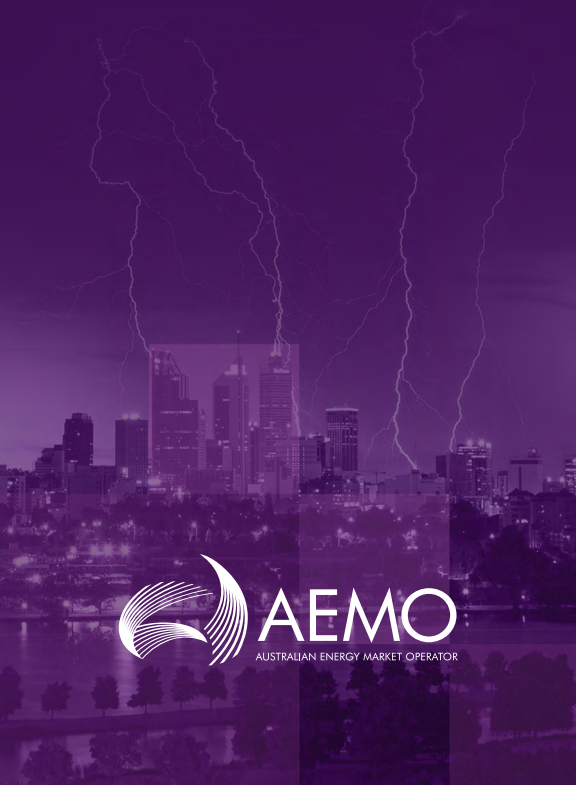
Wholesale Electricity Market

Load Shedding

Load shedding is the reduction of electricity to selected areas during extreme events to protect the electricity network from long-term damage and widespread consumer outages.

Used as a last resort, load shedding assists in balancing supply and demand to maintain power system security.



AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

What causes electricity shortfalls?

In a major electricity system, supply and demand needs to remain balanced to keep system frequency within a secure operating range. In Australia, AEMO operates the National Energy Market (NEM) on the east coast, and the Wholesale Electricity Market (WEM) in Western Australia.

Across both markets, AEMO continually forecasts demand from homes and businesses, and dispatches electricity from a range of sources to meet that demand in real time.

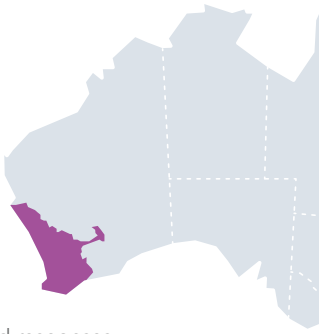
On rare occasions, there isn't enough supply to meet demand due to a range of factors, including:

- Extreme weather events, such as heatwaves, floods and storms
- Fuel source disruptions, such as gas or coal supply issues
- Generation and/or infrastructure outages

Under frequency load shedding (UFLS)

Load shedding can also occur automatically under coordinated schemes when sudden, unexpected events cause a sharp drop in frequency. In these cases, UFLS can kick in to quickly stop the frequency drop, preventing it from collapsing completely and allowing the system to be re-secured.

Why is load shedding required?



AEMO will issue a direction to undertake load shedding as an absolute last resort after it has exhausted all of its supply and demand response options. These options include:

- Dispatching all available generation and demand responses.
- Using any operational flexibility to maximise network capacity.
- Drawing on all emergency energy reserves.

If these options have been exhausted, then load shedding is only undertaken to avert the risk of whole system collapse or physical damage to parts of the power system.

Emergency reserve mechanisms

In the WEM, AEMO can use emergency reserves under the supplementary reserve capacity (SRC) in the summer period to avoid or reduce load shedding. AEMO is also procuring further generation availability through the new non-co-optimised essential system services process.

Which areas could be affected by load shedding?

AEMO does not decide which areas have their power turned off.

AEMO identifies the amount and duration of electricity shortfalls and takes actions available, such as directing more generation or a reduction of electricity use.

If electricity shortfalls remain, AEMO issues the direction to network transmission companies to enact load shedding.

These companies then determine how load shedding is undertaken at a local level to meet the shortfall.

Load shedding in the WEM

In Western Australia, Western Power administers the state's transmission and distribution networks, and undertakes manual load-shedding at AEMO's direction.

Load shedding involves a controlled reduction of electricity supplied to homes and businesses to securely manage the state's wider power system, which is known as the South West Interconnected System (SWIS).

Western Power initiates a process of rotational controlled outages, that are typically one-to-two hours' long.

Wherever possible, manual load shedding is done on a rotational basis to minimise impact.

AEMO, the Western Australian Government and Western Power work together to limit the impact on the community, particularly major health facilities, emergency services and public transport.

However, all electricity consumers should be prepared for power outages, in the rare occurrence that AEMO instructs manual load shedding to protect the whole SWIS.

Did you know?

The power system may experience different types of power outages. Load shedding is different to local outages.

- **Planned outages** are prearranged and necessary for routine maintenance, inspections and improvements on various electricity infrastructure.
- **Local unplanned** outages are interruptions to the generation, transmission, or distribution of electricity that is unscheduled and can occur as a result of damage to wires or infrastructure.