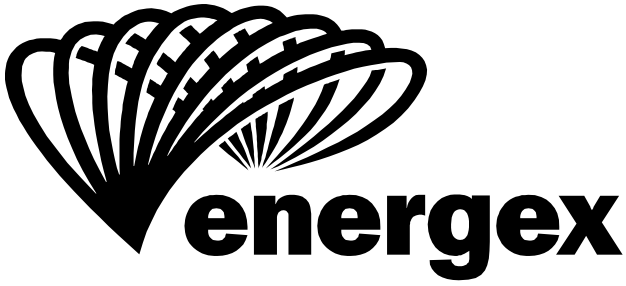

Submission
to the
Queensland Competition Authority

Electricity Distribution:
Service Quality

ENERGEX

October 2000

1. INTRODUCTION

This Paper is a submission to the Queensland Competition Authority (QCA) in response to its Issues Paper "Electricity Distribution: Service Quality" dated September 2000.

This submission seeks to address each of the items raised by the QCA in their Issues Paper and to recommend options to address those items. Other matters not included in the Issues Paper but considered important by ENERGEX are also outlined in this submission.

This submission is a joint submission made by ENERGEX Limited and ENERGEX Retail Pty Ltd. The name ENERGEX will be used throughout this paper as a reference to this group.

Part D of Chapter 6 of the National Electricity Code

6.10.5 **Form and mechanism of economic regulation**

In respect of distribution services subject to economic regulation pursuant to clause 6.10.4(a):

(d) In setting a separate regulatory cap to be applied to each Network Owner in accordance with clause 6.10.5(b), the Jurisdictional Regulator must take into account each Distribution Network Owner's revenue requirements during the regulatory control period, having regard for:

2) The service standards applicable to the Distribution Network Owner under the Code and any other standards imposed on the Distribution Network Owner by any regulatory regime administered by the Jurisdictional Regulator and by agreement with the relevant Network Users;

2. OVERVIEW OF COMMUNITY EXPECTATIONS

ENERGEX has observed in recent years a demand by customers for improved reliability and quality of supply. We believe that this has been brought about by the increase in computer technology and other electronic devices. In particular, many customers now have both computers and facsimile machines and have become highly sensitive to any supply disturbance. Such disturbances can cause problems in regard to business operations, such as loss of valuable information, not to mention the inconvenience of re-setting clocks and a range of electronic devices now included in virtually every home and business premise.

Therefore, while ENERGEX has been working on improvements in reliability and quality, we have also observed that the community expectations grow steadily each year. We accept this as a valid community expectation of our service levels and believe that these service levels must continue to rise to meet these expectations.

ENERGEX is a low cost network service provider. Our network prices are at or are near the cheapest in Australia. Against this backdrop we believe that the QCA must be

cognisant of the price/quality trade-off that arises in the Queensland regulatory environment. That is, with a low price and an increasing demand for better service from the network, it would be inappropriate for QCA to cut costs. ENERGEX must continue to invest at both an operating and a capital level to continuously improve service levels in South East Queensland to meet community expectations. Cutting of costs would make it very difficult, if not impossible, for ENERGEX to improve service quality. We believe that such cost cutting would be contrary to the wishes of the community and hence an inappropriate regulatory outcome.

ENERGEX wishes to improve service quality but to achieve this we require reasonable allowances for both current and future operating costs and capital expenditure.

3. MEASURES OF SERVICE QUALITY

In determining service quality standards, the Code requires that the Jurisdictional Regulator takes into consideration the levels of service set, the expectations of customers and the costs associated with achieving and maintaining the target performance levels. ENERGEX believes that the adopted standards should be limited to key aspects of service delivery that provide the most benefit to all customers.

The three broad categories of service quality measures that are being considered are as follows:

- network reliability;
- technical quality; and
- customer service.

3.1 Network Reliability

The Authority seeks comment on:

- whether the five measures (SAIDI, SAIFI, CAIDI, MAIFI and energy not supplied) are appropriate and adequate measures of network reliability and whether there are likely to be any particular difficulties in reporting against these measures; and

- approaches to identifying exceptionally poor service quality such as reporting on worst performing feeders or providing statistical measures of service quality variability such as standard deviation.

3.1.1 Measures of Reliability

The proposed measures of System Average Interruption Duration Index (SAIDI), System Average Interruption Frequency Index (SAIFI), Customer Average Interruption Duration Index (CAIDI) and Momentary Average Interruption Frequency Index (MAIFI) are consistent with normal industry practice and represent appropriate measures of system reliability. These indices are based on aggregated data that provide overall system averages.

ENERGEX currently reports on the first three indices (SAIDI, SAIFI AND CAIDI) on an annual basis. The indices are segmented into High-Density, Urban and Rural categories. The calculation of these indices is based on an estimated “curtailed load methodology” and an assumption of average Any Time Maximum Demand (ATMD) per customer is used to estimate the number of customers affected. This process is unsatisfactory and

requires further enhancement to improve on the accuracy of estimating the number of customers affected. To implement the proposed measures, systems and data capture protocols will require further refinement.

The determination of SAIDI, SAIFI and CAIDI is based on high voltage (11kV and above) feeder outages and distribution transformer outages and excludes individual customer's loss of supply. Analysis of the 1999/2000 outage data indicates that individual customer's loss of supply events accounts for less than 0.01% of total energy curtailment. We therefore believe that the exclusion of the individual customer's loss of supply events will not have a material impact on the calculation of the reliability indices but will deliver some cost advantage in relation to the amount of data required. Any requirements to include individual customer outages will involve additional capital expenditure and incur further cost in the data capturing process.

ENERGEX has concerns with the requirement to report on MAIFI. Unlike SAIFI, SAIDI and CAIDI, we believe that MAIFI is a developing measure and the measurement and recording equipment required to monitor this level of reliability is currently not fully deployed throughout the distribution network. Data collection of this measure is therefore incomplete. Improvement in data collection and therefore reported interruptions may in the short term give an incorrect impression of MAIFI performance.

ENERGEX does not currently report on MAIFI and would need to put in place a system to enable the measurement of MAIFI. As we do not have information on the operations of all switchgear (particularly remotely located pole mounted reclosers), ENERGEX proposes that MAIFI be limited only to interruptions with a successful reclose that are recorded at the zone substations where we have appropriate system control and data acquisition facilities. ENERGEX further proposes that trending of MAIFI should not be used as a measure of network performance change until the data collection system and analysis methodology have been fully developed.

ENERGEX recommends the proposal to report on "energy not supplied" be reviewed to determine the benefit of the measure. ENERGEX does not believe that this measure will add any useful information on the performance of the distribution network.

ENERGEX agrees with the proposed measures of SAIDI, SAIFI CAIDI and MAIFI, which are consistent with normal industry practice and represent appropriate measures of system reliability. The MAIFI should be for interruptions with successful reclose that are recorded at the zone substations only.

ENERGEX does not support the reporting of "energy not supplied" unless the benefits of providing the information can be demonstrated.

3.1.2 Worst Performing Feeders

ENERGEX has for a number of years been monitoring the reliability levels of some of our worst performance feeders. As a result of this process, reliability improvement capital projects and maintenance programs have been and are currently being undertaken to improve the performance of these feeders.

ENERGEX cautions an absolute reliance on this information as an indicator of network reliability. The distribution network is a dynamic system where a change in network configuration will impact on the reported performance of individual feeders. Examples include:

- change in feeder boundary due to transfer of load between adjacent feeders (ie change in open point), and

- system augmentation such as the splitting of feeders into different segments with the same or different name

ENERGEX is prepared to accept the approach of identifying and reporting on worst performing feeders. ENERGEX's strategy is to target improvement of these feeders in our effort to continually improve our system performance and reliability.

We see the opportunity to work with QCA to develop a reporting framework to overcome the limitation of the whole feeder reporting.

3.2 Technical Quality

The Authority seeks comment on:

- the appropriateness of including technical quality measures in service quality reporting;

- whether monitoring customer feedback alone should be sufficient;

- the appropriate over-voltage events to monitor, if any; and

- the appropriate approach to monitoring system voltage, if included

ENERGEX believes that the general approach to the monitoring and reporting of technical quality of supply is that it:

- Provides data on the true performance of the ENERGEX network,
- Will be of benefit in identifying improvements to customer power quality, and
- Will be cost effective, in that the cost of monitoring should not exceed the benefit to customers.

Our view is that reporting of the technical quality of supply (as distinct from reliability) should take two forms, namely:

- customer feedback in the form of validated customer voltage complaints,
- voltage monitoring at selected points on the ENERGEX network.

3.2.1. Customer Feedback

ENERGEX already reports internally on customer voltage complaints as an overall measure of supply quality. This measure consists of the raw number of customer complaints received, before investigation has been completed to verify whether such a complaint has been generated by a network deficiency. Work has been carried out to improve the process where complaints are received, investigated and rectification works, if necessary, undertaken.

We note the requirements of the Office of the Regulator-General (ORG), Victoria in this regard, but consider that:

- The focus on "over-voltage" events and their specific cause is unnecessarily narrow since many customer complaints relate to under-voltage, some being longer duration (some minutes to hours) and some being short duration dips or surges.

- Some measures such as "Over-voltage events due to lightning" would be very difficult and costly to collect. We would query the ability of any Distributor to report accurately and systematically on this measure given the inherent transient nature of the event.

ENERGEX suggests that voltage complaints be sub-categorised as follows:

- Network related event
  - Network related event due to network faults (eg transformer upgrade required)
  - Network related event due to external causes (eg car hit pole, storm etc.)
- Customer initiated event
- No cause found

ENERGEX submits that technical quality measures reporting should take the form of:

- **Customer feedback in the form of validated voltage complaints**
- **Voltage monitoring at selected points on the ENERGEX network**

ENERGEX prefers reporting format for voltage complaints based on the categories as follows:

- **Network Related Events,**
  - **Network related events due to network faults**
  - **Network related events due to external events**
- **Customer Initiated Events**
- **No Cause Found**

3.2.2 Voltage Monitoring

We disagree with the Office of the Regulator-General (ORG) requirement for voltage monitoring at the extremity of one feeder from each zone substation, as this would not be a cost effective solution for Queensland. Our network consists in excess of 1000 interconnected feeders of average length, where voltage quality is not necessarily worse at the end. ENERGEX supports the monitoring of a small number of long feeders (in excess of 20 km) where remote end monitoring would provide an indication of voltage problems. ENERGEX has been actively considering options for power quality monitoring in its area, and has recently joined the power quality areas of EPRI (formerly the Electric Power Research Institute, USA) in order to access the considerable developments which have been made in these areas.

Such systems require considerable time and expenditure in development to produce meaningful results, and an interim solution is proposed until more experience is gained in this area. ENERGEX has significant numbers of remotely readable smart meters at contestable sites with power quality monitoring facilities, covering specific

areas for most zone substations. It is proposed that the approach to monitoring at this stage should be to:

- Select those remotely readable smart meters which give a good coverage of most zone substation areas
- Augment this selection with a small number of extra meters installed specifically near the end of selected long feeders, say greater than 20 km.
- Report on voltage levels by zone substations.

Monitoring of voltage levels at the zone substation bus (normally 11 kV level) is not considered useful, since voltages at this location are usually very stable due to the regulation of system voltage at this point. For this reason, the 11kV bus voltage level will be within target but not necessary the same voltage level for customers along the distribution feeders.

ENERGEX proposes adoption of system voltage monitoring based on currently available facilities (remote readable smart meters at contestable sites) as the most cost effective transitional arrangement.

ENERGEX welcomes the opportunity to work with QCA to develop systems which would be cost effective and benefit the most customers. **We see our involvement with EPRI as a way of accessing what is the world's best practice**.

3.3 Customer Service

The Authority seeks comment on:

- whether customer service should be monitored and if so which activities should be monitored;
- the appropriateness of the data fields proposed in Appendix B – item number 5;
- any additional activities and data fields which should be reported and monitored; and
- whether the Authority should monitor the activity level of voluntary guaranteed service levels or impose a set of guaranteed service levels.

ENERGEX is committed to provision of the best electricity delivery service and has developed the "people**pact"** scheme, which sets out a range of service guarantees which ENERGEX promises to meet. If our service does not meet the guarantees set out, ENERGEX will pay the customer for the inconvenience. In addition, we have also prepared service standards that do not have payment penalties but are still critical to our commitment to customer service.

ENERGEX accepts the need to be some form of customer service monitoring. The levels of customer service provided should be monitored against some set minimum standards and should include Call Centre Standards, Customer Satisfaction from survey information, etc.

Comments on appropriateness of data field are provided in Section 4.1.3

ENERGEX supports the proposal for QCA to monitor the activity level of the existing Guaranteed Service Levels (GSLs).

4 SEGMENTATION OF SERVICE QUALITY DATA

The Authority seeks comment on:

- the need for segmentation of service quality data;
- appropriate categories for segmentation; and
- appropriate definitions of segmentation categories**.**

Customer density has a direct impact on the level of service quality provided. The categorisation into CBD, urban and rural reflects the varying customer density in each category.

Segmentation of the service quality data in categories such us CBD, Urban and Rural will provide a refinement of the data and allow comparable benchmarking with other network of similarly geographic and demographic characteristics.

Definition of each category should be consistent with definitions in other Jurisdictions. The proposed definition of “CBD” as ”distribution network representing the central business districts of large cities” is rather ambiguous and needs further clarification. ENERGEX prefers a definition that describes the typical network configuration of a CBD. We proposed that the CBD category be defined as “underground mesh network with relay operated switchgear in the Central Business District”.

ENERGEX accepts that segmentation of reliability data is required and that the proposed segmentation into CBD, Urban, Rural and remote categories is appropriate.

ENERGEX proposes that the CBD be defined as ”underground mesh network with relay operated switchgear in the central business district” which in the case of ENERGEX will be confined to the CBD of Brisbane and parts of the Surfers Paradise CBD.

5 DATA COLLECTION

5.1 Possible Data Collection Framework

The Authority seeks comment on:

- the appropriateness of the proposed data collection framework and associated data fields;
- any additional data fields that should be included; and
- the appropriateness of the reporting periods proposed

ENERGEX believes that the data collection framework as outlined in ORG's "2001 Electricity Distribution Pricing Review Draft Decision" is excessive and imposes a high cost for little benefit to the regulatory regime or to customers. ENERGEX submits that the measures for reliability as described in Section 3.1.1 are adequate.

The following comments refer to the reporting specification as listed in Appendix B of the Issues Paper.

5.1.1 Reliability data

- We do not see the value in the proposal to collect and report on planned outages (Items 3.5,3.7, 3.10 and 3.12). ENERGEX's planned outages constitute less than 2% of the total energy curtailed due to the adoption of 'live line' and other similar system management practices

- We do not see the distinction between items 3.2 (Unplanned outages) and 3.8 (Unplanned Interruptions). We propose that item 3.2 should be renamed as "Unplanned Interruptions" with the definition as listed. We do not agree with the reporting of Item 3.8 as outlined in Section 3.1.1 above.

- As outlined in Section 3.1.1, we can provide momentary feeder outages based on telemetered information only and hence are unable to provide data on Item 3.4

5.1.2 Quality of Supply

- We do not agree with the proposal of collecting and reporting of "over-voltage events" for the reasons listed in Section 3.2.2

- We proposed the data fields in Item 4 of Appendix B be replaced with the proposed categories:

    - Network Related events
    - Customer Initiated events
    - No cause found

5.1.3 Customer Service

- Item 5.6 – We suggest that 2 business days be adopted. This would be consistent with the draft Standard Customer Sales Contract as proposed by the Department of Mines and Energy.

- Item 5.43 - We suggest that 3 business days be adopted. This would be consistent with our current service standard, which has proven to be satisfactory for all concerned.

ENERGEX submits that the proposed data framework is too onerous and does not address the real issue of service quality. We propose that only data relevant to the reliability indices be collected. Planned Outages are immaterial and do not add value to the performance indicators. The focus on over-voltage in quality of supply data is inappropriate and should be replaced with our proposed approach as outlined in Section 2.2.1.

ENERGEX proposes that the following reporting period be adopted:
- **Reliability data – bi-annually**
- **Quality of supply – annually**
- **Customer Service - quarterly**

5.2 Implementation Issues

The Authority seeks comment on:

- the feasibility of adopting a service quality regime based on consistent standardised data; and

- where consistent standardised data is not available, what alternative measures based on proprietary data should be adopted to establish baseline measures of service quality?

ENERGEX believes that time is a critical issue that must be considered in determining the service quality regime in Queensland. Currently, Queensland does not have any prescribed service quality measures although the Electricity Reform Unit (ERU) draft standard has been unofficially adopted.

Whilst ENERGEX prefers a nationally consistent approach in developing a common set of standards and reporting format, considerations must be given to the different environmental conditions. ENERGEX therefore supports the approach to collect a time series of some standardised data that will enable the establishment of baseline service quality standards that is appropriate for our operating environment.

ENERGEX welcomes the opportunity to work with QCA to develop a transitional arrangement on any implementation issues

ENERGEX prefers that jurisdictional regulators adopt a nationally consistent approach in developing a common set of standards and reporting format. However, considerations must to be given to the different environmental conditions that impact on the delivery service quality. The standards adopted should be limited to key aspects of service delivery that provide the most benefit to all customers.

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6. SERVICE QUALITY INCENTIVE MECHANISMS

The Authority seeks comment on the most appropriate approach to incentive regulation of service quality

I. Comparative reporting of service quality
II. Enforcement of service standards through the application of statutory penalties by the regulator
III. Price control adjustments in response to service performance
IV. Guaranteed payments
V. Legal compensation

ENERGEX agrees with QCA that the "Comparative reporting of service quality" is a simple but effective form of regulation. We currently have a Guaranteed Service Level (GSL) scheme in place and are supportive for any proposal to have the scheme monitored by the Jurisdictional Regulator.
We believe that the price control adjustments approach should only be adopted in jurisdictions where the reforms are well in
advance. ENERGEX does not believe that the current regulatory framework in Queensland has matured sufficiently to accommodate an incentive-based regulation of price control adjustment which requires the setting of service quality target levels and the introduction of penalties and rewards system. This could create potential problems where arbitrary or unreasonable standards are imposed without any considerations for regulated pricing levels and differing operating environments and where data collection is immature.

As discussed in the issues paper, the comparative reporting option is a pre-requisite of other forms of incentive and should the adopted in the coming regulatory period. The collection of a time series of consistent data will enable a more comprehensive service quality review and allow the progression to price control adjustment regulation in the next regulatory period.

ENERGEX does not believe that that current regulatory framework has matured sufficiently to accommodate the price control adjustment approach. **ENERGEX proposes that for the coming regulatory period, QCA adopts the comparative reporting (including GSL monitoring) approach. With a proper monitoring and reporting system, we can progress towards an incentive-based scheme with price control adjustment approach in the next regulatory period.**