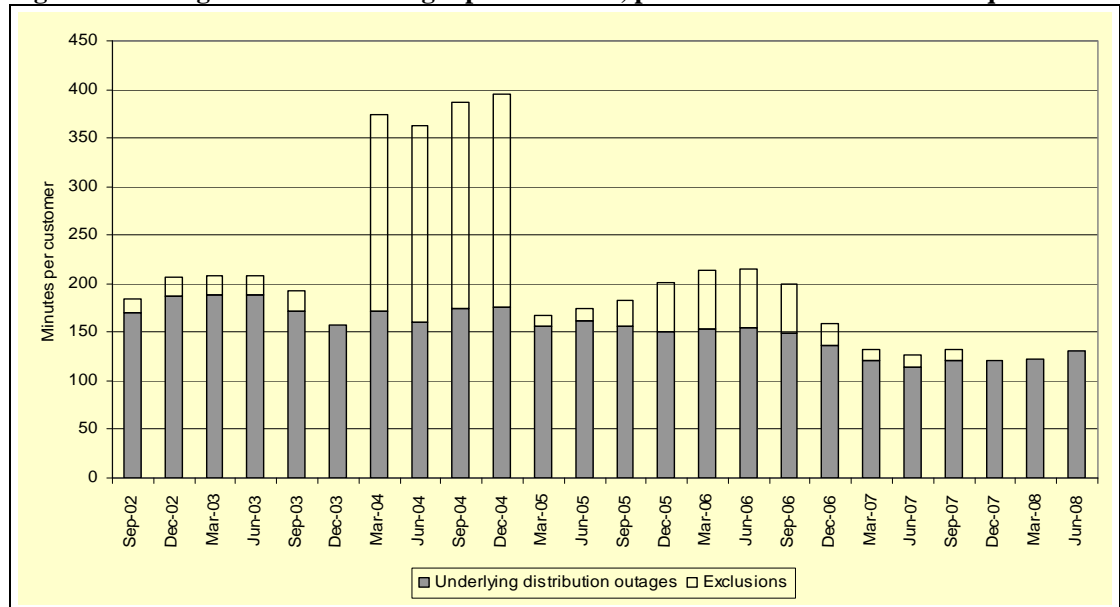
Capital expenditure was \$116.4 million (14.6%) lower than originally forecast due to lower:

- Corporate initiated demand-related capital expenditure (12.4% lower than forecast);
- Reliability/quality improvement capital expenditure (51.1% lower than forecast); and
- Expenditure associated with non-system assets (17.2% lower than forecast).

1.4 Summary of Energex's Service Quality Performance

Energex customers experienced, on average, 1.54 distribution-related interruptions in 2007-08, leaving them without power for an average duration of 130.8 minutes. As shown in **Figure 4**, the duration of outages over the course of the year was relatively constant, although there was a slight deterioration towards the last quarter of the year. Energex attributed the deterioration to an increase in the number of storm occurrences and events associated with equipment failures in the rural network, which caused lengthy restoration times. No exclusion events¹ were reported in the 12 months ending 30 June 2008. The spike in exclusions in 2004 was the result of severe storms that affected Energex's network in January 2004.

Figure 1: Average duration of outages per customer, previous 12 months to end of quarter



Source: Energex Quarterly Service Quality Reports and QCA's Analysis.

The total number of quality of supply complaints received by Energex decreased from 1,504 complaints in 2006-07 to 1,054 complaints in 2007-08, reflecting an improvement in Energex's quality of supply. The majority of the complaints in 2007-08 were related to minor voltage dips (which can cause flickering lights and the resetting of digital clocks), low supply voltage, (which can cause light dimming and motor starting problems) and voltage swell (which has no clear initiating event and is likely to cause minor equipment damages and blowing out of lights).

The average time taken to investigate and resolve a technical quality of supply complaint improved by three days, from an average of 27 days in the June quarter 2007 to approximately 24 days in the June quarter 2008.

Energex's performance against a range of customer service measures were mixed during 2007-08:

- The average length of time customers had to wait to speak to an operator when phoning the call centre varied during 2007-08, was the worst performance on record (35 seconds) reported for the June quarter 2008;

¹ Exclusions are defined under the Queensland Competition Authority's Electricity Distribution Service Quality Guidelines as events which are beyond the control of DNSPs. It is based on the 2.5 beta method, which is an internationally accepted standard for excluding outages from reliability data.

- The percentage of calls abandoned increased from 3.0% in the June quarter 2007 to 5.0% in the June quarter 2008. However, the result still represents a significant improvement from the peak of 17% of calls that were abandoned in the September quarter 2002;
- The proportion of customer appointments that Energex failed to attend within 15 minutes of the agreed time generally improved during 2007-08, recording a drop of 2.4 percentage points from the June quarter 2007 to the June quarter 2008;
- The proportion of new connections that Energex failed to make by the agreed date deteriorated significantly during the 2007-08, recording a very steep rise from 3.3% in the September quarter 2007 to 35.6% in the June quarter 2008. This is the worst result for this measure since September quarter 2002. The significant deterioration was due to a range of structural and mechanical issues encountered by Energex during the June quarter 2008; and
- The proportion of re-connections of supply that were not made on the agreed date was low and varied between 0.1 to 0.4% during 2007-08.

2. FINANCIAL PERFORMANCE

This section summarises the financial performance of the revenue cap regulated business segment of Energex. The information is for the year ended 30 June 2008. The data used in the analysis has been drawn mainly from Energex's audited Regulatory Reporting Statements. These accounts were submitted in accordance with the Authority's *Electricity Distribution: Regulatory Reporting Guidelines*.

Areas of particular interest concerning Energex's overall financial performance are revenue, operating and maintenance expenditure, and capital expenditure. Energex's reported results on these components compared with the corresponding forecasts that were included in the 2005 Final Determination and the previous year's actual data are presented in the following sections below. Detailed financial data for Energex is provided at **Appendix A**.

In the Authority's 2005 Final Determination, the revenue cap calculations included both DUOS services and some non-DUOS services. Non-DUOS services include prescribed distribution services, such as temporary builders' services, that are related to the operation and use of the distribution system.

However, in December 2007, the Authority released its Final Decision on the *Electricity Distribution: Review of Excluded Distribution Services*. This decision removed all non-DUOS services from the regulatory cap and left only DUOS services. This reclassification was intended to remove the influence of the less predictable revenue earned from excluded distribution services (EDS) from the regulated revenue cap and to leave only the more consistent and predictable revenue earned from DUOS services. In order to take account of this decision, for 2007-08, \$16.2 million of EDS was excluded from Energex's 2007-08 regulated revenue cap.

2.1 Revenue

Under/Over-Recovery of Distribution Revenue

In the 2005 Final Determination, the Authority set a maximum revenue cap for each of the five years of the regulatory period for Energex. The maximum revenue cap allows Energex to earn a return on assets, and an allowance for depreciation and operating and maintenance expenditure incurred in the delivery of prescribed distribution services.

The 2005 Final Determination also provided for any differences between forecast and actual revenues earned to be subject to an "unders-and-overs" process on an annual basis. This process compares actual revenue earned in the year against the annual revenue cap for that year as determined by the Authority and allows under-recoveries to be collected through higher customer prices the following year and any over-recoveries to be returned to the customers the following year (see **Table 4**).

Table 4: Energex's AARR: 2007-08

<i>Actual and forecast income</i>	<i>\$ million (nominal)</i>
<u>Actual AARR</u>	
Revenue from services	754.3
Revenue from capital contributions	49.3
Income tax paid	(6.7)
Total	796.9
<u>Forecast AARR</u>	
Revenue from services	777.8
Revenue from capital contributions	42.6
Income tax paid	(12.7)
Total	807.7
Under-recovery of AARR in 2007-08, (a) – (b)	(10.8)

Table 4 reports that Energex under-recovered its 2007-08 AARR by \$10.8 million. This figure comprises:

- An under-recovery of \$23.5 million from the provision of services, which was attributed to lower energy consumption during 2007-08 resulting from milder summer weather;
- An over-recovery of \$6.7 million from capital contributions as a result of higher than forecast building activity for new residential estates; and
- These increases were offset by \$6.0 million lower than forecast income tax paid.

Under/Over-Recovery of Transmission Use of System (TUOS) Charges

TUOS charges are calculated by the distributors each year to pass-through to distribution customers, the cost levied for the use of the transmission system. These costs primarily reflect Powerlink charges and payments to embedded generators. Electricity transmission charges are regulated by the Australian Energy Regulator (AER) and paid to Powerlink by distributors on behalf of customers.

The connection of an embedded generator to a distribution network reduces the amount of energy drawn from the transmission network. This in turn reduces the TUOS charge that the distributor has to pay the transmission network owner. However, the distributor passes through the full amount of these avoided TUOS payments to the embedded generator whose connection led to the reduction in TUOS payable.

The Authority approves TUOS charges, to be levied by the distributors that allow them to recover the TUOS charges they have paid to Powerlink and avoided TUOS payments to embedded generators. Any difference between TUOS revenue recovered by distributors from customers and the charges they pay to Powerlink and embedded generators is recouped from, or returned to, customers through future charges.

Table 5 indicates that TUOS charges to customers were less than TUOS payments to Powerlink and embedded generators by \$11.0 million during 2007-08. The under-recovery in TUOS was associated with a reduction in actual sales volume during the year. Energex will be allowed to recover this revenue shortfall from customers as part of its 2009-10 TUOS charges.

Table 5: Energex’s TUOS Unders and Overs Account: 2007-08

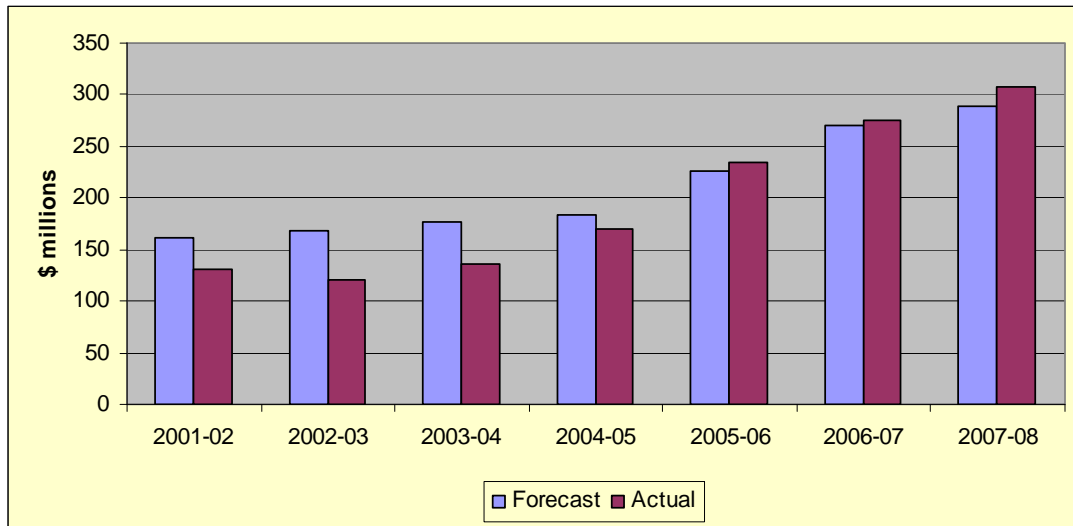
	<i>\$ million (nominal)</i>
TUOS charged by Powerlink	230.2
<i>plus</i> TUOS charged by Embedded Generators	0.4
<i>equals</i> Total TUOS charged	230.6
<i>less</i> actual TUOS revenue earned during 2007-08	219.6
<i>equals</i> Under-recovery for 2007-08	11.0

2.2 Operating and Maintenance Expenditure

The regulatory framework is designed to give the distribution businesses an incentive to increase their forecast return by improving operating efficiency. To this end, the distributors retain the benefit of any efficiency gain for the remainder of the regulatory period.

Figure 2 shows network operating and maintenance expenditure reported by Energex from 2001-02 to 2007-08, compared with that forecast at the time of the 2001 and 2005 Final Determinations.

Figure 2: Energex operating and maintenance expenditure: 2001-02 to 2007-08



Note: To allow for a like with like comparison, both forecast and actual data for 2007-08 include expenditure relating to non-DUOS services (later reclassified and Excluded Distribution Services).

In 2007-08, operating and maintenance expenditure of \$283.3 million was \$5.5 million (1.9%) lower than forecast. However, the forecasts made at the time of the 2005 Final Determination

included \$16.2 million in operating costs attributed to non-DUOS services. Non-DUOS services were subsequently reclassified as excluded distribution services and hence the actual result for 2007-08 does not include operating costs associated with these excluded distribution services [on which actual expenditure amounted to \$24 million]. On a like with like basis, including the operating costs associated with excluded services in 2007-08, Energex's actual operating costs would increase to \$307.3 million and, on that basis, the difference between forecast and actual would be an over-expenditure of \$18.5 million (or 6.4%).

On this basis (adding back excluded services operating costs), the increase of \$18.5 million in operating is attributable to:

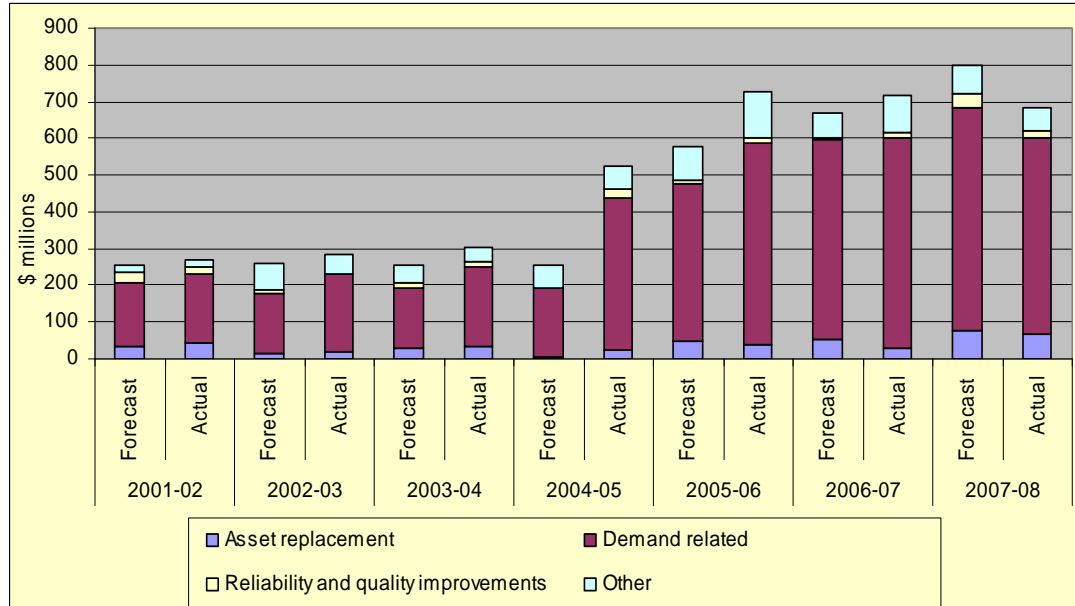
- Additional operating costs of approximately \$25.5 million associated with the implementation of full retail competition (FRC) in 2007-08; and
- Overspending of approximately \$7.3 million on vegetation management to ensure network reliability and \$7.8 million on non-DUOS (later reclassified as EDS) services; and
- An underspending on inspections and planned maintenance of approximately \$21.8 million, which Energex stated was due to a milder storm season and the improvement in managing vegetation.

This is the third year in a row that Energex's operating and maintenance expenditure has exceeded its forecast. Energex contend that this is reflective of its response to the Queensland Government's Electricity Distribution Service Delivery (EDSD) Review. The EDSD Review highlighted the extent of over-utilisation of the Energex network due to past under-investment and the need to reduce utilisation to more sustainable levels.

2.3 Capital Expenditure

Figure 3 shows network capital expenditure in aggregate and by purpose reported by Energex for 2001-02 to 2007-08, compared with the forecast capital expenditure included in the 2001 and 2005 Final Determinations.

Figure 3: Energex capital expenditure: 2001-02 to 2007-08



Note: "other" includes expenditure on non-system assets.

Energex’s capital expenditure declined from \$718.9 million in 2006-07 to \$683.0 million in 2007-08 (a 5% decrease). This is \$116.4 million (14.6%) lower than originally forecast.

Energex attributed the lower than forecast capital expenditure in 2007-08 to project delays due to hold-ups in obtaining approvals from external bodies, extended lead times and resource constraints. In addition, difficulties in buying land also resulted in delays in this category of capital expenditure.

Reliability/quality improvement expenditure was 51.1% lower than forecast. Energex attributed the lower than forecast expenditure to project delays as a result of delays in obtaining equipment sourced from overseas and industrial action, which affected its spending on reliability/quality improvement.

Other and non-system assets expenditure was 20.4% lower than forecast. This primarily reflects the transfer of the Project JET IT system to SPARQ Solutions.

Energex submits that this underspending on capital was, to a certain extent, countered by overspending on customer-initiated demand. This spending resulted from upgrading supply to existing customers, supplying new customers and additional spending on infrastructure projects which were not included in the 2005 Determination.

However, the overall trend in capital expenditure in the last four years has been significantly higher than previous years. This primarily reflects Energex’s response to the EDSR Review. The Authority’s 2005 Final Determination concluded that a large quantity of capital expenditure was required to address this over-utilisation and cope with the expected future growth in electricity demand on the network.

3. SERVICE QUALITY PERFORMANCE

This section summarises the service quality performance of the revenue cap regulated business segment of Energex for 2007-08. The information is drawn from Energex's quarterly and annual service quality reports. These reports were submitted in accordance with the *Authority's Electricity Distribution: Service Quality Reporting Guidelines (Version 2.0)*.

The service quality measures of which the DNSPs are required to report against fall into three broad groups – reliability measures, quality of supply measures and customer service measures.

Reliability measures provide information about interruptions to electricity supply. Interruptions can occur because of problems with generation, transmission or distribution. Distribution interruptions may be planned or unplanned, and unplanned interruptions will at times be due to events that are beyond the control of the DNSPs, such as severe storms. A DNSP's performance is best indicated by the duration and frequency of planned and unplanned interruptions that are due to distribution network problems within the distributor's control, although lengthy and frequent interruptions due to other influences may indicate a need for improved risk management measures. Reliability data for worst performing feeders highlights the pockets of the network where customers experience relatively poor service quality.

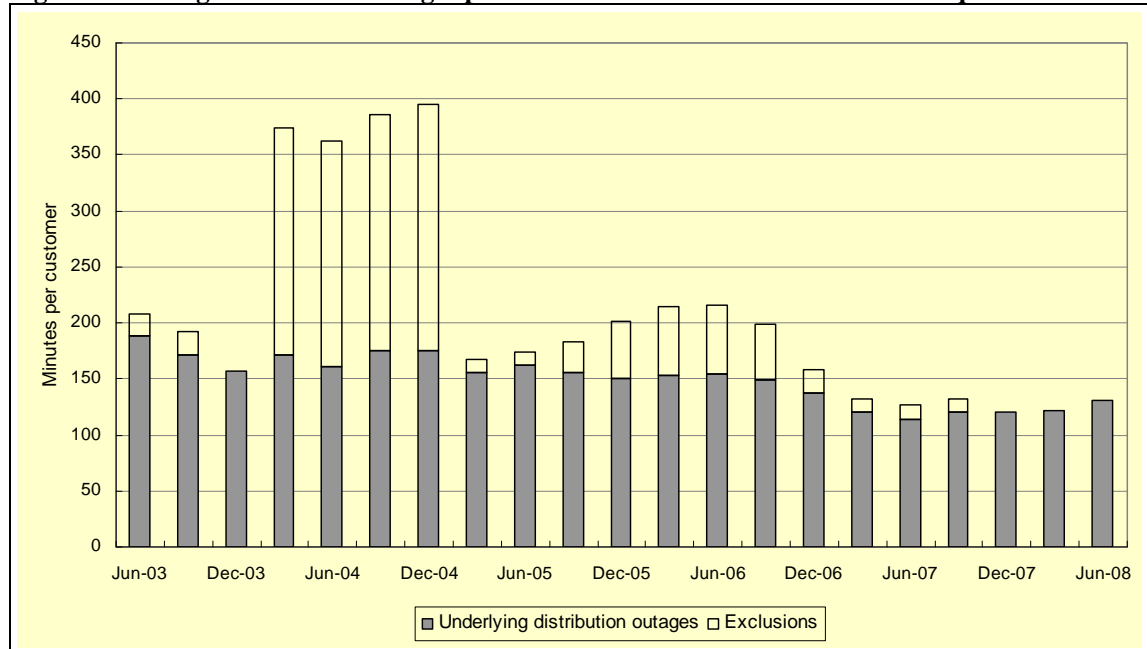
Quality of supply measures identify problems with the nature of electricity supply, such as low or high voltage levels based on customers reporting symptoms that are typically associated with such problems. For example, low supply voltage would be evidenced by complaints relating to light dimming or appliance motor starting problems.

Customer service measures provide information about how well customers' problems, enquiries and requests for services are handled.

3.1 Reliability Measures

In 2007-08, Energex customers experienced 1.54 distribution-related interruptions, leaving them without power for an average duration of 130.8 minutes. The duration of outages reported over the course of the year was relatively constant, albeit with a slight deterioration in the last quarter of the year. Energex attributed the deterioration to the increase in the number of storm occurrences and events associated with equipment failures in the rural network, which caused lengthy restoration times in the respective network. The spike in the total level of outages in 2004 was caused by severe storms that hit Energex's network in January 2004 (**Figure 4**).

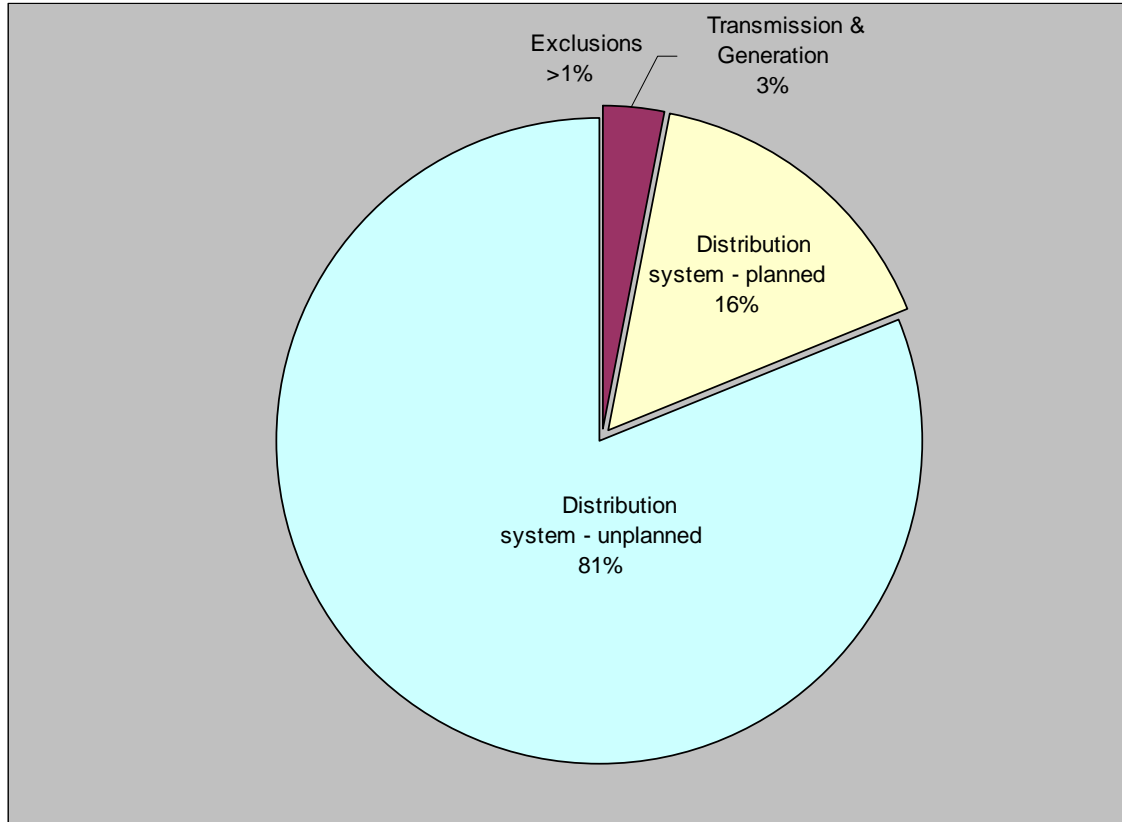
Figure 4: Average duration of outages per customer for the 12 months to end of quarter



Source: Energex’s Quarterly Service Quality Reports and QCA’s Analysis.

Unplanned interruptions arising in the distribution network, of which excluded weather-related events are a component, accounted for most (81%) of the average 130.8 minutes that Energex customers were without electricity supply during 2007-08. Planned interruptions in the distribution network accounted for the remaining 16% of outages (Figure 5).

Figure 5: Energex - duration of interruptions during 2007-08, by source



Source: Energex’s Quarterly Service Quality Reports and QCA’s Analysis.

Interruptions arising in the distribution network after the removal of excluded events can be disaggregated according to geographic categories – that is, Central Business District (CBD), Urban and Short Rural.² As shown in **Table 6**, there were significant differences in the level of reliability across Energex’s network by geographic category over the course of 2007-08. All customers experienced increases in the duration of interruptions during 2007-08. Customers in the short rural, urban and CBD areas experienced increases in the duration of interruptions of 38.3 minutes, 3.5 minutes and 2.5 minutes respectively.

Table 6: Energex – average duration of distribution-related interruptions by network type (minutes) after removal of exclusion events for the 12 months to end of quarter

	JUN 2007	SEP 2007	DEC 2007	MAR 2008	JUN 2008
Total distribution system	114.5	120.8	121.0	121.8	130.8
CBD	1.3	1.3	2.3	3.2	3.8
Urban	80.4	82.2	80.2	78.9	83.9
Short Rural	202.7	218.7	222.0	225.0	241.0

Source: Energex’s Quarterly Service Quality Reports.

² Energex does not have any feeders that meet the definition of Long Rural

Quarter-by-Quarter Reliability

As shown in **Table 7**, Energex's performance was significantly worse during the December and March quarters (the storm season). While the removal of excluded events smoothes these variations in reliability performance between quarters, it does not entirely remove seasonal fluctuations.

Table 7: Energex - average number and duration of distribution-related interruptions per customer

	SEP 2007	DEC 2007	MAR 2008	JUN 2008
Duration of all interruptions per customer (SAIDI) before excluded events – minutes	28.8	39.2	32.0	30.0
Duration of all interruptions per customer (SAIDI) after excluded events - minutes	28.8	39.2	32.0	30.0
Average number of interruptions per customer (SAIFI) before excluded events	0.35	0.42	0.41	0.36
Average number of interruptions per customer (SAIFI) after excluded events	0.35	0.42	0.41	0.36
Average duration of each interruption (CAIDI) before excluded events – minutes	82.2	92.8	78.4	83.0
Average duration of each interruption (CAIDI) after excluded events – minutes	82.2	92.8	78.4	83.0

Source: Energex's Quarterly Service Quality Reports.

Reliability of Worst Performing Feeders

Energex's worst performing feeders were selected according to normalised distribution SAIDI minutes. As shown in **Table 8**, the reliability of Energex's worst performing feeders generally deteriorated in 2007-08 compared to 2006-07. The only exception was the average number of interruptions (SAIFI) per customer on the 10 worst performing urban and short rural feeder.

Table 8: Energex - range of average number and duration of distribution-related interruptions per customer for the 10 worst performing feeders^a

	2003-04	2004-05	2005-06	2006-07	2007-08
SAIDI ^b – hours (before excluded events)					
Urban	31.0 – 49.3	8.7 – 14.6	7.2 – 13.8	6.3 – 15.0	7.1 – 26.6
Short Rural	36.3 – 48.2	16.3 – 25.8	15.7 – 49.2	8.0 – 16.5	13.8 – 25.5
SAIFI ^c (before excluded events)					
Urban	1.0 – 9.0	1.3 – 6.6	1.1 – 10.0	1.0 – 6.0	1.0 – 5.8
Short Rural	3.7 – 13.6	4.1 – 10.7	4.4 – 13.6	3.7 – 11.6	0.6 – 10.5

Source: Energex's Annual Financial and Service Quality Report, 2007-08.

Note : a - There are no feeders in the CBD as the network in this area is enmeshed.

b - SAIDI is the acronym for 'system average interruption duration index', which refers to the duration of all interruptions experienced in the last year on average, per customer

c - SAIFI is the acronym for 'system average interruption frequency index', which refers to the total number of times in the last year when supply was interrupted on average, per customer.

In 2007-08, Energex's 10 worst performing urban feeders supplied electricity to 4,293 customers, equivalent to 0.5% of Energex's urban customer base. On average, these customers experienced between 1.0 and 5.8 distribution-related interruptions, (without adjusting the data for exclusions), leaving them without power for between 7.1 and 26.6 hours. None of the worst performing urban feeders in 2007-08 was amongst the 10 worst performing feeders in 2006-07.

In 2007-08, Energex's 10 worst performing short rural feeders supplied electricity to 10,644 customers, equivalent to 2.9% of Energex's short rural customer base. On average, these customers experienced between 0.6 to 10.5 distribution-related interruptions, without adjusting the data for exclusions, leaving them without power for between 13.8 and 25.5 hours. Only one of the worst performing short rural feeders in 2007-08 was amongst the 10 worst performing feeders in 2006-07.

Due to the intermeshed nature of the network in the CBD area, the concept of 'Worst Performing Feeders' does not apply to the CBD area. In the CBD, customers are typically served by more than one feeder. As such, the probability of a customer's supply being interrupted is very low. An interruption will only occur when there is a second contingency problem which would occur in cases where:

- The network is configured in an abnormal state for maintenance (non-meshed) at the time when a fault occurs;
- The network is configured normally (meshed), but there is a mal-operation in protection systems following a fault; or
- There is a problem in the wider system such as a fault in the 110kV system or 110.11kV substations.

3.2 Quality of Supply Measures

The total number of technical quality of supply complaints received by Energex decreased from 1,504 complaints in 2006-07 to 1,054 complaints in 2007-08, indicating an improvement in Energex's quality of supply. As shown in **Table 9**, the majority of the complaints in 2007-08 were related to minor voltage dips (which can cause flickering lights), low supply voltage, (which can cause light dimming and motor starting problems) and voltage swell (which is likely to cause minor equipment damages and blowing out of lights).

Table 9: Energex - quality of supply complaints (categorised according to symptoms)

	SEP 2007	DEC 2007	MAR 2008	JUN 2008	TOTAL
Total quality of supply complaints	310	223	284	237	1,054
Voltage dips – minor	122	80	84	100	386
Low supply voltage	84	68	115	61	328
Voltage swell	63	45	53	47	208
TV or radio interference	29	12		22	86
Voltage dips – severe	0	0	0	0	0
Noises from appliances or lights	2	7	4	0	13
Voltage spike	10	9	5	7	31
Other complaints	0	0	0	0	0
Waveform distortion or unbalance	0	2	0	0	2

Source: Energex's Quarterly Service Quality Reports.

The average time taken to investigate and resolve a technical quality of supply complaint improved, from an average of 27 days in the June quarter 2007 to 24 days in the June quarter 2008.

As in previous years, the majority of the technical quality of supply complaints in 2007-08 were caused by network initiated restrictions (for example, faulty network equipment and network interference by Energex) (refer to **Table 10**).

Table 10: Energex - quality of supply complaints, possible causes

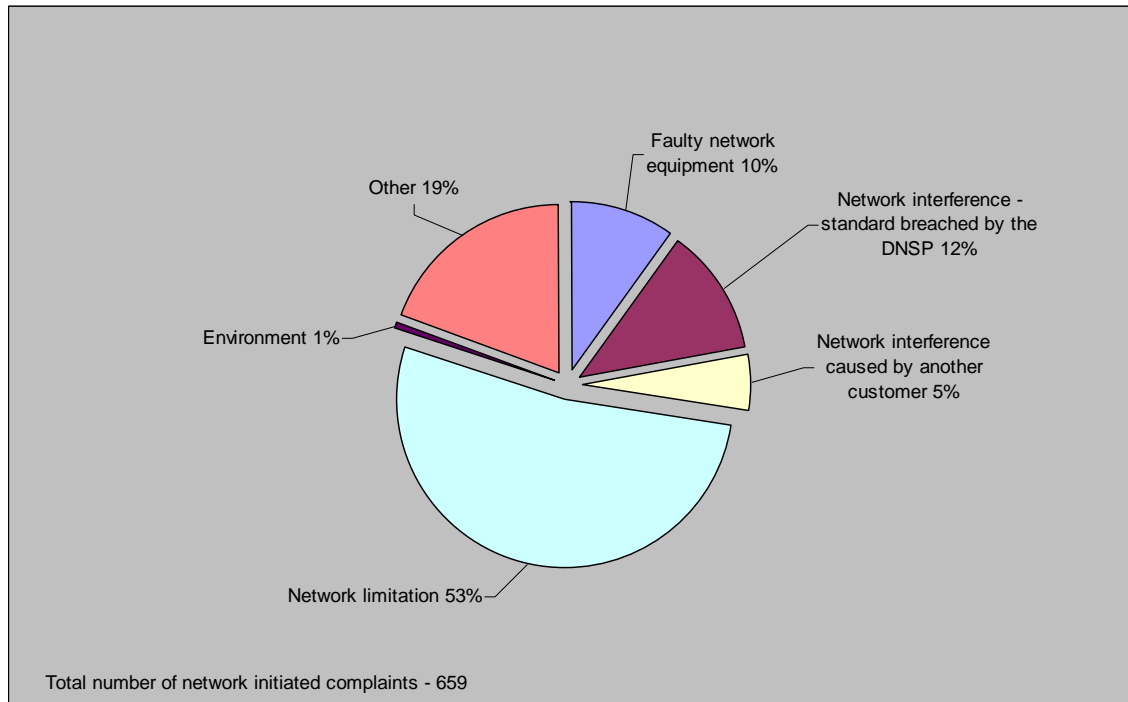
Quality of supply complaint	2004-05	2005-06	2006-07	2007-08
Network initiated quality of supply complaints	1,134	1,811	1,544	659
Quality of supply complaints initiated on the customer side of the meter	294	210	206	155
Quality of supply complaints for which no cause was found	206	391	356	348

Source: Energex’s Annual Service Quality Report, 2007-08.

Note : The summation of the above categories of possible causes for quality of supply complaints do not equal the total of the four quarterly quality of supply complaints as listed in Table 9 due to the removal of possible double entries and misclassified complaints.

As illustrated in **Figure 6**, network-initiated quality of supply complaints can be categorised. The largest of the six categories is *Network limitation*, which accounted for 53% of total complaints. These are defined as those problems which require Energex to invest in its network to resolve, for example by increasing its network capacity, upgrading its plant or altering its control settings. Interference to the network arising from the operation of equipment by Energex (12%) and other causes (19%) explained most of the remaining network-related quality of supply complaints. There were no major changes in the composition of network-initiated complaints in 2007-08 compared with 2006-07.

Figure 6: Energex – causes of network initiated quality of supply complaints



Source: Energex Annual Financial and Service Quality Report, 2007-08 and QCA’s Analysis.

3.3 Customer Service Measures

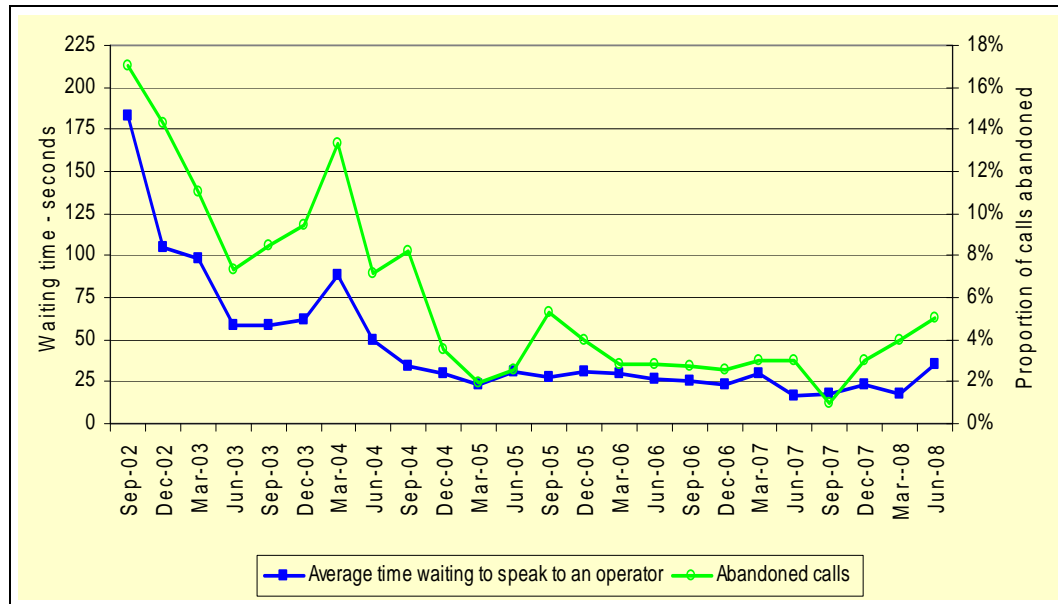
In 2007-08, Energex’s performance against a range of customer service measures was mixed.

Figure 7 shows the length of time that Energex’s customers had to wait, on average, to speak to an operator when calling the call centre. This measure fluctuated during 2007-08, recording a

peak of 35 seconds during the last quarter of the year (June quarter 2008). This is also the worst result recorded for this measure in 2007-08. Prior to 2007-08, this measure had continually improved from 183 seconds recorded in the September quarter 2002, with the exception of a spike in the March quarter 2004 related to the severe storms and outages that placed significant pressure on the call centre at that time.

As shown in **Figure 7**, the percentage of calls abandoned increased over 2007-08, from 3.0% in the June quarter 2007 to 5.0% in the June quarter 2008. However, this result still represents a significant improvement from the peak of 17% of calls that were abandoned during the September quarter 2002.

Figure 7: Energex - average time waiting to speak to an operator and percentage of abandoned calls



Source: Energex’s Quarterly Service Quality Reports and QCA’s Analysis.

As shown in **Table 11**, the number of complaints that Energex received regarding reliability of supply decreased marginally from 344 complaints in 2006-07 to 338 complaints in 2007-08. The number of reliability complaints is typically higher in the storm season quarters (December and March). However, because Energex changed the reporting of this measure in the March quarter 2005, historical comparisons are no longer appropriate. The change in reporting was caused by the change in Energex’s complaints management process in aligning its processes with the requirements of the Electricity Industry Code and the EDSD requirements. The change required Energex to capture customer dissatisfaction even when the complaint is resolved at the point of contact.

A new requirement of the Authority’s revised Service Quality Reporting Guidelines is the inclusion of complaints relating to momentary interruptions to supply³ as a sub-category of reliability complaints. **Table 11** shows the number of momentary interruption complaints received by Energex in 2007-08. The number of momentary interruption complaints decreased from 35 complaints in 2006-07 to 26 complaints in 2007-08. It should be noted that the momentary interruptions complaints are a sub-set of the total number of reliability complaints.

³ Momentary interruptions to supply are defined as interruptions with a duration of less than one minute

Table 11: Energex - number of reliability complaints

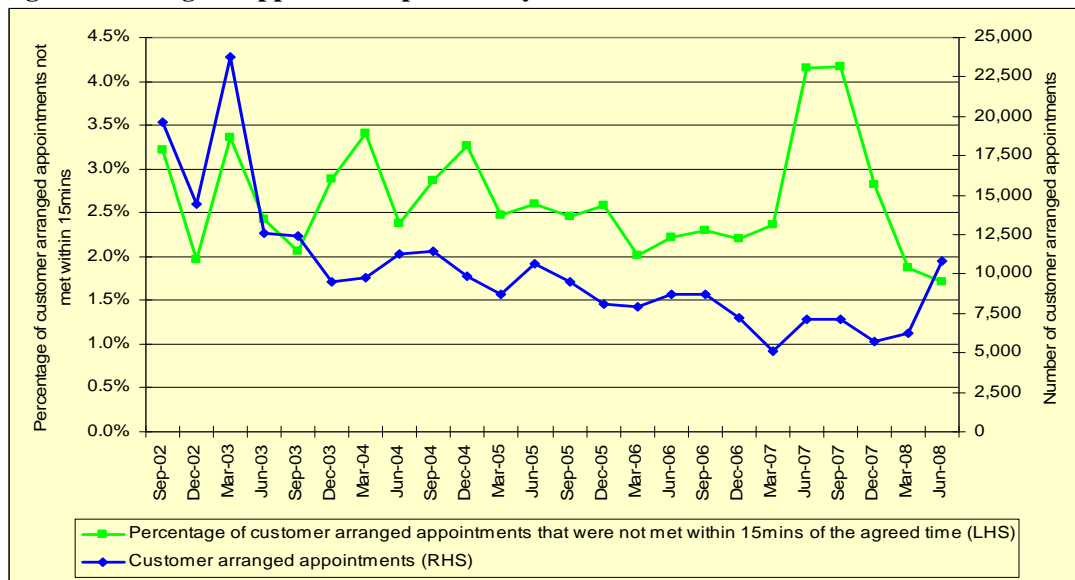
	SEP 2007	DEC 2007	MAR 2008	JUN 2008	TOTAL
Number of reliability complaints	139	58	95	46	338
Momentary interruption complaints	6	8	7	5	26

Source: Energex’s Quarterly Service Quality Reports

Figure 8 shows fluctuations in the proportion of customer appointments that Energex failed to attend within 15 minutes of the agreed time, with the proportion improving from 4.1% in the June quarter 2007 to 1.7% in the June quarter 2008. The September quarter 2007 recorded the worst result to date, with 4.2% of customer appointments not met within 15 minutes of the agreed time.

The total number of customer-arranged appointments increased significantly from 7,159 appointments in the June quarter 2007 to 10,843 appointments in the June quarter 2008. This is also the highest result recorded over the year. Energex attributed the result to the increase in the number of customer-arranged appointments needed for Energex to conduct visual inspections of premises to re-energize disconnected vacant premises during the year.

Figure 8: Energex - appointment punctuality



Source: Energex’s Quarterly Service Quality Reports, and QCA’s Analysis.

As shown in Figure 9, the proportion of total new supply connections that Energex failed to make by the agreed date fluctuated during the year, with a very sharp rise from 3.3% in the September quarter 2007 to 35.6% in the June quarter 2008. This is the highest and worst result reported for this measure since September quarter 2002. The significant deterioration was due to a range of structural and mechanical issues encountered by Energex during the June quarter 2008, including:

- An increase in the number of requests for new connections to Energex’s network;
- An industry wide shortage of trade qualified staff;

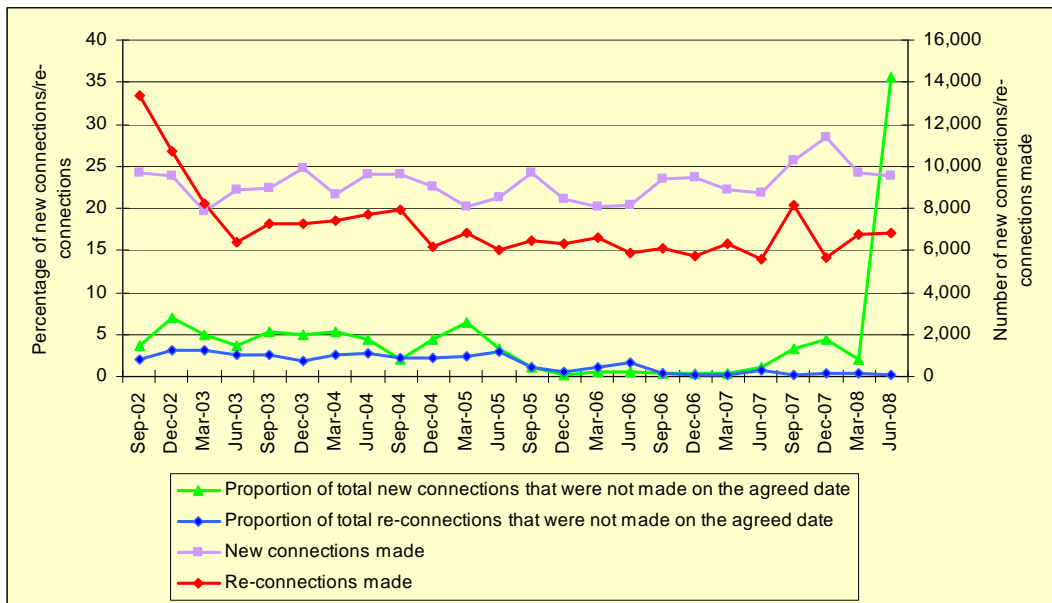
- IT problems experienced with Energex’s recent transitioning from FACOM to PEACE system;
- Overtime restrictions arising from industrial action associated with the enterprise bargaining award (EBA) negotiations;
- Delays associated with dealing with multiple retailers with conflicting internal policies and procedures across jurisdictions; and
- Other external factors (such as severe weather conditions).

These were also the reasons behind the sharp rise in the proportion of customer appointments that were not met by Energex within 15 minutes of the agreed time, as mentioned previously.

In response to this matter, Energex advised that it will use all reasonable endeavours to improve performance in meeting its obligations. It is understood that the recent backlog of new connection service orders has been resolved and Energex is continuing to review and implement improvements in its business processes.

The proportion of total reconnections of supply that were not made on the agreed date dropped significantly from 0.7% in the June quarter 2007 to 0.3% in the June quarter 2008.

Figure 9: Energex - number of new and re-connections made, proportion of new connections and re-connections not made on the agreed date

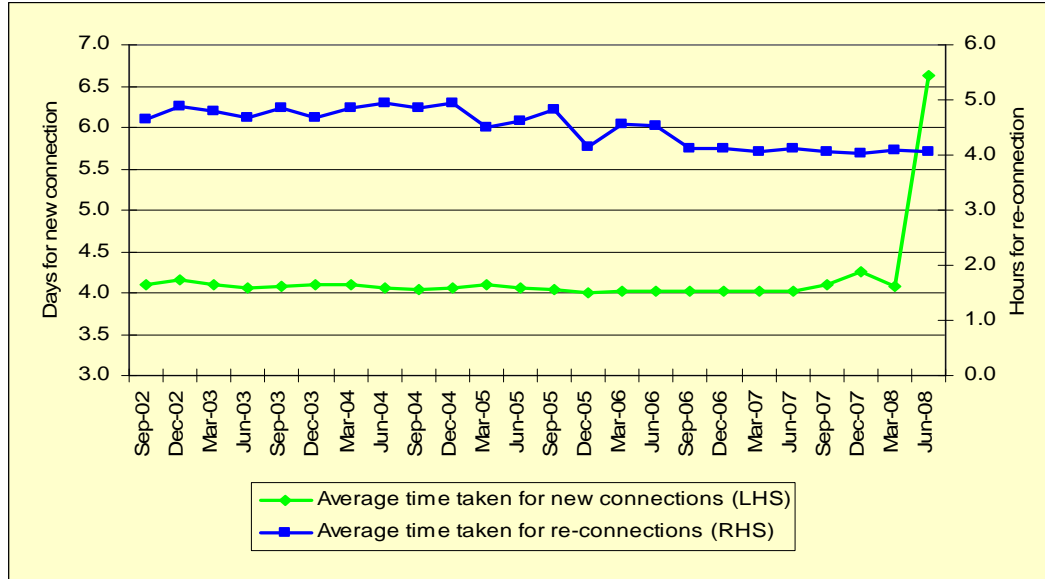


Source: Energex Quarterly Service Quality Reports and QCA’s Analysis.

As shown in **Figure 10**, the average length of time that customers had to wait for a new connection to the network has varied little over the last six years (at around four days), with the exception of the last quarter, recording 6.6 days.

The average time that customers had to wait to be re-connected was also constant at 4.1 hours during 2007-08.

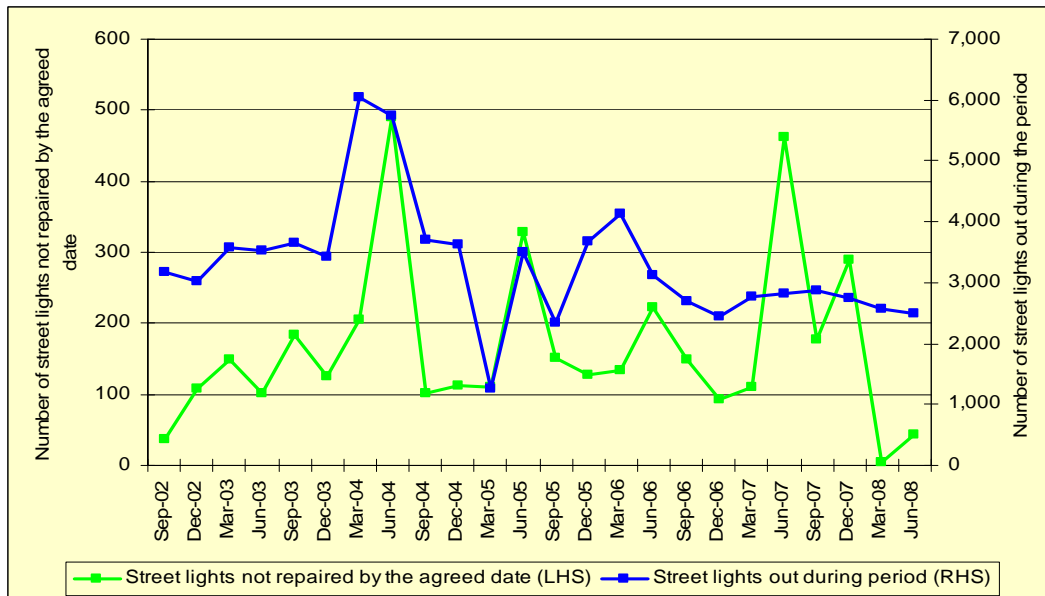
Figure 10: Energex - average time taken for new connections and re-connections



Source: Energex’s Quarterly Service Quality Reports and QCA’s Analysis.

The number of Energex’s streetlights reported as being out has been quite variable, as shown in **Figure 11**. In 2007-08, the total number of streetlights reported out dropped marginally, from 10,734 streetlights in 2006-07 to 10,664 streetlights in 2007-08. The number of streetlights not repaired by the agreed date dropped in 2007-08, from 814 streetlights in 2006-07 to 514 streetlights out in 2007-08. The best result for this measure was demonstrated during the March quarter 2008, with a record low of 4 streetlights being out.

Figure 11: Energex - street light maintenance



Source: Energex’s Quarterly Service Quality Reports and QCA’s Analysis.

The average time taken to repair faulty streetlights remained constant at four days during 2007-08. This measure has varied little since reporting began under the Guidelines (between three to five days) (**Table 12**).

Table 12: Energex - average time taken to repair faulty streetlights

	SEP 2007	DEC 2007	MAR 2008	JUN 2008
Average number of days taken to repair street lights	4.0	4.0	4.0	4.0

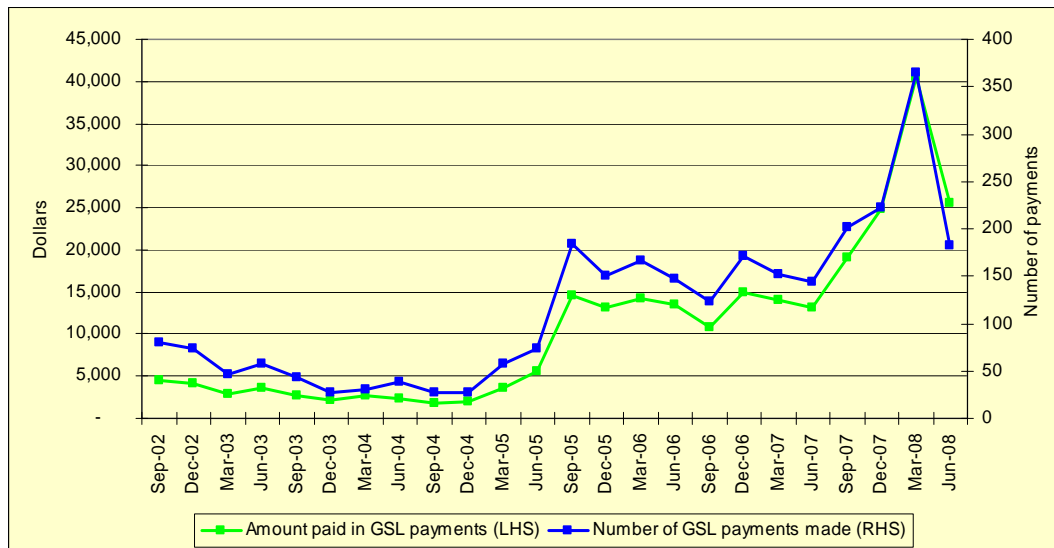
Source: Energex's Quarterly Service Quality Reports.

Guaranteed Service Levels (GSL) relate to the quality of service received by individual customers. In certain circumstances, if distributors fail to comply with the GSL, the Electricity Industry Code provides that an affected customer is eligible for compensation in the form of a GSL payment. The rapid increase in quarterly GSL payments during 2005-06 was due to the introduction of a GSL scheme mandated by the Queensland Government from 1 January 2005. Prior to 1 January 2005, GSL payments were voluntary payments made by the distributors to customers that reported instances where the distributors had not met self-imposed service quality standards.

The number of Guaranteed Service Level (GSL) claims made to customers and the amounts paid for GSLs both increased significantly during 2007-08. Energex has reported 971 GSL payments made to customers during 2007-08, which is a 64% increase from the 592 payments made in 2006-07. Likewise, the total GSL payments made in 2006-07 have increased by more than two folds, from \$52,980 during 2006-07 to \$109,850 in 2007-08. The majority of GSL payments made by Energex were related to late connections and wrongful disconnections.

It should be noted that these statistics exclude a large number of claims made during May and June 2008 for late new connections. Energex reported that it is still investigating 2,785 additional claims of this kind. These new claims have not been included in the data reported above because the claims had not been investigated or determined by Energex as at the reporting date. Energex proposes to include any GSL payments made in relation to these claims in its September quarter 2008 service quality report.

Figure 12: Energex - guaranteed service level payments



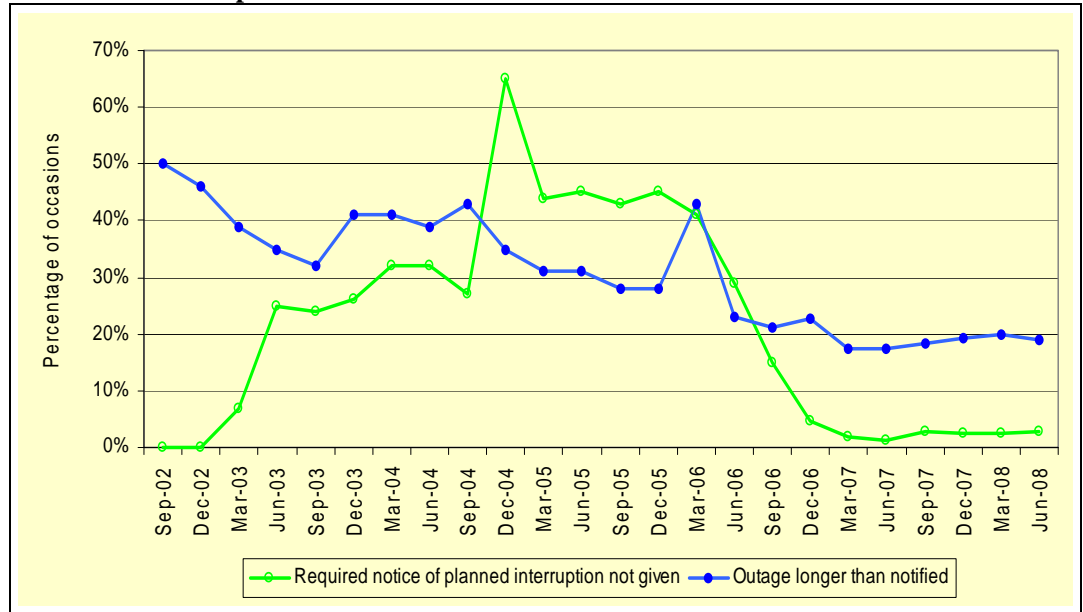
Source: Energex's Quarterly Service Quality Reports and QCA's Analysis.

The proportion of occasions on which the required notice of a planned interruption to supply was not given remained constant at an average of 2.7% during 2007-08 as compared to an average of 5.7% during 2006-07. The large increase in this measure for the December quarter

2004 was due to problems encountered by Energex after changing its process of recording planned interruptions.

Similarly, the proportion of occasions on which the duration of a planned interruption exceeded the time specified in the notification also remained relatively constant during 2007-08, at an average rate of 19.2% (**Figure 13**).

Figure 13: Energex - notification of commencement and duration of planned interruptions



Source: Energex’s Quarterly Service Quality Reports and QCA’s Analysis.

The basis for reporting customer service complaints was changed in the Authority’s revised Service Quality Reporting Guidelines (August 2005). As a result, it is not appropriate to compare results from September quarter 2005 with earlier results. Energex also commenced reporting complaints about meter reading from the March quarter 2006 which caused another break in the series.

As shown in **Table 13**, meter-reading complaints were the main contributor of complaints during 2007-08. The timeliness of service delivery and complaints relating to general issues were among the other important causes of complaints during 2007-08.

Table 13: Energex - complaint resolution, reasons for complaints

Type of complaint	SEP 2007	DEC 2007	MAR 2008	JUN 2008	TOTAL
Total number of complaints	3,662	3,153	2,832	1,601	11,248
Meter reading complaints	2,595	2,262	2,002	344	7,203
Timeliness of service delivery	312	225	180	210	927
Trees	160	141	127	86	514
General complaints	162	126	153	686	1,127
Staff behaviour	205	151	120	110	586
Damage to property	88	90	100	80	358
Condition of worksite	48	47	46	34	175
Poles	24	34	44	16	118
Streetlights	25	43	32	14	114
Driving	20	17	13	5	55
Vehicles	17	12	11	13	53
Transformers	6	5	4	3	18

Source: Energex's Quarterly Service Quality Reports.

The percentage of complaints resolved within 20 days was 94.5% during June quarter 2008, representing a slight deterioration compared to 96.7% of resolved complaints recorded during the June quarter 2007. The average time taken to resolve complaints remained steady at 2 days in the June quarter 2008, unchanged from the result recorded in the June quarter 2007.

The number of repeat complaints peaked at six during the December and March quarter 2008, before dropping to three complaints in the June quarter 2008. The average time taken to resolve repeat complaints fluctuated over 2006-07, peaking in the September quarter 2007 at 15 days before declining to 9 days in the June quarter 2008.

APPENDIX A

FINANCIAL DATA TABLES – 2001-02 to 2007-08

Table A1: Aggregate financial information – Energex (\$million, nominal)

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Revenue							
Forecast	467.3	497.0	523.6	545.7	626.8	692.1 ¹	777.8 ¹
Actual	468.4	505.1	535.9	551.1	652.7	715.1 ¹	754.3 ¹
Expenditure							
Forecast operating and maintenance expenditure	161.7	168.9	176.4	184.2	225.9	270.5	272.5
Actual operating and maintenance expenditure							
Operating expenditure	49.7	15.1	13.0	19.2	70.5	85.4	79.6
Maintenance expenditure	80.5	105.9	122.4	151.0	163.6	189.1	203.7
Total (Actual)	130.2	121.0	135.4	170.2	234.1	274.5	283.3
Forecast depreciation	157.0	165.3	173.1	179.9	225.9	240.8	260.2
Actual depreciation	130.6	156.7	163.7	167.6	211.1	235.4	251.8
Total expenditure (forecast)	318.7	334.2	349.5	364.1	451.8	511.3	532.7
Total expenditure (actual)	260.8	277.7	299.1	337.8	445.2	509.9	535.1
Customer contributions							
Forecast	23.3	24.0	24.6	25.1	35.9	39.2	42.6
Actual	23.9	24.8	45.8	40.8	38.8	47.2	49.3
Tax paid							
Forecast					7.6	6.5	12.7
Actual					24.0	6.6	6.8
Capital expenditure							
Forecast	254.3	257.9	253.3	256.0	578.7	667.6	799.4
Actual	270.6	281.7	302.9	526.5	725.0	718.9	683.0
Fixed assets							
Forecast	3,020.4	3,176.7	3,323.8	3,469.7	4,823.6	5,424.6	6,124.5 ²
Actual	2,977.6	3,169.9	3,313.3	4,371.9	5,022.8	5,608.4	6,266.9 ²
Energy Sales (million MWh)							
Actual	17.2	17.8	19.0	19.7	20.8	21.1	(1.0)
Number of customers							
Actual	1,105,100	1,129,940	1,160,112	1,190,237	1,217,193	1,248,510	1,270,734

¹ Excludes revenue from non-DUOS services (later reclassified as excluded services).

² Energex estimated that the actual fixed assets include \$7.1 million of regulated assets used for the provision of excluded services.

Table A2: Revenue – Energex (\$million, nominal)

<i>Revenue source*</i>	<i>2001-02</i>	<i>2002-03</i>	<i>2003-04</i>	<i>2004-05</i>	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>
Sales							
Network services (exc. public lighting)	468.4	505.1	515.0	531.6	607.5	658.4	723.5
Public lighting	n/a	n/a	20.9	19.5	25.2	29.1	30.8
Total network services	468.4	505.1	535.9	551.1	632.7	687.5	754.3
TUOS pass-through	126.0	160.0	166.0	175.0	187.0	194.5	219.6
Excluded Services	9.4	14.2	11.7	7.7	20.0	27.6	22.9
Total services	603.8	679.3	713.6	733.8	839.7	909.6	996.8
Capital contributions	23.9	24.8	45.8	40.8	38.8	47.2	49.3
Profit from sale of assets	1.1	1.2	0.4	(0.6)	0.2	1.0	(1.1)
Proceeds from sale of assets	6.3	12.9	6.5	3.7	5.0	9.6	14.1
Book value of assets sold	5.2	11.7	6.1	4.3	4.8	8.6	15.2
Other revenue	2.3	2.4	2.1	1.7	2.2	16.8	45.5

* *May not sum due to rounding.*

Table A3: Operating and maintenance expenditure - Energex (\$million, nominal)

<i>Expenditure</i>	<i>Network Services</i>	<i>Excluded Services</i>
Operating expenditure		
Meter reading	9.8	-
Customer service	10.4	-
Advertising and marketing	2.0	-
Full retail contestability	25.5	-
Other –		
Network Operations	18.8	-
Recoverable works	-	-
Other	13.2	-
Total	79.7	-
Public street lighting	0	-
Total operating expenditure	79.7	24.0 ¹
Network maintenance expenditure		
Inspection	17.7	-
Maintenance and repair	103.7	-
Vegetation management	65.0	-
Emergency Response	5.1	-
Other	0	-
Total	191.5	-
Public street lighting	12.3	-
Total maintenance expenditure	203.7	-
Total operating and maintenance expenditure*	283.3	24.0

* May not sum due to rounding.

¹ Includes expenditures for infrastructure projects and excluded distribution services.

Table A4: Depreciation – Energex (\$million, nominal)

<i>Asset</i>	<i>Network Services</i>	<i>Excluded Services</i>
System Assets:		
overhead sub-transmission lines	11.7	-
underground sub-transmission lines	20.0	-
overhead distribution lines	27.4	-
underground distribution lines	26.8	-
distribution equipment	3.2	-
substation bays	15.7	-
substation establishment	2.5	-
substation switchgear	2.1	-
zone transformers	11.9	-
distribution transformers	27.1	-
low voltage services	6.1	-
meters	9.8	-
communications	1.0	-
street lighting	23.5	-
buildings	4.7	-
easements	0	-
land	0	-
Non-System Assets:		
communications	0.1	2
control centre -SCADA	4.2	135
IT systems	24.8	802
office furniture and equipment	0.5	16
motor vehicles	22.5	727
research and development	0	0
buildings	6.4	207
easements	0	0
land	0	0
Total*	251.8	1.9

* May not sum due to rounding.

Table A5: Expected and remaining lives of assets - Energex

<i>Asset</i>	<i>Expected weighted average economic life (weighted by optimised replacement cost (ORC)) (years)</i>	<i>Weighted average remaining economic life (weighted by ORC) (years)</i>
<u>System Assets:</u>		
overhead sub-transmission lines	51	39
underground sub-transmission lines	45	35
overhead distribution lines	45	34
underground distribution lines	60	49
distribution equipment	35	30
substation bays	45	34
substation establishment	50	38
substation switchgear	45	33
zone transformers	50	43
distribution transformers	42	31
low voltage services	35	30
meters	25	16
communications	32	25
street lighting	20	13
buildings	46	40
easements	0	-
land	0	-
<u>Non-System Assets:</u>		
communications	8	4
control centre -SCADA	12	2
IT systems	5	3
office furniture and equipment	7	5
motor vehicles	7	5
research and development	5	0
buildings	32	30
easements	-	-
land	-	-

Table A6: Asset values – Energex (\$million, nominal)

<i>Asset</i>	<i>\$ million</i>
<u>System Assets:</u>	
overhead sub-transmission lines	259.5
underground sub-transmission lines	420.7
overhead distribution lines	855.5
underground distribution lines	1,291
distribution equipment	87.8
substation bays	467.8
substation establishment	90.7
substation switchgear	59.0
zone transformers	344.3
distribution transformers	817.5
low voltage services	186.5
meters	126.0
communications	25.9
street lighting	247.9
buildings	176.9
easements	79.0
land	165.6
<u>Non-System Assets:</u>	
communications	0.2
control centre -SCADA	4.4
IT systems	8.0
office furniture and equipment	1.7
motor vehicles	123.4
research and development	0.0
buildings	55.1
easements	0.0
land	33.2
Work in progress	339.8
Total*	6,266.9

* May not sum due to rounding.

Table A7: Capital Expenditure and additions – Energex (\$ million (nominal))

<i>Capital expenditure*</i>	<i>\$ million</i>
System Assets:	
overhead sub-transmission lines	21.9
underground sub-transmission lines	67.4
overhead distribution lines	101.0
underground distribution lines	113.9
distribution equipment	16.6
substation bays	29.1
substation establishment	13.9
substation switchgear	3.8
zone transformers	50.7
distribution transformers	97.8
low voltage services	48.5
meters	1.1
communications	10.8
street lighting	20.4
buildings	11.8
easements	2.5
land	21.4
Non-System Assets:	
communications	0.0
control centre -SCADA	0.0
IT systems	(6.7)
office furniture and equipment	1.5
motor vehicles	44.3
research and development	0.0
buildings	4.9
easements	0.0
land	6.3
Total	683.0

* May not sum due to rounding.

Table A8: Capital expenditure by purpose – Energex (\$million, nominal)

<i>Capital expenditure</i>	<i>\$ million</i>
Asset replacement	69.7
Demand related	533.7
Reliability and quality improvements	19.0
Other	60.6
Total	683.0

Table A9: Related party transactions – Energex (\$million, nominal)

<i>Transaction</i>	<i>\$ million</i>
Total value of related party transactions	47.3