

Performance of ETSA Utilities during January – February 2009 Heatwave

Key Points:

- *Much of southern Australia experienced a severe heatwave from late January to early February 2009, which placed extreme stress on the State's power system, including the distribution network operated by ETSA Utilities. The Victorian and Tasmanian power systems were also affected by the heatwave.*
- *Unplanned interruptions occurred on certain parts of the ETSA Utilities' distribution network, largely as a result of equipment failures caused by extreme heat and due to the limited capacity of some parts of the network infrastructure to cope with the unprecedented electricity demand.*
- *Many electricity customers also experienced power interruptions due to "load shedding", whereby the operator of the National Electricity Market directed ETSA Utilities to initiate controlled rolling outages to ensure that the interconnected power system could remain stable.*
- *Relative to its performance during the January 2006 heatwave, the performance of ETSA Utilities during this most recent heatwave in restoring supply and managing telephone queries appears to have improved, although detailed investigations are continuing.*

Severity of the heatwave

Between 26 January and 3 February 2009, Adelaide experienced 9 consecutive days where the daily maximum temperature exceeded 35°C. During this period, there were 6 successive days where the maximum temperature was greater than 40°C. The extreme heat led to an unprecedented level of electricity demand in South Australia, mainly driven by air conditioner usage. The peak demand on the ETSA Utilities' network reached 3,086MW on 29 January, which is 9% higher than the previous record of 2,842MW set in March 2008.

By comparison, the January 2006 heatwave, which led to widespread interruptions on the distribution system and was the subject of a separate Inquiry by the Commission, consisted of 4 days of above 40°C maximum temperatures and produced a peak demand of 2,633MW. The January – February 2009 heatwave was therefore intense and prolonged, creating record demand and putting the electricity distribution network under extreme stress.

Load Shedding

On 28 and 29 January 2009, around 210,000 electricity customers in South Australia had electricity supply interrupted as a

result of "load shedding", which was necessary to maintain the supply/demand balance on the power system. The rolling outages were implemented by ETSA Utilities at the direction of the operator of the National Electricity Market (NEMMCO). The Commission has excluded the impact of these interruptions from its assessment of the performance of ETSA Utilities during the heatwave, focussing only on those interruptions that were caused by incidents on the distribution network.

Performance by ETSA Utilities

Following the January 2006 heatwave, the Commission has closely monitored the systems and processes established by ETSA Utilities to ensure that it can minimise the customer impact of interruptions caused by such extreme events. ETSA Utilities' preparedness for the January – February 2009 heatwave, and the manner in which it responded to the interruptions that resulted, is therefore of key concern to the Commission. The Commission has undertaken preliminary analysis of ETSA Utilities' network performance and customer response during the recent heatwave and has compared it to its performance during the January 2006 heatwave. Table 1 compares some of the key outcomes.

	January 2006 Heatwave	Jan-Feb 2009 Heatwave
<i>High Voltage network reliability</i>		
HV interruptions ¹	103 (26/day)	195 (22/day)
Customers affected	84,000 (815/interruption)	112,800 (579/interruption)
Average restoration time	90 minutes	89 minutes
<i>Low Voltage network reliability</i>		
LV interruptions	395 (95/day)	1,230 (137/day)
Customers affected	12,600	45,300
Average restoration time	418 minutes	252 minutes
Customers interrupted > 8 hours	3,151 (25% of interrupted customers)	5,442 (12% of interrupted customers)
<i>Call centre performance</i>		
Number of calls	39,755	85,649
Calls answered within 30 sec	66%	80.4%
Average wait time ² (min:sec)	10:33	5:02

1. Includes planned HV interruptions associated with heatwave conditions

2. Time to talk to an operator – many calls are answered through an interactive voice response system and do not involve an operator.

Areas where ETSA Utilities appear to have improved its performance, relative to that during the January 2006 heatwave, include restoration times for Low Voltage network interruptions and, in particular, reducing the proportion of interrupted customers that were without power for more than 8 hours.

Call centre performance during the recent heatwave also appears to have improved relative to the 2006 heatwave performance, with the average waiting time being significantly lower despite a greater number of calls being received.

The Commission is continuing to analyse ETSA Utilities' reliability and customer service performance during the recent heatwave and plans to release a detailed report on this matter in April 2009.