

HOW WE'RE HELPING TO KEEP THE ELECTRICITY SYSTEM RELIABLE

ENHANCEMENT TO THE RELIABILITY AND EMERGENCY RESERVE TRADER DRAFT DETERMINATION 7 FEB 2019

The reliability and emergency reserve trader (RERT) is an emergency mechanism that's used when the power system is under extreme pressure.

It allows AEMO to intervene and buy reserves not otherwise available in the market. This draft rule proposes to make the RERT a stronger part of the market safety net. Its recommendations aim to help AEMO manage the changing power system to meet the market's reliability standard.

Submissions on the draft determination are due by 21 March 2019.

CAUSES OF BLACKOUTS FY 2008-FY 2017



Networks

96.6%

Poles and wires breakdowns in the grid

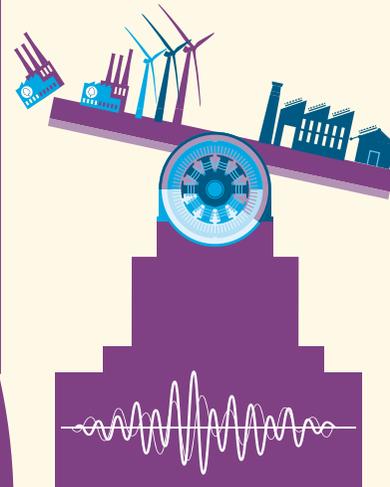
Wholesale

3.2%

0.2%

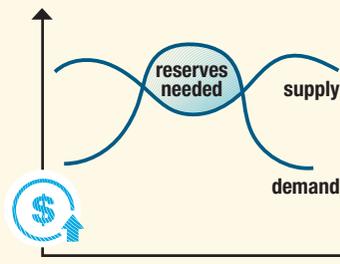
Security events

When the system is shocked out of technical equilibrium



Reliability events

When there is not enough capacity built into the system

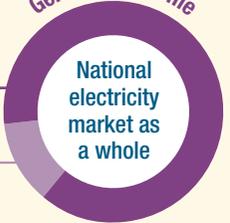


The system must be strengthened

Synchronous generators like coal, biomass, gas and hydro operate with large spinning turbines that help maintain consistent frequency and voltage, keeping the system stable. They inherently produce inertia – the energy momentum that lets the system ride through sudden disturbances and maintain its operating frequency of around 50 Hertz.

Non-synchronous generators like wind and solar have no or low inertia. Systems with lots of non-synchronous generation are weaker and harder to control. They have less time to recover from sudden equipment failures before frequency collapses and blackouts happen.

Generation profile



National electricity market as a whole



South Australia

Investment confidence must be rebuilt

The power system needs integrated energy and emissions reduction policy so firm, dispatchable capacity is available in the right place at the right time.

Investment in generation capacity and demand response includes a buffer called **market reserves**.

If there is not enough generation and demand response in the right place at the right time then **emergency reserves** are activated.

Market reserves



Emergency reserves



HOW WE'RE HELPING TO LOWER THE COSTS OF EMERGENCY RESERVES

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Emergency reserves have always been part of the national electricity market.

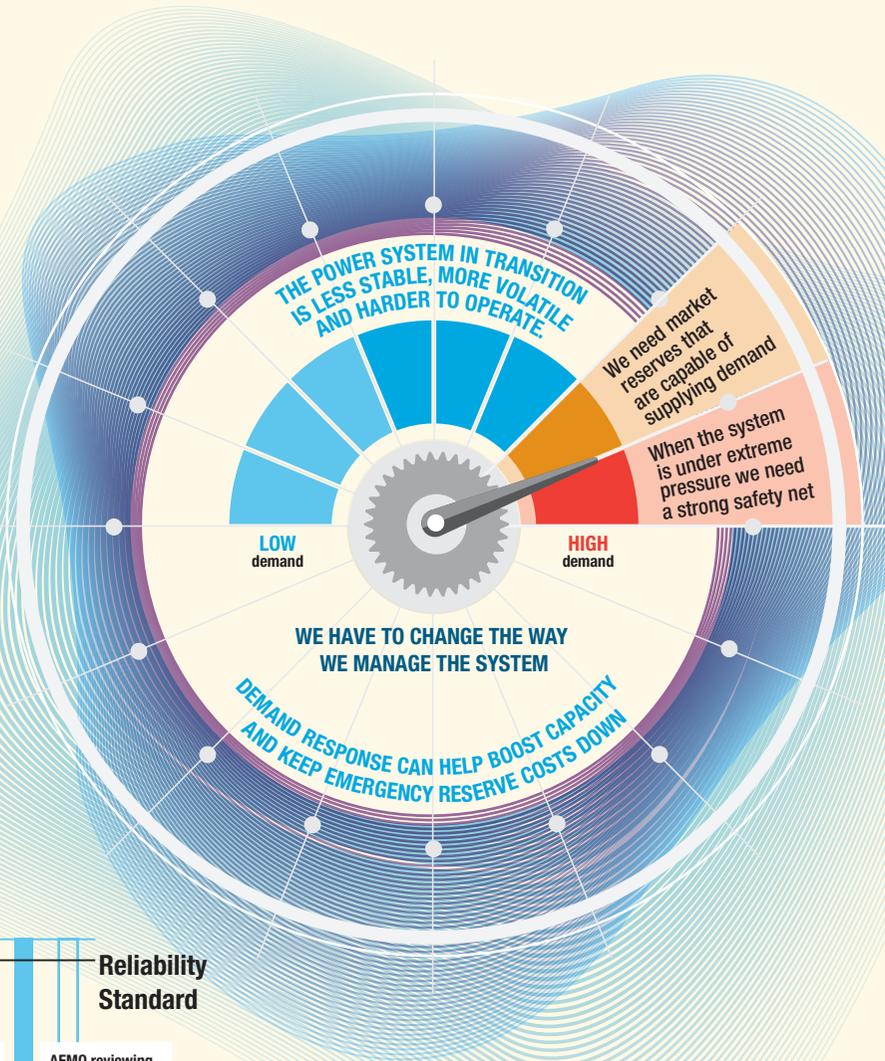
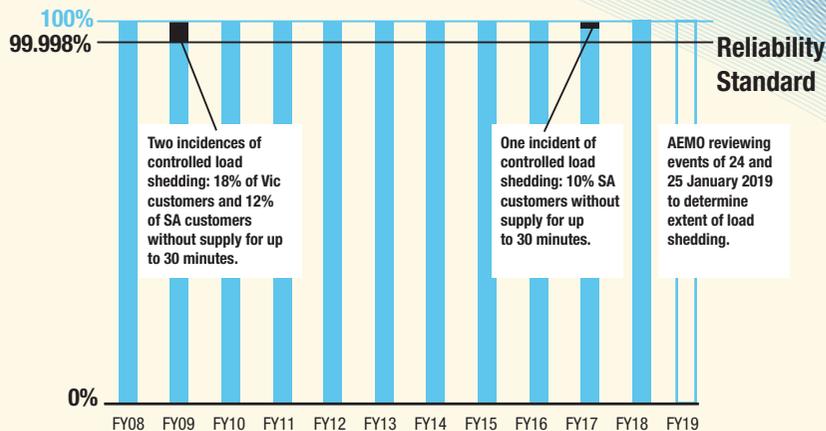
The reliability framework says AEMO should target zero load shedding in real time. Load shedding only happens after AEMO forecasts not enough market reserves; sees insufficient response from the market to step up reserves; and has no emergency reserves available.

Rotational load shedding is used in selected areas to maintain system balance and stop uncontrolled blackouts cascading across the system.



Percentage of consumer demand met by available generation capacity over time

Before 2017 AEMO had only signed three reliability and emergency reserve trader contracts and never had to use them. That's changing.



Draft rule recommended changes



improving incentives for customers to reduce demand to minimise the need for emergency reserves:

We want incentives for demand response – for example, retailers encouraging their customers to reduce energy use during heatwaves. So costs of emergency reserves will be recovered, where possible, from customers who caused the need for the RERT.



increasing transparency:

AEMO would provide regular updates on how the RERT is procured and used, and how much emergency reserves cost.



clarifying the trigger:

the RERT can be triggered if AEMO forecasts a breach of the reliability standard which requires enough generation to service 99.998% of consumer demand. This clarity helps the market plan operations and budgets.



increasing the lead time to buy reserves from 9 to 12 months:

with a longer lead time, AEMO can get better deals from a larger pool of providers, including demand response providers. This would ultimately lead to lower costs for consumers.



providing a price guide for emergency reserves:

the price should typically be less than the cost of load shedding. AEMO will use the AER's assessment of the value customers place on reliability as an input.



encouraging a lower-cost competitive market response:

by only letting providers enter into contracts for emergency reserves if they have not been in the market for the past 12 months. This avoids a more expensive 'RERT-only market' developing.