LOAD SHEDDING

Load shedding is when power is turned off to some customers as there is not enough electricity being generated to meet the demand for electricity from homes and businesses.

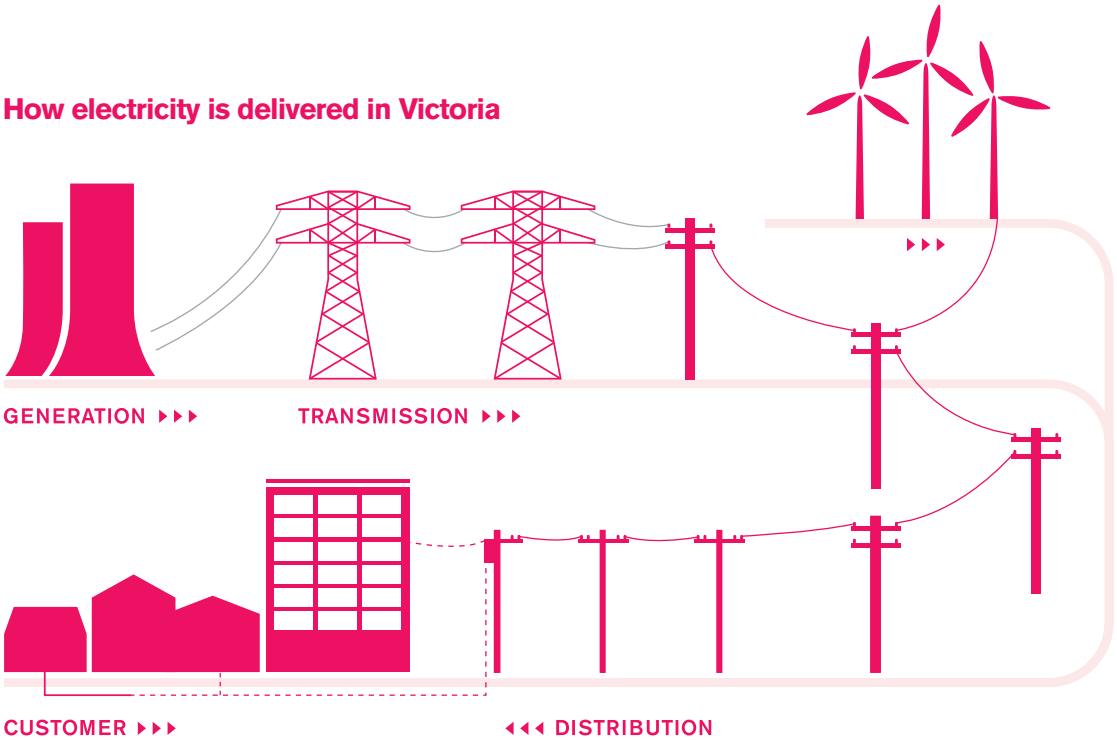
This may happen for a range of reasons, including as a result of significant electricity use during extreme hot weather, a technical fault at one or multiple power stations, or an incident on a high voltage transmission line.

This factsheet provides information on who initiates a load shed event and how we respond.

Four steps in electricity supplies

- As a network business, we are part of a larger electricity sector designed to generate, transport and sell power to homes and businesses.
- Generation companies produce the electricity from sources such as coal, gas, wind and solar. Transmission companies carry the high voltage electricity over long distances. Distribution companies (like United Energy) deliver that electricity through a network of poles, wires and infrastructure to the meter box for customers. We also provide your meter data to your electricity retailer, which is responsible for issuing your bill.
- Victoria is part of the National Electricity Market which connects our state with Queensland, New South Wales, South Australia and Tasmania. This means electricity can be generated in other states and transported to Victoria via transmission lines, which are not owned by United Energy.
- This market is overseen by an independent organisation called the Australian Energy Market Operator (AEMO). AEMO's role includes planning and forecasting as well as ensuring the energy market is secure, stable and can provide enough power to homes and businesses.

How electricity is delivered in Victoria



What is load shedding?

Load shedding occurs when there is not enough power supplied to meet the demand on the electricity grid.

This is more likely to occur at the generation or transmission level of the electricity system and is typically not related to issues on the distribution network which we own and operate.

In these situations, demand may need to be reduced very quickly to an acceptable level, or risk the entire electricity network becoming unstable and shutting down completely.

To alleviate this risk to the grid, AEMO will direct distribution businesses, such as United Energy, to instead quickly shut off power for short periods of time and on a rotating basis.

We continue this process until AEMO has assessed that the risk to the grid is over and has directed distribution businesses to stop load shedding.

Who makes the decision?

AEMO makes the decision to load shed.

AEMO informs us how much load, also known as demand, needs to be reduced and we respond by switching power off in different areas across our network for short periods of time. In most instances, the distribution businesses receive these instructions at very short notice.

If we don't act in time, power may be cut at a transmission level and this is likely to impact more customers for longer periods of time. Alternatively, the system may completely shut down and wide spread blackouts may occur. This is known as a 'system black' and it can take hours or days to restore power to all customers.

How is load shedding different to normal faults that occur on the United Energy network?

Power outages related to faults on our local network infrastructure can happen for a range of reasons, including extreme weather, vegetation coming into contact with our network, wildlife and car accidents. In these cases, the causes are accidental and the impacts are usually localised.

In load shedding, communities can be without power due to an enforced action by the market operator, AEMO. The causes are outside our control and impacts can be on a wider scale. Load shedding incidents are much rarer than power outages related to faults.

In any case, our employees based in our control centres and depots respond to restore power as safely and quickly as possible.

Whose power will be turned off?

When directed to load shed, our aim is to minimise the impact to the community and to keep areas with critical infrastructure such as major hospitals, sewerage and water pumping stations and major public transport on supply.

The first areas to be turned off during a load shedding event will be mainly residential in both metropolitan and regional areas.

Typically, critical customers are last to have power turned off and first to have supply restored. This may not always be possible depending on how much electricity AEMO directs us to shed.

We turn off areas by 'feeder'. A feeder is a high voltage line that transports power from a zone substation to large areas and could supply a few hundred to many thousands of customers.

We carefully pre-identify the priority list of feeders to be shed. This allows us to quickly turn off power when we are directed by AEMO.

To prepare for the rare event of load shedding, United Energy annually reviews the types of customers connected to each feeder across our network. Our team then determines which areas should be considered high priority based on where critical customers are located.

When will my power be turned back on?

During a load shedding event, a customer's power supply is typically interrupted for one to two hours and is then reinstated as power supply to other customers is interrupted. This is often referred to as rolling blackouts.

We seek to minimise the impact to customers by rotating these outages but it is possible customers will be impacted more than once if an event continues for a number of hours.

These rolling outages will continue until AEMO directs us to restore power.

During load shedding events, localised network faults can still occur and cause outages. This may mean customers are without power once the load shedding event is over. In these cases, our crews will be working as safely and quickly as possible to identify these faults and restore power to those customers.

How many customers will load shedding impact?

Every load shedding event is different and the number of customers impacted will depend on how much demand AEMO needs to reduce to ensure balance on the grid.

Generally, the higher the electricity demand that needs to be reduced, the larger the number of customers impacted. Importantly, by load shedding on a rotational basis, the aim is to prevent lengthy and widespread blackouts.

How do you decide which areas get rotated?

The areas that are turned off are based on the amount of demand we need to reduce and the feeders they are connected to. They are spread across all parts of our networks: regional, urban and rural.

Preference for load shedding is given to feeders with predominantly residential customers, with those with critical supplies remaining on for as long as possible.

Our control room is able to remotely interrupt and also restore power to areas in our network.

How do you decide which feeders?

We have a classification system that guides our selection process for load shedding and determining what order feeders are turned off. We review our feeder lists every year to ensure they remain accurate and reflect any changes in industry.

Feeder classifications for Selective Load Shedding in United Energy

STAGE	DESCRIPTION
1	Domestic
2	Minor commercial, including strip shopping centres
3	Minor industrial such as smaller industrial factories
4	Major commercial such as multistorey buildings, large undercover shopping centres, transport
	Major ambulance, fire brigades and police centres
	Medium to large nursing homes
	Smaller day hospitals
5	Major industrial
	Large medical services - large hospitals (without casualty)
	All pumps identified by Melbourne Water as critical, and major bridge supply
	At least one station service supply at each zone substation
5 Critical	Critical infrastructure such as airports, major hospitals (with casualty)

Why can't places like nursing homes and shopping centres be exempt?

Due to the design of our network, it is not possible to isolate and exempt individual customers when shutting off large feeder areas. By load shedding on a rotational basis, we aim to minimise the impact to customers.

Some critical customers such as major hospitals, have their own dedicated feeder line and can be unaffected by load shedding.

Other facilities choose to have their own emergency generation equipment available so they can operate independently of the network when need be.

Should I buy a generator in case this happens again?

The decision to buy a generator is a matter for individual homes and businesses. Load shedding is highly unusual, however power outages can happen for other reasons such as extreme weather events, car accidents or equipment failure. It's for that reason we encourage businesses that depend on electricity to have a back-up plan, such as a generator, in case there is an unplanned outage.

Can't you deploy more demand response so we can avoid load shedding in the future?

Demand response programs play a role in reducing the amount of electricity being used during peak times. As a network business, we have demand response programs on localised areas of our network. Whether this is sufficient in a load shedding event depends on instructions from AEMO.

Can you keep life support customers on?

For planned outages initiated by United Energy we communicate directly with all customers including those who rely on electricity for life support equipment.

During a load shedding event, it is unlikely we could selectively keep power on to individual customers, including life support customers.

We always recommend to life support customers to have an action plan in place in case they experience an interruption to their power supply.

We also ask our life support customers to ensure their contact details are up to date in our records. More information is available at www.unitedenergy.com.au

Can you let me know before you turn off my power?

The amount of notice we are able to provide during a load shedding event depends on the direction of AEMO. We provide updates during all forms of outages via SMS, on our website at www.unitedenergy.com.au, and our customer contact centre.

About United Energy

United Energy is a distribution business responsible for operating and maintaining the electricity network that transports electricity to more than 685,000 homes and businesses across Melbourne's south eastern suburbs and the Mornington Peninsula.

Our customers expect us to deliver the electricity they need to power their lives and we work all year round to make sure our network is reliable.

Australian Energy Regulator benchmarking ranks us among the most reliable networks in Australia. In the United Energy area, electricity is available for 99.99 per cent of the year, or the equivalent of being without power for 45 minutes.