



**ESSENTIAL SERVICES  
COMMISSION ACT 2002 -  
PART 7 INQUIRY**

**ETSA UTILITIES' NETWORK  
PERFORMANCE AND  
CUSTOMER RESPONSE  
JANUARY 2006**

**ISSUES PAPER**

**FEBRUARY 2006**



## REQUEST FOR SUBMISSIONS

The Essential Services Commission of SA (the Commission) invites written submissions from interested parties in relation to the issues raised in this paper and the Inquiry Terms of Reference. Written comments should be provided by **Friday 10 March 2006**. It is highly desirable for an electronic copy of the submission to accompany any written submission.

It is Commission policy to make all submissions publicly available via its website ([www.escosa.sa.gov.au](http://www.escosa.sa.gov.au)), except where a submission either wholly or partly contains confidential or commercially sensitive information provided on a confidential basis and appropriate prior notice has been given or where the submission contains identifying personal information.

The Commission may also exercise its discretion not to exhibit any submission based on its length or content (for example containing material that is defamatory, offensive or in breach of any law).

Responses to this paper should be directed to:

### **ETSA Utilities' Network Performance and Customer Response Inquiry Issues Paper**

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### ***Public Information about the Commission's activities***

Information about the role and activities of the Commission, including copies of latest reports and submissions, can be found on the Commission website at [www.escosa.sa.gov.au](http://www.escosa.sa.gov.au).

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# 1 INTRODUCTION

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## 1.1 Overview of the Inquiry

During the four-day period 19 to 22 January 2006, South Australia experienced a heatwave, with the day-time maximum temperature for Adelaide exceeding 40° Celsius on each of those days (hereinafter referred to as “the heatwave event”). At that same time, the electricity distribution network failed to supply electricity to all customers and some customers were not able to contact, or alternatively were not able to obtain information from, the call centre operated by ETSA Utilities.<sup>1</sup>

As a result of the heatwave event, on 31 January 2006 the Minister for Energy (hereinafter referred to as “the Minister”) referred an Inquiry pursuant to Part 7 of the *Essential Services Commission Act 2002* (hereinafter referred to as the “ESC Act”) to the Essential Services Commission (see Appendix 1). The Inquiry requires the Commission to investigate and make determinations in respect of a number of matters relating to the performance of ETSA Utilities’ electricity distribution network and customer call centre during the heatwave event.

In particular, the Terms of Reference for the Inquiry (as set out in clauses 3.1 to 3.4, as well as clause 3.6 of the Notice of Reference) are that the Commission is required by the Minister to:

- ▲ investigate the performance of the electricity distribution network operated by ETSA Utilities and the adequacy of ETSA Utilities’ response during the heatwave conditions experienced in South Australia from 19 to 22 January 2006;
- ▲ determine whether or not ETSA Utilities complied with its regulatory obligations as established under the Electricity Distribution Code and the *Electricity Act 1996*, and if those obligations should be amended in light of the heatwave conditions experienced in South Australia from 19 to 22 January 2006;
- ▲ determine if the payments available under the Guaranteed Service Level Scheme should be increased to provide increased incentives for ETSA Utilities to meet determined levels of reliability;
- ▲ determine if the performance of ETSA Utilities was consistent with good electricity industry practice as defined in the National Electricity Rules;
- ▲ make recommendations as it considers appropriate, in particular with regard to any changes that could be made to the regulatory framework to better protect South Australian consumer interests, including appropriate incentives and penalties.

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<sup>1</sup> Refer to section 1.4 for a description of ETSA Utilities and the electricity distribution network which it operates.



The Minister has also required the Commission to consider a number of particular issues in investigating and determining the matters specified by the Terms of Reference (as set out in clause 3.5 of the Notice of Reference):

- ▲ ETSA Utilities' overall management, planning and preparation of the network for periods of forecast high demand and/or extreme events likely to adversely impact the network, with a view to minimising the number and duration of customer outages during such periods;
- ▲ ETSA Utilities' specific planning and preparations in response to the forecast heatwave conditions expected from 19 to 22 January 2006, such as staffing, spares and equipment, including any contingency arrangements;
- ▲ the actual performance of the distribution network during the period, including comparisons with planning forecasts of demand;
- ▲ impacts on customers, including the number, duration and value of outages, and their customer service experience, especially as regards to the performance of the ETSA Utilities call centre;
- ▲ the adequacy of ETSA Utilities' response, including timeliness, the prioritisation of resources to minimise the extent and duration of outages and the provision of information to customers during the period;
- ▲ if the location of the ETSA Utilities call centre impacted on the performance for South Australian customers and if different performance standards should apply to the operation of this facility;
- ▲ determine if the practices of ETSA Utilities in relation to upgrades of low voltage transformers are adequate;
- ▲ ETSA Utilities' contingency planning for managing extreme events; and
- ▲ any other factors the Commission considers relevant.

## **1.2 Purpose of this Issues Paper**

As required by clause 4.1.3 of the Notice of Reference, the Commission has released this Issues Paper setting out background material to assist stakeholders wishing to comment on the Terms of Reference.

Importantly, throughout this Issues Paper the Commission has not drawn any conclusions or formed any views on matters relating to the heatwave event or the Terms of Reference and other matters required to be taken into consideration during the Inquiry.

Instead, the Commission has sought to provide a detailed background on the following matters in order that those wishing to make a submission on the Terms of Reference may do so in a manner which will best facilitate the resolution of the Inquiry:

- ▲ the nature and role of the Commission and the statutory framework relating to Inquiries undertaken by the Commission (Chapter 2);
- ▲ the Commission's present understanding of the factual matrix surrounding the heatwave event and ETSA Utilities' electricity distribution network and call centre performance (Chapter 3);
- ▲ ETSA Utilities' relevant regulatory obligations under the regulatory framework, particularly the Electricity Distribution Code and the Electricity Act 1996 (hereinafter referred to as "the Electricity Act") (Chapter 4);
- ▲ the nature of the Guaranteed Service Level Scheme as incorporated within the Electricity Distribution Code and the 2005-2010 Electricity Distribution Price Determination (Chapter 4); and
- ▲ the meaning of the term good electricity industry practice as defined in the National Electricity Rules (Chapter 4).

The Commission now invites written submissions on the Terms of Reference for the Inquiry.

Stakeholders wishing to provide information to the Commission on their personal experience during the heatwave are encouraged to do so utilising the pro-forma questionnaire included at Appendix 2.

Where possible, submissions should include data, documentation, or evidence to support the views expressed.

### **1.3 Inquiry Process**

In conducting this Inquiry, the Commission will scrutinise ETSA Utilities' preparedness and operational response to the heatwave event, and the operation and reliability of the electricity distribution network and the customer call centre. In doing so the Commission will undertake detailed investigation, assessment and analysis of the business systems and operations of ETSA Utilities. The Commission will also undertake benchmarking of the performance of those systems and operations as compared with other electricity distribution businesses.

While the Notice of Reference gives the Commission discretion as to the timetable for the Inquiry process, the Commission is keenly aware of the significance of the issues under investigation and the impacts of those issues for both South Australian consumers and ETSA Utilities. It has therefore sought to balance the need to report on the Inquiry in as short a timeframe as possible with the need to give serious and detailed consideration to all relevant matters.

Having given consideration to this issue, the Commission has determined, at this stage, that it will present its Final Report by no later than July 2006. The Commission reserves the right, however, to change this timetable if such a course of action is



necessary in order that it may make proper findings or recommendations as required by the Terms of Reference.

An indicative timetable for the Inquiry is set out below. The Commission will provide updates to the timetable on its website if required from time to time.

<b>TIMETABLE</b>	
<b>ACTION</b>	<b>BY</b>
Publish Inquiry Terms of Reference	7 February 2006
Release Issues Paper	9 February 2006
Receive submissions from stakeholders on Issues Paper and Terms of Reference	10 March 2006
Release Draft Report	April 2006
Receive submissions from stakeholders on Draft Report	May 2006
<b>Final Report</b>	<b>July 2006</b>

#### **1.4 Overview of ETSA Utilities**

ETSA Utilities is a partnership of five companies which, since 28 January 2000, have jointly held a licence under the Electricity Act to operate the main (National Electricity Market connected) distribution network in SA. The companies (each incorporated in The Bahamas) are:

- ▲ CKI Utilities Development Limited (ABN 65 090 718 880);
- ▲ HEI Utilities Development Limited (ABN 82 090 718 951);
- ▲ CKI Utilities Holdings Limited (ABN 54 091 142 380);
- ▲ HEI Utilities Holdings Limited (ABN 50 091 142 362); and
- ▲ CKI/HEI Utilities Distribution Limited (ABN 19 091 143 038).

As at 30 June 2005, ETSA Utilities supplied electricity to about 761,000 customers. It operates and maintains a network with about 80,600 km of power lines, of which about 86% is overhead. About 70% of the power lines comprising the network are operated at High Voltage (7.6 kV and above) with the remainder at Low Voltage (415/240V). The distribution network also includes 393 substations, 1,420 sub-transmission transformers, about 64,900 distribution transformers (including transformers with a low voltage secondary), and about 723,000 stobie poles.



## 2 THE COMMISSION AND ESC ACT INQUIRIES

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This Chapter sets out in some detail the nature and role of the Essential Services Commission and the regulatory regime surrounding Inquiries under Part 7 of the ESC Act. This information has been included to assist stakeholders in understanding the role which the Commission performs and the manner in which it is required to address the Terms of Reference as set out in the Notice of Reference.

### 2.1 *The Essential Services Commission*

As with all statutory authorities, the powers of the Commission are defined by statute. The Commission may therefore only exercise the powers given in furtherance of the purposes for which it was created. In general, courts have tended to define the powers of statutory bodies such as the Commission narrowly (particularly where those powers interfere with proprietary rights).

The general powers (or functions) of the Commission are defined at section 5 of the ESC Act as follows:

5. (1) *The Commission has the following functions:*
- (a) *to regulate prices and perform licensing and other functions under relevant industry regulation Acts;*
  - (b) *to monitor and enforce compliance with and promote improvement in standards and conditions of service and supply under relevant industry regulation Acts;*
  - (c) *to make, monitor the operation of, and review from time to time, codes and rules relating to the conduct or operations of a regulated industry or regulated entities;*
  - (d) *to provide and require consumer consultation processes in regulated industries and to assist consumers and others with information and other services;*
  - (e) *to advise the Minister on matters relating to the economic regulation of regulated industries, including reliability issues and service standards;*
  - (f) *to advise the Minister on any matter referred by the Minister;*
  - (g) *to administer this Act;*
  - (h) *to perform functions assigned to the Commission under this or any other Act;*
  - (i) *in appropriate cases, to prosecute offences against this Act or a relevant industry regulation Act.*

These functions, and their associated terms, represent the complete scope of matters with which the Commission may deal in the course of its activities.<sup>2</sup>

The concepts of “essential service” and “regulated industry” are important to an understanding of the role of the Commission and to the present Inquiry process. The ESC Act defines essential services to mean any of electricity services, gas services,

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<sup>2</sup> It is, however, important to note that section 5 specifically contemplates that the Commission’s role extends beyond the ESC Act itself: for example, the Commission is to perform discrete roles in relation to industry regulation Acts (section 5(1)(a)); and the Commission must perform any function given it under any Act.

water and sewerage services, maritime services, rail services, and any other services prescribed for the purpose of the definition.<sup>3</sup>

It further defines a regulated industry as a specified industry, or specified activities, concerning the provision of essential services, declared by another Act (a relevant industry regulation Act) to constitute a regulated industry for the purposes of the ESC Act.

Relevantly for the purposes of this Inquiry process, the electricity supply industry (a subset of electricity services, which is defined to mean that part of the electricity services industry involved in the generation, transmission, distribution and retailing of electricity) is declared by section 14D of the Electricity Act to be a regulated industry for the purposes of the ESC Act.<sup>4</sup>

The ESC Act specifies at section 6 a set of objectives for the Commission in the performance of its functions, as follows:

6. (1) *In performing the Commission's functions, the Commission must:*
  - (a) *have as its primary objective protection of the long term interests of South Australian consumers with respect to the price, quality and reliability of essential services; and*
  - (b) *at the same time have regard to the need to-*
    - (i) *promote competitive and fair market conduct; and*
    - (ii) *prevent misuse of monopoly or market power; and*
    - (iii) *facilitate entry into relevant markets; and*
    - (iv) *promote economic efficiency; and*
    - (v) *ensure consumers benefit from competition and efficiency; and*
    - (vi) *facilitate maintenance of the financial viability of regulated industries and the incentive for long term investment; and*
    - (vii) *promote consistency in regulation with other jurisdictions.*

The crucial element of these objectives lies in the elevation to a *primary* objective of the protection of the long-term interests of consumers. In introducing the legislation to Parliament, the Government noted that:

*a major element of the Bill is the introduction of a new primary objective. The Commission must protect the long term interests of South Australian consumers with respect to the price, quality and reliability of essential services. The long term interests of consumers are consistent with efficient and financially viable regulated industries, that have incentives for long term investment. Accordingly, the Commission must also have regard to these matters in its regulatory decisions.*<sup>5</sup>

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<sup>3</sup> No additional services have been prescribed for the purposes of this definition.

<sup>4</sup> Most of the functions of the Commission are defined in terms of regulated industries, and hence of essential services. However, broader functions are envisaged at section 5(1)(f) & (h). Indeed, it is possible for the Commission to perform functions that do not involve any essential service or regulated industry as defined under the ESC Act. For example, section 35(1) of the ESC Act provides that the Commission must conduct an Inquiry into any matter that the Minister, by written notice, refers to the Commission.

<sup>5</sup> Hansard, South Australian House of Assembly, 10 July 2002.

## **2.2 Statutory Scheme for Inquiries**

As noted above, one of the functions given to the Commission under section 5 of the ESC Act is to perform functions assigned under the ESC Act; one such function being the conduct of formal Inquiries under Part 7.

Part 7 of the ESC Act contains a statutory scheme for the conduct of Inquiries and the provisions of consequential reports by the Commission.

### **2.2.1 Conduct of Inquiries**

Section 35 of the ESC Act provides that the Commission must conduct an Inquiry when referred by written notice from the Minister.<sup>6</sup> That section also provides the Minister with powers to specify or require certain matters when referring an Inquiry.

Having received a notice from the Minister, the Commission is required by section 36 of the ESC Act to publish its own notice in a newspaper circulating generally within South Australia advising of the Inquiry and specifying certain matters (relating to purpose, timeframe and form of submissions).

In relation to this Inquiry, such a notice was published by the Commission in the Advertiser on Tuesday 7 February 2006; a copy of that notice is reproduced in Appendix 3.

Section 37 of the ESC Act provides the Commission with guidance on the conduct of an Inquiry, allowing that the Commission is not bound by the rules of evidence and may conduct the Inquiry in such a manner as it considers appropriate.

It is also specifically provided that the Commission's collection and use of information powers under Part 5 of the ESC Act apply and that the Commission may therefore require any person to provide information, answer questions or produce documents or records it might require.

### **2.2.2 Final Reports**

In terms of the Commission's final report on an Inquiry, section 38 requires both the Commission and the Minister to attend to a number of procedural matters.

The Commission must provide a copy of its final report to the Minister. As a part of that final report, the Commission must expressly identify any confidential information which might be contained within the final report.

The Minister is required to cause a copy of the final report to be laid before both Houses of Parliament within 12 sitting days after receiving the report (excluding

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<sup>6</sup> ESC Act, section 35(2).



any confidential information but noting, at the relevant location, that such information has been removed).

The Commission must then ensure that copies are available for inspection or purchase by the public.

The Commission also notes, however, that Term of Reference 4.1.6 requires it to release its Final Report to the Minister and ETSA Utilities as soon as the Commission determines appropriate, and to the public no later than 7 days after.

### **3 THE HEATWAVE EVENT**

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This Chapter sets out the Commission's present understanding of the heatwave event, in particular, the performance of ETSA Utilities' electricity distribution network and customer call centre.

The material set out in this Chapter has been compiled from information provided to the Commission by ETSA Utilities up to Friday 27 January 2006, together with some anecdotal evidence and material from other sources.

At this stage, the materials presented should be regarded as preliminary in nature and should not be taken to be findings of the Commission, as detailed investigations are still being undertaken by ETSA Utilities, and the Commission has only just commenced its own investigative processes in accordance with the Terms of Reference.

#### **3.1 Summary**

During the heatwave event, there were power outages across the State. ETSA Utilities has advised that these affected approximately 63,000 of the 760,000 electricity distribution network customers. Although power was restored to most customers within a few hours, approximately 1,000 customers experienced prolonged supply interruptions, in excess of 12 hours.

Preliminary advice provided to the Commission by the Electricity Supply Industry Planning Council (ESIPC) indicates that the actual loss of load during the heatwave event appears to have been relatively small. At the time of system peak on Friday 20 January, only about 1 MW of load was not being supplied.

ETSA Utilities has handled an average of 470,000 telephone enquiries per annum (approximately 1,200 per day) for the past five years. It has advised that its call centre handled 50,000 telephone enquiries over the 4-day period of the heatwave event. On 21 (20,000 telephone enquiries) and 22 January (18,500 telephone enquiries), callers to the call centre experienced long delays when waiting to speak to an operator. In addition, the information provided via the call centre Integrated Voice Response system (IVR) and by call centre staff was not up-to-date and accurate.

#### **3.2 The Heatwave Event**

South Australia experienced a 4-day heatwave from Thursday 19 to Sunday 22 January 2006 inclusive, with 4 successive days with maximum daytime temperatures over 40°C in the Adelaide metropolitan region.

The daytime maxima and night-time minima (as recorded at the Bureau of Meteorology's Kent Town recording station) during this period were:

**Table 1: Recorded daytime maxima and night-time minima 18-23 Jan 2006**

DAY	18/1/2006	19/1/2006	20/1/2006	21/1/2006	22/1/2006	23/1/2006
Day-time max.	---	40.2°C	41.8°C	43.1°C	40.8°C	---
Night-time min.	21.5°C	27.9°C	27.7°C	33.1°C	19.2°C	

A cool change progressively moved across the State from the west on Sunday 22 January, arriving at the metropolitan region around 2:00pm. The cool change was accompanied by strong winds and resulted in a gradual drop in temperature.

The overnight minimum of 33.1°C on Saturday 21 January was extremely high compared with the 29.9°C recorded in the last extreme heatwave (in February 2001).

Extreme temperatures were also recorded during this period over the whole of South Australia, ranging from 47.4°C at Ceduna, 45.9°C at Renmark, 40.8°C at Mount Gambier and 43.1°C at Victor Harbor.

The Commission's present understanding is that, based on the occurrence of 4 successive days with maximum temperatures in excess of 40°C, this was the most extreme heatwave event in Adelaide since 1943.

### **3.3 Supply and Demand**

On Friday, 20 January 2006, a new ETSA Utilities' electricity distribution network total peak load of 2,633 MW was recorded.<sup>7</sup> This peak exceeded the previous peak of 2,529 MW recorded in the last extreme heatwave, in February 2001. In considering the impacts of this peak load on the distribution network, it is the localised impacts which are of most relevance. In this context, ETSA Utilities has advised the Commission that:

- ▲ the total state peak was 92% of ETSA Utilities' forecast for 2006; noting that the 92% figure is consistent with a non-peak industrial load period (January) and 2 of the 4 hot days falling on a weekend;
- ▲ the metropolitan ElectraNet connection points recorded up to 91% of 2006 forecast;<sup>8</sup>
- ▲ one country ElectraNet connection point exceeded forecast (Hummocks by 5%);
- ▲ three metropolitan residential zone substations just exceeded 2006 forecast (Northfield, Blackwood and Clarence Gardens by 2-4%); and
- ▲ seven country zone substations exceeded 2006 forecast (Pyap, Loveday, Goolwa, Victor Harbor, Angle Vale, Keith and Port Augusta by 2-15%).

<sup>7</sup> The peak load reported in relation to the ETSA Utilities' distribution network is lower than that reported by ElectraNet for the entire South Australian network as ETSA Utilities' figure does not include the loads associated with customers directly connected to ElectraNet's transmission network.

<sup>8</sup> ElectraNet Pty Ltd (ANC 094 482 416), trading as ElectraNet SA, is the licensed operator of the electricity transmission network in South Australia

The relevance of these data to the supply reliability issues faced by ETSA Utilities during the heatwave lies in their usefulness in permitting an assessment of the adequacy of ETSA Utilities' distribution network to meet demand.

Under the terms of its electricity distribution licence, ETSA Utilities must comply with the technical standards set out in the National Electricity Rules (NER). In particular, the requirements relating to reliability and system security contained in Schedule 5.1 of the NER are relevant to planning for the electricity needs for South Australia.

ETSA Utilities has developed network-planning criteria based on the requirements of the NER. Forecast peak loads for future years are compared with the capacity of the network and this is used to develop a network augmentation plan.

Forecasts are based on historical peak loads and measured growth rates. The figures above indicate that loads exceeded forecast demand at various locations throughout South Australia during the heatwave. As a result, ETSA Utilities will be required to revise its load forecasts. This is something ETSA Utilities does each year after the peak load summer period as part of the normal planning process.

The Commission notes that, while the actual load exceeded the forecast load at some locations in South Australia, this does not mean that there was inadequate capacity available at these substations nor that there was shortage of electricity in South Australia. Most, if not all, of the heat related outages were very localised and not due to an electricity shortage.

The distribution demand, as highlighted by ETSA Utilities' preliminary work, was about 4% higher than in the heatwave of 2001. The peak demand was significantly below ESIPC's 10% Probability of Exceedance forecast (which is understandable given that the heatwave occurred during a holiday period) and generally below the Agreed Maximum Demand for connection points; it is noted that extreme conditions will always cause some local problems.

### ***3.4 ETSA Utilities' Electricity Distribution Network Performance***

This section sets out initial information provided to the Commission by ETSA Utilities about the performance of the distribution network during the heatwave event.

The information provided has not, at this stage, been subject to audit or independent scrutiny, nor has it been assessed against the framework of longer-term network performance.

The Commission expects more accurate data will be able to be provided by ETSA Utilities in the course of the Inquiry. However, for the purposes of explaining the general context, the impact on the distribution network and the customer service issues arising from the heatwave event, the information presently available is sufficient.

### 3.4.1 Preparedness & Operational Response

In terms of the preparedness of ETSA Utilities' electricity distribution network for events such as the heatwave event, ETSA Utilities has advised the Commission that since 2001, when the last major heatwave leading to widespread power outages occurred, approximately 1,250 upgraded distribution transformers have been installed in the metropolitan region to mitigate future potential distribution transformer overloading.

In addition, as previously reported by the Commission, ETSA Utilities reviews the reliability performance of individual feeders to determine a detailed Reliability Improvement Plan for the subsequent year.<sup>9</sup>

Finally, ETSA Utilities has advised that, prior to the 2005-06 summer period, the distribution network was prepared for possible heatwave conditions by completion of approved capacity upgrade projects, purchasing of system spares and the preparation of contingency plans and emergency response systems. ETSA Utilities has reported that these emergency systems were reviewed prior to the January 2006 heatwave event.

In terms of ETSA Utilities' operational response to the heatwave event, ETSA Utilities has advised that, prior to and during the heatwave event, various meetings of operational managers were called to discuss the logistical and staffing responses necessary to meet the forecast heat conditions on the weekend of 21 and 22 January.

ETSA Utilities has suggested that the determination of response levels was in accordance with ETSA Utilities' Emergency Procedures manual and the forecast conditions. However, ETSA Utilities has also advised the Commission that there were difficulties in sourcing additional staffing levels throughout the weekend of 21 and 22 January.

### 3.4.2 Reliability of Supply

ETSA Utilities has provided the Commission with a high-level overview of network reliability performance during the heatwave event. The key points noted by ETSA Utilities are as follows:

- ▲ although in a few isolated cases the load exceeded the 2006 forecast, no connection points or zone substations were overloaded;
- ▲ as the heatwave continued into the third and fourth day, with extreme day and night time temperatures, the number of distribution transformer and fuse supply interruptions rapidly escalated;

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<sup>9</sup> See, for example, Essential Services Commission of SA, *2004/05 Annual Performance Report: Performance of South Australian Energy Distributors*, page 21, ([http://www.escosa.sa.gov.au/webdata/resources/files/051130-APR\\_EnergyDistributors.pdf](http://www.escosa.sa.gov.au/webdata/resources/files/051130-APR_EnergyDistributors.pdf)).



- ▲ the supply restoration times for restoring distribution transformer faults and low voltage fuse operations did not meet ETSA Utilities' normal standard of performance in the greater metropolitan region; and
- ▲ the supply restoration times for distribution transformer faults and fuse operations are largely dependent on the availability of restoration crews. ETSA Utilities has advised that operational managers attempted to source additional staffing levels throughout the weekend. However, few staff are reported by ETSA Utilities to have made themselves available. The available metropolitan supply restoration crews were overwhelmed by the number of these interruptions.

### **Metropolitan Distribution Network Performance**

A summary of the metropolitan distribution network performance in the heatwave event is set out below (and includes events due to the heatwave and "normal" disturbances caused by factors such as vegetation and lightning):

- ▲ no sustained interruptions of connection points or 66kV sub-transmission lines;
- ▲ 1 zone substation lost supply for approximately 1 hour at Hillcrest (6,900 customers), due to failure of an under-frequency relay (not related to the heatwave event);
- ▲ 16 high voltage 11 kV feeders were interrupted, affecting an estimated 500-4,000 customers per event for 0.5 to 4.5 hours; 8 of these were not linked to the heatwave event;
- ▲ 14 distribution transformer faults (8 of which caused the high voltage feeder to trip), affecting an estimated 600 customers;
- ▲ 201 distribution transformer fuse operations (166 low voltage and 35 high voltage), affecting an estimated 3,800 customers; and
- ▲ additional interruptions associated with the high winds that accompanied the cool change.

ETSA Utilities provided the following commentary on the performance of its metropolitan distribution network during the heatwave event:

- ▲ the number of metropolitan high voltage feeder interruptions was above average. Of these interruptions, 8 may be linked to the heatwave (typically as a result of a distribution transformer fault).
- ▲ the number of metropolitan distribution transformer faults (14) and fuse operations (201) exceeded the average, but was considerably less than the 2001 heatwave (about 500 fuse operations). Each event affected typically 15 to 45 customers.

- ▲ preliminary analysis has shown that the supply restoration time for distribution transformer and transformer low voltage fuse operations ranged from 2 hours to 34 hours, with about 35 events exceeding 12 hours, affecting approximately 1,000 customers.

### **Country Distribution Network Performance**

A summary of the country distribution network performance in the heatwave event is detailed below (and includes events due to the heatwave and normal disturbances such as vegetation and lightning):

- ▲ no sustained interruptions of connection points or 66 kV sub-transmission lines;
- ▲ 1 zone substation (Balhannah, 14,400 customers) lost supply for approximately 1 hour, due to failure of 33 kV circuit breaker failure;
- ▲ 18 high voltage 11 kV feeders were interrupted, affecting an estimated 500-4,000 customers per event for 0.5 to 4.5 hours;
- ▲ 23 high voltage feeder sections were interrupted, affecting an estimated 2- 500 customers per event for 0.5 to 4.5 hours;
- ▲ 13 distribution transformer faults, affecting an estimated 500 customers;
- ▲ 80 distribution transformer fuse operations (53 low voltage and 27 high voltage), affecting an estimated 3,400 customers; and
- ▲ additional interruptions associated with the high winds that accompanied the cool change.

ETSA Utilities has estimated that about 50 customers located in country regions were without supply for longer than 12 hours.

### **3.4.3 Restoration of Supply**

ETSA Utilities has advised the Commission that its current estimate of the impact of all events, those due to heatwave and other causes such as vegetation and lightning, in both country and metropolitan regions, over the four day period Thursday 19 to Sunday 22 January 2006 are as detailed below:

- ▲ approximately 60,000 (8%) customers were affected by high voltage interruptions with 96% restored within 3 hours;
- ▲ approximately 4,000 (0.5%) customers were affected by high voltage transformer fuse operations (these are a subset of the 60,000 affected by high voltage interruptions) with 93% restored within 2 hours;
- ▲ approximately 3,300 (0.4%) customers were affected by low voltage interruptions with an average restoration time of 5.5 hours; and

- ▲ approximately 1,000 customers affected by low voltage interruptions did not have supply restored for 12 hours or more.

### **3.5 ETSA Utilities' Call Centre Performance**

Like other Australian distribution businesses, ETSA Utilities uses an IVR system as the primary means of providing information to the vast majority of customers who call. The provision of accurate and up-dated information via the IVR is key to any distribution business having the ability to handle the high number of customer telephone enquiries which occur during any severe weather event.

ETSA Utilities has handled an annual average of 470,000 telephone enquiries per year (approximately 1,200 per day) over the last 5 years. ETSA Utilities has advised that the call centre handled 50,000 telephone enquiries during the 4-day heatwave event.

On 21 January (20,000 telephone enquiries) and 22 January (18,500 telephone enquiries), callers to the call centre experienced long delays when waiting to speak to an operator and the information provided via the call centre IVR system and call centre staff was not up-to-date and accurate.

ETSA Utilities has advised the Commission that:

- ▲ the procedure for updating information on the IVR worked as normal on Thursday 19 and Friday 20 January; the timeliness and accuracy of the information on the IVR and provided by the call centre staff on these days was good.
- ▲ as resource constraints began to emerge on the weekend, the flow of information back to the Network Operations Centre (NOC) from the field became problematic.
- ▲ fewer crews were available to undertake the increasing workload, and with the trying physical conditions, demands on field-based personnel began to mount. As this happened, focus was on the pressing need to restore supply in an efficient and safe manner rather than on communicating the status of work back to the NOC.
- ▲ as the process for updating the IVR and the outage webpage relies on frequent and quality information from the field to the Network Operations Centre (NOC) in order to keep customers informed about the location, cause and likely duration of interruptions, on Saturday 21 and Sunday 22 January the flow of good quality information to the call centre was patchy at best.
- ▲ of particular concern to customers was the inability of the IVR or the call centre staff to provide advice as to the status of particular work and estimated restoration times, despite sometimes repeated telephone enquiries. This led to longer average talk times as customers vented their understandable frustrations to the call centre staff. This in turn led to higher average wait times for callers in the queue.



- ▲ the call centre had all available resources working throughout the weekend including staff in the back-up call centre in Melbourne.
- ▲ in addition to dealing with high call volumes, a lack of information and many irate customers, the call centre used by ETSA Utilities was also dealing with high telephone enquiry volumes for Powercor and Citipower because of the bushfires in Western Victoria, and Victorian heat wave problems.

The call centre statistics provided by ETSA Utilities are shown in the table below.

**Table 2: ETSA Utilities' Call Centre Statistics 19-22 Jan 2006**

	19TH	20TH	21ST	22ND	TOTAL
<b>A. NUMBER OF CALLS RECEIVED</b>	2,993	8,928	20,105	18,488	<b>50,514</b>
<b>B. NUMBER OF CALLS ABANDONED</b>	83	488	3,854	4,204	<b>8,629</b>
<b>(% OF CALLS ABANDONED)</b>	3%	5%	19%	23%	<b>17%</b>
<b>C. NUMBER OF CALLS ANSWERED BY IVR</b>	1,859	6,790	13,795	12,224	<b>34,668</b>
<b>D. NUMBER OF CALLS ANSWERED BY CALL CENTRE OPERATOR</b>	1,051	1,647	2,337	2,175	<b>7,210</b>
<b>E. NUMBER OF CALLS UNANSWERED</b>	N/A				
<b>F. AVERAGE WAIT TIME FOR AN OPERATOR (MIN:SEC)</b>	1:00	3:06	15:34	11:04	

Note: these call statistics are preliminary, and subject to final confirmation.

## 4 SERVICE STANDARDS FRAMEWORK

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This Chapter provides an overview of the current service standard framework (SSF) established by the Commission for the period 1 July 2005 to 30 June 2010, which regulates the level of service to be provided by ETSA Utilities in operating the electricity distribution network in South Australia.

When considering the service standards framework, there are three broad areas to consider: reliability of supply, quality of supply and customer service. While each of those concepts are explained in detail in this Chapter, they may be summarised in the following manner.

- ▲ Reliability of supply is measured by the frequency and duration of supply interruptions experienced by customers. In discussing reliability of electricity supply, it is important to note that supply interruptions experienced by customers can originate from problems at power stations, high voltage transmission lines (275 kV and 132 kV), and the lower voltage distribution network (66 kV and less).<sup>10</sup> The focus of this Inquiry, in terms of reliability of supply, is with interruptions that originate from the distribution network.
- ▲ Quality of supply is measured by deviations of voltage from specified levels.
- ▲ Customer service involves responsiveness by ETSA Utilities to telephone and written enquiries from customers, and the means by which disputes with customers are handled by ETSA Utilities.

In providing an overview, this Chapter first outlines the role of the Electricity Distribution Code and the 2005-2010 Electricity Distribution Price Determination (EDPD). The remainder of the Chapter details the key aspects of the current SSF established by the Commission.

### 4.1 Electricity Distribution Code

The current SSF for ETSA Utilities, as established by the Commission through the EDPD, is specified chiefly in the Electricity Distribution Code made by the Commission.<sup>11</sup> Compliance by ETSA Utilities with the provisions of the Electricity Distribution Code is a condition of the distribution licence held by ETSA Utilities (issued to ETSA Utilities by the Commission pursuant to Part 3 of the Electricity Act).

The Electricity Distribution Code is composed of two parts, Part A and Part B.

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<sup>10</sup> For more information on these issues, refer to the Commission's information brochure *Electricity Supply Interruptions: The Facts*, available from <http://www.escosa.sa.gov.au/webdata/resources/files/060120-D-ElectricitySupplyInterruptions.pdf>.

<sup>11</sup> Other elements of the SSF are contained in the Electricity Metering Code and Energy Customer Transfer and Consent Code as established by the Commission, and in the Electricity Act and Regulations. Codes made by the Commission that apply to electricity entities are available from <http://www.escosa.sa.gov.au/site/page.cfm?u=54#e71>.



Part A contains provisions relating to:

- ▲ the terms on which ETSA Utilities connects a customer's supply address to its distribution network, maintains that connection, and supplies the customer at that supply address from its distribution network (Chapter 1 of Part A);
- ▲ the connection of embedded generators to ETSA Utilities' network (Chapter 2 of Part A);
- ▲ the augmentation or extension of ETSA Utilities' network (Chapter 3 of Part A); and
- ▲ various schedules.

Part B of the Electricity Distribution Code constitutes the standard connection and supply contract between ETSA Utilities and each customer connected to its distribution network. The terms of this contract have been established by the Commission, and are contractually binding on ETSA Utilities and each customer in accordance with the provisions of the Electricity Act.<sup>12</sup>

#### **4.2 2005-2010 Electricity Distribution Price Determination**

In April 2005, the Commission finalised its decisions on the price controls and service standards to be applied to ETSA Utilities for the 5-year period July 2005 to June 2010. The EDPD balanced the need to keep electricity distribution prices as low as possible with the need to provide ETSA Utilities with sufficient funds to deliver safe and reliable electricity supplies, to invest in the maintenance and improvement of the distribution network across the State, to replace ageing infrastructure and to provide incentives for demand management.<sup>13</sup>

There is, of course, an inevitable trade-off between prices and the level of services delivered to customers. The EDPD considered prices and service levels as a package. Prices have been established that are commensurate with the levels of service (reliability and quality of supply, and customer service) that ETSA Utilities is expected to provide.

The EDPD utilises an "incentive-based" form of regulation, in accordance with the legislative framework within which that price determination was made. This means that the Commission has sought to provide ETSA Utilities with incentives to achieve efficiency gains in the provision of electricity distribution services, thereby providing scope for future price reductions. However, such gains must not be achieved at the expense of the level of services provided to customers, and it is therefore vital that service levels being delivered by ETSA Utilities are closely monitored by the Commission.

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<sup>12</sup> Electricity Act, s. 36

<sup>13</sup> The EDPD, and other documents associated with the process leading up to its finalisation, are available from <http://www.escosa.sa.gov.au/site/page.cfm?u=163>.

The current SSF was developed over a three-year period from 2003 as a part of the EDPD process and, as was the case for the rest of the EDPD, involved extensive public consultation. In particular, the development of the SSF was guided by the outcomes of a consumer survey on behalf of the Commission, which provided information on those aspects of service most valued by consumers and their willingness to pay for these services.<sup>14</sup>

Among its key findings, the survey revealed that around 85% of consumers were satisfied with their existing level of service and were generally unwilling to pay for improvements in these levels. The findings did not support the funding of initiatives to achieve improvements in average service levels across the entire consumer base but rather indicated a willingness to pay for improvements in service to poorly served consumers.

### 4.3 Average Standards

The SSF contains a set of what are termed *average service standards*, or standards that are expressed in terms of the average performance provided to customers in a particular region of the ETSA Utilities network over a 12-month period. These are contained in clause 1.2 of Part A of the Electricity Distribution Code. The average standards underpin the distribution prices that ETSA Utilities charges its customers.

#### 4.3.1 Customer Service

Customer Service is measured by such attributes as timeliness of responses to telephone and written enquiries, and timeliness in providing written explanations for interruptions to supply after customer requests.

Clause 1.2.2 of Part A of the Electricity Distribution Code specifies that ETSA Utilities must use its best endeavours to achieve the level of customer service during each year (ending 30 June) as specified in Table 3. Each of these standards involves performance averaged across all customers that have made the specified form of enquiry. Thus, for example, ETSA Utilities must employ best endeavours to ensure that at least 85% of all telephone calls are answered within 30 seconds.

**Table 3: Customer Service Average Standards**

DESCRIPTION OF MEASURE	STANDARD
Time to respond to telephone calls	85% within 30 seconds (including calls after a major outage event)
Time to respond to written enquiries	95% within 5 business days
Time to provide written explanation for interruptions to supply	85% within 20 business days

<sup>14</sup> Refer *Consumer Preferences for Electricity Service Standards*, March 2003, KPMG, available from [www.escosa.sa.gov.au/resources/documents/030409-R-Final\\_CSRReport.pdf](http://www.escosa.sa.gov.au/resources/documents/030409-R-Final_CSRReport.pdf).

There are some key issues associated with interpretation of these standards and assessment of the performance of ETSA Utilities in meeting these standards:

- ▲ The term best endeavours is defined in the Electricity Distribution Code as *“to act in good faith and use all reasonable efforts, skill and resources”*.
- ▲ In relation to telephone responsiveness, all appropriate telephone numbers through which customers might make enquiries of ETSA Utilities are required to be included in the assessment of performance, including the Power Failures & Emergencies 24 hour line (13 1366). ETSA Utilities (as with all electricity distributors) operates an IVR system that processes telephone enquiries by providing information (e.g. in relation to the status of restoration of supply following an interruption) or directing telephone enquiries to an operator. When a caller selects an IVR option that involves speaking to an operator, the call is considered answered only when responded to by the operator.
- ▲ The Electricity Distribution Code classifies a call as being answered within 30 seconds where the customer receives information from the IVR system and does not elect to speak to an operator. This classification within the Electricity Distribution Code recognises that electricity distribution businesses can only respond to large volumes of telephone enquiries by use of an IVR.
- ▲ There is no provision for exclusions due to a major outage event (e.g. associated with extreme weather conditions) in the measurement of telephone performance. Under such conditions, an electricity distributor’s call centre may become overloaded as thousands of customers seek to ascertain how long their supply will be interrupted.

### 4.3.2 Reliability

Reliability performance (as measured by the frequency and duration of supply interruptions experienced by customers) is a key part of the SSF. Clause 1.2.3 of Part A of the Electricity Distribution Code specifies that ETSA Utilities must use its best endeavours to achieve the reliability standards specified in Table 4 and Table 5 during each year (ending 30 June).<sup>15</sup>

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<sup>15</sup> These standards are based on the performance averaged across all customers connected to the ETSA Utilities network within the specified regions. They were determined during the process of finalising the EDPD on the basis of historical reliability performance applying over the period 2000/01 – 2003/04. The regions are as defined in maps contained in Schedule 4 of Part A of the Electricity Distribution Code.



**Table 4: SAIDI and SAIFI Average Standards**

REGION	SAIDI (MINUTES)	SAIFI (INTERRUPTIONS)
Adelaide Business Area	25	0.30
Major Metropolitan Areas	115	1.40
Barossa/Mid-Nth & Yorke Pen./Riverland/Murrayland	240	2.10
Eastern Hills/Fleurieu Peninsula	350	3.30
Upper North & Eyre Peninsula	370	2.50
South East	330	2.70
Kangaroo Island <sup>16</sup>	450	N/A

The term SAIDI refers to the average minutes off supply per customer per annum for the given region.<sup>17</sup> The term SAIFI refers to the average number of supply interruptions per customer per annum for the given region.

Using the Major Metropolitan Areas<sup>18</sup> category by way of example, Table 4 shows that ETSA Utilities must use best endeavours to ensure that the average duration of interruptions experienced by customers per annum does not exceed 115 mins, while the average number of interruptions experienced by customers per annum does not exceed 1.4.

The calculation of SAIDI and SAIFI requires an estimate of the number of customers affected by each interruption as well as an estimate of the duration of each interruption. In relation to the number of customers affected, ETSA Utilities has recently installed a sophisticated Outage Management System (OMS) that will assist in accurate estimation of this parameter for each interruption. The duration is estimated as the difference between the start time for the interruption (as reported by a customer) and the restoration time (as reported by field crews).

The ratio of SAIDI to SAIFI provides an estimate of what might be considered as an appropriate average time to restore supply for each interruption in the specified region of Table 4 (e.g. about 80 min for the Major Metropolitan Areas). In developing the SSF, however, the Commission considered it important to specify a standard for time to restore supply that encompassed the majority (e.g. 80% and 90%) of interruptions occurring within a specified region, as shown in Table 5.

<sup>16</sup> The determination of reliability performance standards for Kangaroo Island was the subject of a review process not directly linked to the EDPD (refer <http://www.escosa.sa.gov.au/site/page.cfm?u=27&c=685>). As part of this process, it was determined to be inappropriate to establish a separate SAIFI standard for Kangaroo Island.

<sup>17</sup> The standards of Table 4 include all interruptions of > 30 secs duration on the high voltage and low voltage networks operated by ETSA Utilities. However, momentary interruptions (duration < 30 secs) are excluded.

<sup>18</sup> This includes the Greater Adelaide Metropolitan Area as well as the regional areas of Pt Lincoln, Whyalla, Pt Augusta, Mt Barker and Mt Gambier.

**Table 5: “Time to Restore Supply” Average Standards**

SUPPLY RESTORATION TIMES FOR:	PROPOSED STANDARD
Adelaide Business Area	90% within 2 hours 95% within 3 hours
Major Metropolitan Areas	80% within 2 hours 90% within 3 hours
Barossa/Mid North & Yorke Peninsula/ Riverland/Murrayland	80% within 3 hours 90% within 5 hours
Eastern Hills/Fleurieu Peninsula	80% within 3 hours 90% within 4 hours
Upper North/Eyre Peninsula	80% within 4 hours 90% within 6 hours
South East	80% within 4 hours 90% within 5 hours

Thus, for the Major Metropolitan Areas, the standard is that 80% of interruptions per annum should be restored within 2 hours and 90% within 3 hours.

It is noted that the data on which the standards of Table 5 are based did not include low voltage interruptions, i.e. are based solely on high voltage interruptions.<sup>19</sup> This is because, prior to the advent of the OMS, ETSA Utilities had only limited capability to measure the impact of low voltage interruptions.

From time to time it is necessary for ETSA Utilities to undertake planned interruptions of supply to customers. This may be necessary to enable ETSA Utilities to undertake maintenance, augmentations and extensions on the network, to connect a new supply address, for emergency purposes and for other reasons. Procedures for carrying out planned interruptions are dealt with at clauses 1.2.3.2 to 1.2.3.5 of the Electricity Distribution Code. In particular, ETSA Utilities is required to give at least 4 business days’ notice to each customer affected by a planned interruption.

The standards in Table 4 incorporate an allowance for planned interruptions. Typically, about 10% of an annual SAIDI figure for a region is caused by planned interruptions. The standards of Table 5, however, do not incorporate planned interruptions.

The comments made in 4.3.1 above concerning interpretation of the term best endeavours for the purposes of customer service standards apply equally to the reliability standards as detailed in Table 4 and Table 5.

The Commission’s assessment of the reliability performance of ETSA Utilities over the regulatory period ending in June 2005 has shown that achievement of the annual reliability performance standards of the type outlined in Table 4 and Table 5 is very dependent on the number and extent of severe weather events

<sup>19</sup> For the standards of Table 4, the impacts of low voltage interruptions have been incorporated by means of an approximation.

impacting on the network during that year.<sup>20</sup> In its 2004/05 Performance Report for Energy Distributors, the Commission noted (section 3.2.2) that

*The Commission has no evidence to suggest that ETSA Utilities did not apply a best endeavours approach to meeting the relevant standards. Nevertheless, in its future assessment of this matter, the Commission will pay particular attention to the manner in which ETSA Utilities seeks to maintain network reliability during severe weather events.*

### 4.3.3 Quality of Supply

Quality of supply concerns voltage occurring at a customer's supply address and at other points on the network. Clause 1.2.4 of Part A of the Electricity Distribution Code specifies that the distribution network must be designed, installed, operated and maintained such that voltage standards as specified in Table 6 are maintained.

**Table 6: Quality of Supply**

DESCRIPTION OF MEASURE	STANDARD
Voltage	As set out in AS60038
Voltage fluctuations	Within limits as set out in AS/NZS 61000 Parts 3.3 and 3.5 and AS2279 Part 4
Harmonic voltage distortions	Do not exceed values in AS/NZS 61000 Part 3.2 and AS2279 Part 2 and as set out in the schedule to the standard connection and supply contract
Voltage unbalance factor in 3 phase supplies	Do not exceed values in the schedule to the standard connection and supply contract
Interference	Less than limits set out in AS/NZS 61000 Part 3.5 and AS/NZS 2344

## 4.4 Service Incentive Scheme

As noted earlier in this Chapter, a survey undertaken for the Commission of consumer preferences for improvements in electricity distribution services suggested that a significant proportion of consumers, around 85%, were satisfied with their existing level of supply reliability. Conversely, around 15% of consumers were dissatisfied with their reliability of supply.

The Commission therefore formed the view, as expressed in Part A of the EDPD, that it was appropriate to provide a financial incentive for ETSA Utilities to improve service to the worst served consumers comprising approximately 15% of the customer base. A penalty would apply if performance worsened beyond established benchmarks. It also

<sup>20</sup> Refer, for example, Essential Services Commission of SA, *2004/05 Annual Performance Report: Performance of South Australian Energy Distributors*, November 2005, section 3.2.2.6 ([http://www.escosa.sa.gov.au/webdata/resources/files/051130-APR\\_EnergyDistributors.pdf](http://www.escosa.sa.gov.au/webdata/resources/files/051130-APR_EnergyDistributors.pdf)).



concluded that the measures to be incorporated into the Service Incentive (SI) scheme should be based on reliability performance and telephone responsiveness.

The reliability component of the SI scheme involves an examination of feeders (components of the distribution network) that have experienced 2 consecutive years of 3 or more interruptions or 180 mins off supply. On the basis of historical performance, 18% of customers of ETSA Utilities meet this criterion, a result that is consistent with the intent of focussing on the worst served 15% of customers.

The telephone responsiveness component of the SI scheme involves an examination of the proportion of calls answered in 30 seconds, with a baseline target of 85% (equivalent to recent historical performance).

Schedule 2 of Part A of the Electricity Distribution Code specifies the manner in which ETSA Utilities will calculate its entitlement to incentive points under the SI scheme for each of the calendar years 2005 –2009. This entitlement is then incorporated into the annual revenue adjustment for ETSA Utilities that occurs in accordance with the EDPD on 1 July each year, commencing from 1 July 2006. The total financial incentive for the SI scheme has been capped at ±\$37.5 million, which represents about ±1.6% of ETSA Utilities' prescribed distribution revenue over a five-year period.<sup>21</sup>

#### **4.5 Guaranteed Service Levels**

Both the average standards (section 4.3) and the SI scheme (section 4.4) involve an assessment of ETSA Utilities' performance as experienced by a group of customers (e.g. performance averaged across customers in the Major Metropolitan Areas, or the worst served 15% of customers). Neither relates directly to service as experienced by individual customers. The third major component of the SSF for ETSA Utilities, the Guaranteed Service Level (GSL) scheme, involves service provided by ETSA Utilities to individual customers.

For this reason, the GSL scheme is established within Part B of the Electricity Distribution Code (the standard connection and supply contract) and ETSA Utilities is contractually obliged to meet the relevant obligations relating to the GSL scheme for each customer connected to the distribution network.

Clause 5.3 of Part B of the Electricity Distribution Code establishes GSLs relating to:

- ▲ timeliness of an appointment with a customer (5.3(a));
- ▲ timeliness of connection of a new supply address (5.3(b));
- ▲ timeliness of repairing street lights that have gone out and for which ETSA Utilities is responsible (5.3(c)); and
- ▲ minimising the frequency and duration of supply interruptions (5.3(d)).

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<sup>21</sup> See 2005-2010 Electricity Distribution Price Determination, Part B, Schedule 3, clause 3.1(k).

The first 3 of these GSLs were implemented when the Electricity Distribution Code was made in October 1999. The reliability-based GSLs were developed during the process of finalising the EDPD and took effect from 1 July 2005.

In clause 5.3(d) of the standard connection and supply contract, ETSA Utilities commits to “do our best to minimise the frequency and duration of supply interruptions to your supply address”. It commits to make payments to the affected customers if the frequency of interruptions or duration of any single interruption exceeds the thresholds set out in Table 7 (frequency) and Table 8 (duration).

**Table 7: Thresholds and payment amounts – frequency of interruptions**

	THRESHOLD 1	THRESHOLD 2	THRESHOLD 3
No. of interruptions per annum	>9 and ≤12	>12 and ≤15	>15
Payment per annum	\$80	\$120	\$160

**Table 8: Thresholds and payment amounts – duration of a single interruption**

	THRESHOLD 1	THRESHOLD 2	THRESHOLD 3
Duration (hrs)	>12 and ≤15	>15 and ≤18	>18
Payment per event	\$80	\$120	\$160

The EDPD suggested that the total amount of payments that ETSA Utilities was expected to make each year for these two reliability-based GSLs, based on current customer numbers, was approximately \$1.2m (around 0.2% of annual distribution revenue). This amount was incorporated into ETSA Utilities’ regulated revenue base for prescribed services.

If ETSA Utilities is able to improve service to the worst served customers and keep GSL payments below this amount, then it will be able to retain the benefit of avoided payments. On the other hand, it will be penalised by having to make more than expected GSL payments if reliability performance is below that forecast.

ETSA Utilities is required to make frequency of interruptions GSL payments to the affected customers in the quarter following the completion of the regulatory year (ending 30 June). Duration of interruptions GSL payments are required to be made within 3 months of the event occurring.

The Commission notes that the reliability-based GSL scheme is only feasible if ETSA Utilities is able to identify accurately the customers affected by supply interruptions. The OMS technology (refer 4.3.2 above) is intended to provide this capability to ETSA Utilities. The Commission is aware that during 2005/06 there have been some transitional issues associated with the OMS operations and hence with the identification of customers to whom ETSA Utilities is contractually bound to make GSL payments.

## **4.6 Good Electricity Industry Practice**

A further important aspect of the SSF for ETSA Utilities, and a Term of Reference in the past Inquiry, relates to the concept of good electricity industry practice.

ETSA Utilities is able to charge customers for prescribed distribution services in accordance with the EDPD. Prescribed distribution services include basic network and connection services, and the EDPD stipulates that such services are to be provided in accordance with provisions of the Electricity Distribution Code, Electricity Metering Code and other applicable laws, and using good electricity industry practice. The NER define good electricity industry practice (GEIP) as:

*The exercise of that degree of skill, diligence, prudence and foresight that reasonably would be expected from a significant proportion of operators of facilities forming part of the power system for the generation, transmission or supply of electricity under conditions comparable to those applicable to the relevant facility consistent with applicable regulatory instruments, reliability, safety and environmental protection. The determination of comparable conditions is to take into account factors such as the relative size, duty, age and technological status of the relevant facility and the applicable regulatory instruments.*

A determination of whether or not specific practices of ETSA Utilities are in accordance with GEIP for the purposes of the Inquiry will require a comparison of those practices with comparable practices in other Australian electricity distributors.

## 5 NEXT STEPS

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This Issues Paper has been prepared and released by the Commission in accordance with clause 4.1.3 of the Notice of Reference (refer Appendix 1) to assist those who are interested in taking part in the Inquiry process.

The Commission invites written submissions on the Terms of Reference for the Inquiry, having regard to relevant matters, on or before the close of business on **Friday 10 March 2006**. Where possible, submissions should include data, documentation, or evidence to support the views expressed.

To assist South Australian consumers to advise the Commission of the personal impacts of the heatwave event, a pro-forma questionnaire has been developed and is attached at Appendix 2.

In April 2006, the Commission will release a Draft Report, based on analysis and investigations undertaken by the Commission, as informed by submissions provided to it by stakeholders and ETSA Utilities.

The Commission will consider any comments received on the Draft Report and prepare a Final Report to the Minister by July 2006.

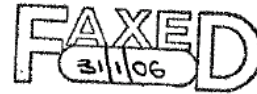




## APPENDIX 1 – TERMS OF REFERENCE

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Essential Services Commission Act 2002  
NOTICE OF REFERENCE UNDER PART 7



ETSA Utilities Network Performance and Customer Response – January 2006

### 1. BACKGROUND:

- 1.1. Pursuant to Part 7 of the *Essential Services Commission Act 2002* (“**the Act**”) an industry Minister may, by written notice, refer any matter to the Essential Services Commission of South Australia (“**the Commission**”) for the Commission to conduct an investigation into that matter.
- 1.2. By virtue of section 14D of the *Electricity Act 1996*, the electricity industry is a regulated industry for the purposes of Part 7 of the Act.
- 1.3. The Hon Patrick Conlon, Minister for Energy (“**the Minister**”) is the Minister administering the *Electricity Act 1996*.
- 1.4. During the period 19 to 22 January 2006, failures in the distribution network meant that large numbers of customers were without power during a period of extreme heat, with a significant number of customers being without power for extended periods of time, in some instances for periods well in excess of 30 hours. In addition, the performance of ETSA Utilities information provision to customers, especially those without power during the period, including the role of the ETSA Utilities call centre, was less than adequate.
- 1.5. This follows the events of August 2005, where a significant number of customers were also without power for extended periods of time and similarly there was a failure of ETSA Utilities communication systems.

### 2. REFERENCE:

I, PATRICK CONLON, Minister for Energy, hereby refer to the Commission the matter described in the Terms of Reference for the Commission to investigate pursuant to Part 7 of the Act, in accordance with the Terms of Reference specified below:

### 3. TERMS OF REFERENCE:

The following are the Terms of Reference for the inquiry specified pursuant to section 35 of the Act:

- 3.1. The Commission is to investigate the performance of the distribution network and the adequacy of ETSA Utilities response during the heatwave conditions experienced in South Australia from 19 to 22 January 2006;
- 3.2. Determine whether or not ETSA Utilities complied with its regulatory obligations as established under the Electricity Distribution Code and the *Electricity Act 1996* and if those obligations should be amended in light of this event;

- 3.3. Determine if the payments available under the Guarantee Service Level Scheme should be increased to provide increased incentives for ETSA Utilities to meet determined levels of reliability;
- 3.4. Determine if the performance of ETSA Utilities was consistent with *good electricity industry practice* as defined in the National Electricity Rules;
- 3.5. In undertaking this inquiry, the Commission should consider:
  - 3.5.1. ETSA Utilities overall management, planning and preparation of the network for periods of forecast high demand and/or extreme events likely to adversely impact the network, with a view to minimising the number and duration of customer outages during such periods;
  - 3.5.2. ETSA Utilities specific planning and preparations in response to the forecast heatwave conditions expected from 19 to 22 January 2006, such as staffing, spares and equipment, including any contingency arrangements;
  - 3.5.3. the actual performance of the distribution network during the period, including comparisons with planning forecasts of demand;
  - 3.5.4. impacts on customers, including the number, duration and value of outages, and their customer service experience, especially as regards to the performance of the ETSA Utilities call centre;
  - 3.5.5. the adequacy of ETSA Utilities response, including timeliness, the prioritisation of resources to minimise the extent and duration of outages and the provision of information to customers during the period;
  - 3.5.6. if the location of the ETSA Utilities call centre impacted on the performance for South Australian customers and if different performance standards should apply to the operation of this facility;
  - 3.5.7. Determine if the practices of ETSA Utilities in relation to upgrades of low voltage transformers are adequate;
  - 3.5.8. ETSA Utilities contingency planning for managing extreme events; and
  - 3.5.9. any other factors the Commission considers relevant.
- 3.6. The Commission should make recommendations as it considers appropriate, in particular with regard to any changes that could be made to the regulatory framework to better protect South Australian consumer interests, including appropriate incentives and penalties.

#### 4. CONDUCT OF INQUIRY:

- 4.1. Following the receipt of these Terms of Reference, the Commission's inquiry process shall consist of at least the following:
  - 4.1.1. the publication of a notice of inquiry, as required pursuant to section 36 of the Act, no later than 7 days following receipt of these terms of reference;
  - 4.1.2. an opportunity for public submissions to the inquiry;
  - 4.1.3. the release of an Issues Paper as early as the Commission determines

- 3 -

- 4.1.4. the release of a draft report to the Minister and ETSA Utilities for comment no later than one week prior to the public release of the draft report;
- 4.1.5. the release of the draft report; and
- 4.1.6. the submission of a final report to the Minister and ETSA Utilities as soon as the Commission determines is appropriate and to the public no later than 7 days thereafter.



**HON PATRICK CONLON MP**  
Minister for Energy

31 January 2006



## APPENDIX 2 – QUESTIONNAIRE FOR AFFECTED CUSTOMERS

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### - JANUARY 2006 HEATWAVE INQUIRY - SA ELECTRICITY CUSTOMER QUESTIONNAIRE

This questionnaire is designed to assist the Commission to obtain a consistent set of data on the experiences of customers who were affected by sustained outages or voltage problems during the heatwave event from January 19<sup>th</sup> to 22<sup>nd</sup>, 2006. Space is also provided for general comments.

The Commission recognises that you may not recall or be in a position to provide the precise details of any incidents. Where this is the case, you are encouraged to provide your best estimates of events and times, indicating that it is an estimate that you are providing. Also, you are not required to complete every page, although the more information that you are able to provide, the better the understanding the Commission will gain of the extent and impact on you of the heatwave supply problems.

Importantly, while this questionnaire seeks certain personal information about you (name, address, contact details), this information is only sought for the purpose of verifying the data you provide and to enable this data to be cross-referenced to the area of outage. The information will not be used for any purpose other than the January 2006 Heatwave Inquiry.

The Commission has released an Issues Paper to provide information to assist persons making submissions. A copy of the Issues Paper is available on the Commission's website at [www.escosa.sa.gov.au](http://www.escosa.sa.gov.au), or by contacting the Commission on the telephone numbers below.

Should you like assistance in completing this questionnaire, please ring the Commission on (08) 8463 4444 or Freecall 1800 633 592.

#### **Contact Details**

Name:

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Address of affected

property: (No. & Street)

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Suburb:

Postcode:

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Main use of affected property ( tick one box)

Residential

Business

Other

<input type="checkbox"/>
<input type="checkbox"/>

<input type="checkbox"/>
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Daytime Telephone Number:

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Email Address:

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### **ELECTRICITY OUTAGES/ VOLTAGE VARIATIONS**

During the heatwave event of 19-22 January, you may have experienced either an **outage** (a complete loss of supply) or **voltage problem** (e.g. dim lights, reduced TV screen size, or the loss of one phase of your 2 or 3 phase supply, where some electrical equipment did not work, but other equipment did). Could you please provide details distinguishing between these types of electricity supply problems?

The heatwave event is deemed to cover the 96-hour period, commencing 12.00am on Thursday, 19 January 2006 and concluding 11.59 pm on Sunday, 22 January 2006.

If more than one incident occurred during the period, please provide separate details for each incident. Details should only be provided for incidents with duration of more than 30 seconds.

Details	1 <sup>st</sup> incident	2 <sup>nd</sup> incident (if any)	3 <sup>rd</sup> incident (if any)
Type of incident ( <b>outage</b> or <b>voltage problem</b> )	..... (state outage or voltage problem)	..... (state outage or voltage problem)	..... (state outage or voltage problem)
Date of incident	.....	.....	.....
Time of outage/voltage incident (approximate)	..... am / pm <sup>1</sup>	..... am / pm <sup>1</sup>	..... am / pm <sup>1</sup>
Date supply restored to normal	.....	.....	.....
Time supply restored to normal (approximate)	..... am / pm <sup>1</sup>	..... am / pm <sup>1</sup>	..... am / pm <sup>1</sup>
Duration (approximate)	..... min / hr <sup>2</sup>	..... min / hr <sup>2</sup>	..... min / hr <sup>2</sup>

**Notes for completion of questionnaire:**

- 1 please provide an estimate of the time and then circle 'am' (morning) or 'pm' (afternoon/evening) as appropriate.
- 2 please provide an estimate of the time taken to fix the problem and then circle 'min.' (minutes) or 'hr' (hours) as appropriate.

**Please provide details of any further outages/voltage problems here:**

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## **CALL CENTRE RESPONSE**

Please record details here of any telephone calls to, or attempt to make contact with, ETSA Utilities. You may have made more than one call in relation to each outage or voltage problem, and the Commission also seeks the details of such additional calls.

<b>Details</b>	<b>1<sup>st</sup> call</b>	<b>2<sup>nd</sup> call</b>	<b>3<sup>rd</sup> call</b>	<b>4<sup>th</sup> call</b>
Date of call	.....	.....	.....	.....
Time of call (approximate)	..... am/pm <sup>3</sup>	..... am/pm <sup>3</sup>	..... am/pm <sup>3</sup>	..... am/pm <sup>3</sup>
Phone number used (if known)	.....	.....	.....	.....
Was your call answered by either an automated voice system (IVR) or an operator? <i>(If no, then it is expected that you would have heard a busy or engaged signal)</i>	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>
If you received an engaged or busy signal, how many attempts (further calls) did you make before your call was finally answered?	.....	.....	.....	.....
How long did it take to get your call answered? <sup>5</sup>	..... min / hr <sup>6</sup>	..... min / hr <sup>6</sup>	..... min / hr <sup>6</sup>	..... min / hr <sup>6</sup>
Did the automated answering service correctly recognise that there were supply problems in your area?	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>
Do you consider the information supplied by the automated answering service to be sufficient ?	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>
Did you seek to talk to an operator?	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>
-if yes, time taken for call to be answered by the operator (approximately)	..... min / hr <sup>6</sup>	..... min / hr <sup>6</sup>	..... min / hr <sup>6</sup>	..... min / hr <sup>6</sup>
Were you satisfied with the information received from the operator?	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>
Did you hang up at anytime before receiving the information sought?	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>	Yes/ No <sup>4</sup>

### **Notes for completion of questionnaire:**

- 3 relates to first attempt in the case of a call not being answered. Please provide an estimate of the time and then circle 'am' (morning) or 'pm' (afternoon/evening) as appropriate.
- 4 please circle 'Yes' or 'No'.
- 5 for calls not answered in the first instance, this question is asking for the approximate time between when you first called until when you had your call finally answered.
- 6 please circle 'min.' (minutes) or 'hr' (hours) as appropriate.

**Total number of calls made to ETSA Utilities during heat wave (approx.) .....**

**Please provide details of any additional telephone calls made and/or any comments you may wish to make concerning the accuracy of the information provided by ETSA Utilities here:**

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**DAMAGES SUFFERED**

The following information sought is designed to inform the Commission on the impact of the heatwave incidents on customers. **It is not a mechanism for managing compensation claims on behalf of customers.** Customers considering that they have a claim against ETSA Utilities for damages or losses must contact ETSA Utilities directly and provide supporting information.

**Damages**

Did you suffer any damages/losses associated with the supply incidents? Yes  No

If yes, please complete the following:

Loss of Food	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Approx value	\$ <input type="text"/>
Damaged equipment	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Approx value	\$ <input type="text"/>
Other (specify).....	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Approx value	\$ <input type="text"/>
.....			Approx value	\$ <input type="text"/>
.....			Approx value	\$ <input type="text"/>

**Guaranteed Service Level (GSL) Entitlements**

Customers experiencing outages of more than 12 hours duration are entitled to Guaranteed Service Level (GSL) payments.

Has ETSA Utilities sent you correspondence concerning GSL payments? Yes  No

Have you received any GSL payments from ETSA Utilities? Yes  No



### **GENERAL COMMENTS**

This section invites any general comments you may wish to make concerning the impact of electricity supply interruption incidents associated with the January 2006 heatwave event.

**Please provide any general comments here, or if you prefer, attach a separate note or letter:**

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### **Return of Questionnaires**

Questionnaires should be returned to the Commission by **no later than Friday, 10 March 2006**, by one of the following means:

- Post:** January 2006 Heatwave Inquiry – SA Electricity Customer Questionnaire  
Essential Services Commission of SA  
GPO Box 2605  
Adelaide SA 5001
- Email:** [escosa@escosa.sa.gov.au](mailto:escosa@escosa.sa.gov.au)
- Fax:** (08) 8463 4449



## APPENDIX 3 – PUBLIC NOTICE

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The following information was published in the Advertiser (page 14) on Tuesday 7 February 2006



### **Inquiry into ETSA Utilities Network Performance and Customer Response January 2006**

From 19-22 January 2006 there were power outages affecting a significant number of electricity distribution network customers. Some customers experienced prolonged supply interruptions and delays and difficulties in contacting, or obtaining information from, ETSA Utilities.

In response to these events, the Minister for Energy has referred to the Essential Services Commission of SA (the Commission) an Inquiry under Part 7 of the *Essential Services Commission Act 2002*. The Terms of Reference of the Inquiry are set out below:

#### ***Essential Services Commission Act 2002***

Notice of Reference Under Part 7

#### **ETSA Utilities Network Performance and Customer Response – January 2006**

##### **1. REFERENCE:**

I, PATRICK CONLON, Minister for Energy, hereby refer to the Commission the matter described in the Terms of Reference for the Commission to investigate pursuant to Part 7 of the Act, in accordance with the Terms of Reference specified below:

##### **2. TERMS OF REFERENCE:**

The following are the Terms of Reference for the inquiry specified pursuant to section 35 of the Act:

- 2.1. The Commission is to investigate the performance of the distribution network and the adequacy of ETSA Utilities response during the heatwave conditions experienced in South Australia from 19 to 22 January 2006;

- 2.2. Determine whether or not ETSA Utilities complied with its regulatory obligations as established under the Electricity Distribution Code and the *Electricity Act 1996* and if those obligations should be amended in light of this event;
- 2.3. Determine if the payments available under the Guarantee Service Level Scheme should be increased to provide increased incentives for ETSA Utilities to meet determined levels of reliability;
- 2.4. Determine if the performance of ETSA Utilities was consistent with *good electricity industry practice* as defined in the National Electricity Rules;
- 2.5. In undertaking this inquiry, the Commission should consider:
  - 2.5.1. ETSA Utilities overall management, planning and preparation of the network for periods of forecast high demand and/or extreme events likely to adversely impact the network, with a view to minimising the number and duration of customer outages during such periods;
  - 2.5.2. ETSA Utilities specific planning and preparations in response to the forecast heatwave conditions expected from 19 to 22 January 2006, such as staffing, spares and equipment, including any contingency arrangements;
  - 2.5.3. the actual performance of the distribution network during the period, including comparisons with planning forecasts of demand;
  - 2.5.4. impacts on customers, including the number, duration and value of outages, and their customer service experience, especially as regards to the performance of the ETSA Utilities call centre;
  - 2.5.5. the adequacy of ETSA Utilities response, including timeliness, the prioritisation of resources to minimise the extent and duration of outages and the provision of information to customers during the period;
  - 2.5.6. if the location of the ETSA Utilities call centre impacted on the performance for South Australian customers and if different performance standards should apply to the operation of this facility;
  - 2.5.7. Determine if the practices of ETSA Utilities in relation to upgrades of low voltage transformers are adequate;
  - 2.5.8. ETSA Utilities contingency planning for managing extreme events; and
  - 2.5.9. any other factors the Commission considers relevant.
- 2.6. The Commission should make recommendations as it considers appropriate, in particular with regard to any changes that could be made to the regulatory framework to better protect South Australian consumer interests, including appropriate incentives and penalties.

**3. CONDUCT OF INQUIRY:**

- 3.1. Following the receipt of these Terms of Reference, the Commission's inquiry process shall consist of at least the following:
- 3.1.1. the publication of a notice of inquiry, as required pursuant to section 36 of the Act, no later than 7 days following receipt of these terms of reference;
  - 3.1.2. an opportunity for public submissions to the inquiry;
  - 3.1.3. the release of an Issues Paper as early as the Commission determines
  - 3.1.4. the release of a draft report to the Minister and ETSA Utilities for comment no later than one week prior to the public release of the draft report;
  - 3.1.5. the release of the draft report; and
  - 3.1.6. the submission of a final report to the Minister and ETSA Utilities as soon as the Commission determines is appropriate and to the public no later than 7 days thereafter.

HON PATRICK CONLON MP

Minister for Energy  
31 January 2006

**Issues Paper & Questionnaire for affected customers**

The Commission has prepared an Issues Paper, which provides background information relating to the events of 19-22 January 2006 along with a summary of the Service Standards Framework which applies to ETSA Utilities. In addition, the Issues Paper incorporates a questionnaire for customers affected by an outage.

Copies of the Issues Paper will be available on Thursday 9 February 2006 from <http://www.escosa.sa.gov.au/site/page.cfm?u=27&c=1624>, by contacting the Commission on telephone (08) 8463 4444 or via e-mail at [escosa@escosa.sa.gov.au](mailto:escosa@escosa.sa.gov.au).

Interested parties are invited to make a submission in response to the Issues Paper by close of business Friday 10 March 2006. A submission may take the form of a completed questionnaire contained within the Issues Paper, or a more detailed response to the Terms of Reference.