

# Power System Update - High Load

Presented to WA Electricity Consultative Forum  
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# Overview

1. High load, low reserves event occurred through 6-9 January
2. AEMO closely monitored the situation and worked with Market Participants, Western Power and EPWA to manage the situation
3. Operational responses were reviewed to plan for the risk of insufficient reserves
4. The event was resolved eventually with sufficient reserves maintained
5. Lessons learnt for current operational practices as well as for future considerations for WEM

# The situation

- Operational Demand was estimated to be high on 7, 8 and 9 January due to high temperatures
- On 5 January two large generation units went on Forced Outages to join one other large generation unit already on forced outage
- Bush fires and thermal constraints were impacting the ability of some generators to export all available power
- Reserve margins were depleted as a consequence
- There was no guarantees that the generators on forced outage would return to service prior to the periods that we were at risk of tight reserves
- Assessment of high (rather than base case) demand forecast indicated a potential reserves shortfall. i.e. if had N-2 event and high demand then would have generation deficit.

# Action taken by AEMO

- Liaised with the two large generators to support their return to service.
- Considered requesting return to service of approved generation outages however return to service periods were long.
- Liaised with generators and large customers regarding ability to reduce load or increase generation, and understand any potential additional risks
- Liaised with Western Power to ensure the critical lines are back in service for the high load situation and dynamic line ratings could be realised. Also, ensuring the load shedding plans are current and ready to be executed if required
- Kept EPWA informed
- Informed Market through Dispatch Advisory
- Worked through plans to execute for low reserves or no reserves situation

# Outcome

- The Operational Demand for the day reduced slightly, however reached a maximum peak of 3788MW, which was the 7<sup>th</sup> highest Operational Demand day in the history of the WEM
- Some major generators were able to return to service
- By the time Friday evening peak arrived we had achieved normal planning margins
- No load shedding or additional actions were required to maintain power system security

# Lessons

- Early communication is important
- Early coordination with key players is critical
- Improved clarity of roles and responsibilities is required
- Dynamic approach to protective schemes such as load-shedding to be maintained (currently in development).

# Strategic Questions

- Reliability Standard / Capacity Credit Allocation validity:
  - The Grid scale intermittent resources generated 52% of their RCM credits (136MW of 1185MW name plate, 258MW capacity credits at 3788MW of peak Operational Demand).
  - There is a great deal of uncertainty in relation to availability of generation due to increased variability on both supply and demand, and decrease in reliability of base-load generators (due to age and variable operation). How much do we value certainty that the load will be served and do we sufficiently value firmness?
- Grid/System Investments:
  - Are there investments required in the grid to resolve constraint on the generation in north country, or power system (e.g. storage, firmer generation) that can be justified to resolve the high load situations going forward? Could these investments also assist with minimum demand?
- Reform considerations:
  - Are there any actions in the scope of current reforms that need to be expedited to create more certainty and reliability?
  - How would DER support a similar situation in the future and do we need to expedite some of the actions from the DER Roadmap?

# Questions and Feedback