



# Lack of Reserve (LOR) Dispatch Advisories

Globally, power systems are built and operated with an extra level of reserve energy – a ‘buffer’ – available to assist with maintaining Power System Security and Reliability for energy consumers.

Pre-determined reserves in Western Australia’s power systems refer to the spare capacity to provide this buffer, over and above the level of electricity demand that is forecast at any given time.

As the system operator, AEMO has several processes and arrangements in place to mitigate risks to energy supply when the system is affected by LOR conditions.



## What causes LOR conditions?

A combination of planned and unplanned events can impact available resources, causing a depletion of electricity reserves:



Extreme weather events such as heatwaves, bushfires, floods, and storms



High demand



Generation and/or infrastructure outages, or critical infrastructure maintenance



Fuel shortages

## LORs are categorised over three tiers

When there is a supply and demand imbalance, AEMO takes proactive steps to manage reserve shortfalls and communicates this by issuing LOR Dispatch Advisories.



### LOR 1

This condition exists when reserve levels are lower than the amount required to cover the loss of the largest generation contingency and to maintain adequate reserves to respond to losing the second-largest generator on the South West Integrated System (SWIS). LOR 1 signals when there is a shortfall in meeting the planning margin and a contingency at this level may result in a shortfall of reserves.

At this level, AEMO will manage the power system as normal and no impact to Power System Security or Reliability is expected.

AEMO will continue to monitor reserve levels to maintain adequate supply. No Dispatch Advisory will be issued.



### LOR 2

Signals a tightening of electricity supply reserves. This condition exists when reserve levels are lower than the amount required to cover the loss of the largest generation contingency on the SWIS. At this level a contingency over the evening peak may result in automatic under frequency load shedding.

At this stage, there is no impact to the power system, but supply could be disrupted if a large contingency occurred.

Under LOR2 conditions, AEMO would direct available capacity, including generators and demand side response, to improve the supply-demand balance.



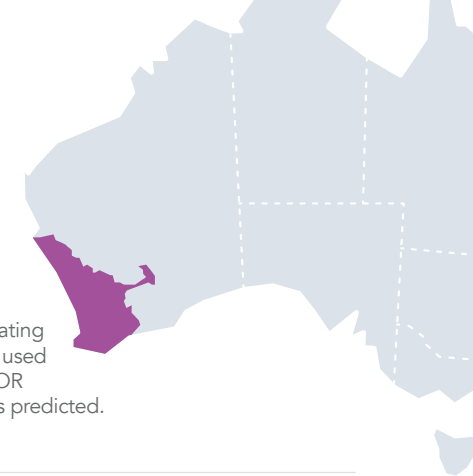
### LOR 3

Signals a deficit in the supply/demand balance. This condition exists when the available electricity supply is equal to or less than the operational demand. This means there are no reserves available.

Once all available capacity has been dispatched, manual load shedding may be required as a last resort to protect system security and prevent long-term damage to system infrastructure. If a contingency occurs, automatic under frequency load shedding may eventuate.

AEMO will take necessary actions to manage power system security under each of these conditions, taking into account the actual events on the system. Dispatch Advisories will be sent out accordingly.

## LOR in Western Australia (WA)



AEMO has implemented the LOR notification framework in the WEM from December 2022 to improve communication related to tight operating conditions. Specific assumptions are used to forecast LOR conditions. Actual LOR outcomes may be different to what is predicted.

## What is an LOR condition?

AEMO assesses the probability of a shortfall in available capacity to maintain the planning margin on a daily basis. If specific LOR conditions are identified, WA Market Participants may be notified accordingly by way of Dispatch Advisories to provide additional situational awareness and to support their preparations to respond to the tight period.

The **planning margin** is the buffer of reserves AEMO carries to operate the SWIS securely. It is forecast 24 hours in advance and monitored in real time to determine if an LOR condition exists or is likely to exist in the future.

