



## Fact sheet: What is reliability?

### AEMC Review of distribution reliability outcomes and standards

#### What is reliability?

Reliability refers to the extent to which customers have a continuous supply of electricity. As electricity cannot be easily stored, a reliable supply of electricity requires generators to produce electricity and the transmission and distribution networks to transport the electricity to customers in real time.

As a result, a reliable supply of electricity to customers requires adequate planning, capacity, and maintenance on all components of the electricity supply chain to ensure electricity can be delivered to customers when it is required.

#### What are the causes of power outages?

Outages can be considered in terms of both planned and unplanned outages. Planned outages generally occur so that maintenance or construction can be undertaken on generators or the transmission or distribution networks. Unplanned outages occur when equipment failure causes electricity to be disconnected unexpectedly.

The reliability that customers experience is a combination of the service provided by generators, transmission networks, and distribution networks. However, most of the outages that customers experience are due to issues on the distribution networks.

Large amounts of money are currently being spent on distribution networks across Australia to provide a reliable supply of electricity. To further improve current levels of reliability, significantly more expenditure would be needed as reliability is already at a relatively high level. As a result, it would not be cost efficient to remove all outages on the distribution networks.

There are also a number of factors which can lead to unplanned outages, which distribution networks have only a limited control over. This includes factors such as birds or possums on lines, or extreme weather such as storms, which may bring lines down.

#### What is the AEMC's role in reliability?

The AEMC's Reliability Panel sets the reliability standard for generation, which currently requires there to be sufficient generation to meet 99.998% of annual demand.

Each state and territory government retains control over how transmission and distribution reliability is regulated, which has resulted in different regulations in each jurisdiction.

In 2010, the AEMC developed a proposal for a national framework for transmission reliability standards. The implementation of this proposal is currently being considered.

We are currently undertaking a review to assess whether there would be merit in a nationally consistent approach to distribution reliability. We have also recently completed a review of the requirements for distribution reliability in NSW to examine the costs and benefits of providing different levels of reliability.

#### How is distribution reliability currently regulated?

In general, each state and territory has reliability standards for the average number and duration of unplanned outages that each distribution network should not exceed each year. For each network, these standards are often further split into specific standards for different levels of customer density, geographic areas, or customer types.

Reliability performance on distribution networks differs, due in part to differences in customer density, terrain, exposure to extreme weather, and the regulatory framework in place.

Most states and territories also have a number of other measures to regulate distribution reliability. In addition to reliability standards which set standards for the average reliability performance of each distribution network, there are:

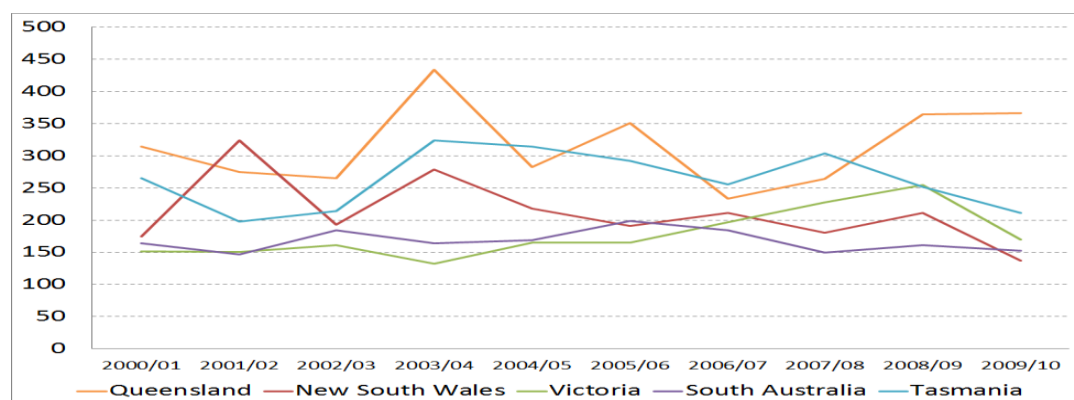
- Input planning criteria, which determine how the distribution networks should be built in the longer term;
- Incentive schemes, which assign rewards or penalties to distribution businesses, where performance is better or worse than the target performance level; and
- Requirements relating to worst served customers, which impose obligations on distribution businesses, such as improvement programs or annual reporting, directed at service standards for customers in poor performing parts of the network.

### What is the current level of distribution reliability in the NEM?

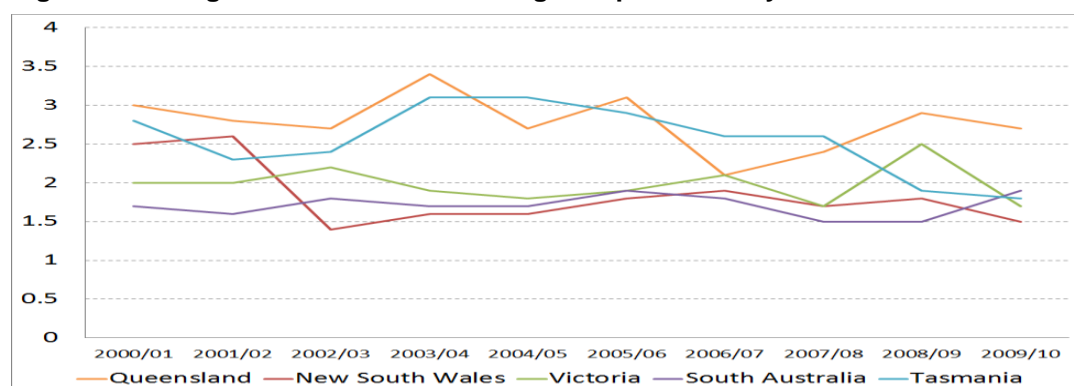
The operations of distribution businesses in the NEM, and their distribution networks, are defined according to distinct geographical areas. Reliability performance on the distribution networks differs, due in part to differences in customer density, terrain, exposure to extreme weather, and the regulatory framework in place. South Australia, Tasmania and the Australian Capital Territory each have a single distribution business responsible for distribution services, while Victoria, New South Wales and Queensland have multiple distribution businesses.

Figures 1 and 2 below, outline the average duration and frequency of outages in each jurisdiction. Caution should be taken in the interpretation of these figures as geographical conditions, historical investment and accuracy of data collection limit the ability to compare reliability performance across jurisdictions.

**Figure 1: Average duration of outages in minutes experienced by distribution customers**



**Figure 2: Average annual number of outages experienced by distribution customers**



Source: AER State of the Energy Market 2011, p 68.

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