

Load shedding – Frequently Asked Questions (FAQ)

1. What is load shedding?

Load shedding is a measure of last resort to prevent the collapse of the power system country-wide. When there is insufficient power station capacity to supply the demand (load) from all the customers, the electricity system becomes unbalanced, which can cause it to trip out country-wide (a blackout), and which could take days to restore. When power is insufficient, Eskom can thus either increase supply or reduce demand to bring the system back into balance. As the difference between supply and demand becomes small, we refer to the system becoming “tight”. This implies that action has to be taken to prevent the system from becoming unstable.

Eskom normally takes a sequence of steps to keep the system stable and to avoid load shedding. The steps include first asking large customers to reduce load voluntarily. However, if several power station units trip suddenly and unexpectedly, we may have to skip those steps and go straight to load shedding to prevent the system from becoming unstable.

Scheduled load shedding is controlled by way of sharing the available electricity among all its customers.

By switching off parts of the network in a planned and controlled manner, the system remains stable throughout the day, and the impact is spread over a wider base of customers.

Load shedding schedules are drawn up in advance to describe the plan for switching off parts of the network in sequence during the days that load shedding is necessary. On days when load shedding is required, the networks are switched off according to the predetermined plan, to ensure that, as far as possible, customers experience load shedding in accordance with the published load shedding schedules.

In exceptional circumstances, if scheduled load shedding is not achieving the required load reduction and/or unexpected emergencies or failures occur, then System Control Centres will shed load outside the published schedules by using emergency switching in order to protect the network.

Such events are rare, but if a state of emergency load shedding is declared, then all customers can expect to be affected at any time, and the planned schedules may not necessarily apply.

2. How does load shedding work?

The Load Shedding Schedules have been simplified for these reasons:

- To make the schedules easier to understand and remember
- To improve our ability to adhere to the planned schedules
- To improve the stability and consistency of the schedules
- To improve the predictability of being switched off
- To improve the communication of the schedules and the status of the power system
- To make the impact fairer across the entire customer base.
- When load shedding is required, a fixed plan for Load Shedding Schedules will go into operation
- These schedules are published in advance so that customers can find out the days and times when they will be affected if load shedding becomes necessary
- Period of load shedding
- Load shedding will only occur when required by the system
- Where possible, Eskom will predict the “tight” periods in advance and a fixed period for scheduled load shedding (e.g. two weeks) will be identified beforehand and communicated to customers in advance via the media
- All customers could be affected
- If there is load shedding outside the schedules, the media will be the main channel used for keeping customers informed.

To understand how the schedules work, please see the “Interpreting Schedules” tab on the load-shedding.eskom.co.za website.

3. How can I stay informed about load-shedding?

It is important for every customer to know where to find the following information:

3.1 The status of the Power System on a daily basis (Is Load Shedding happening / likely to happen in the country today?)

- The PowerAlert dial on the websites www.eskom.co.za and www.poweralert.co.za
- Daily power status broadcasts on regional radio stations

3.2 The next “tight” period when scheduled load shedding will take place (What is the outlook for the country for the next few weeks?)

- Notice on the Eskom website, www.eskom.co.za
- SMS notification to Eskom customers
- Daily power status broadcasts on regional radio stations
- Notification in the press

3.3 The planned load shedding schedules (When exactly will my power be cut during scheduled load shedding periods?)

- Notice on the Eskom website, www.eskom.co.za
- SMS notification to Eskom customers
- Daily power status broadcasts on regional radio stations
- Notification in the press

3.4 The detailed scheduled load shedding schedules are available:

- On the Eskom website, www.eskom.co.za
- By SMS and e-mail notification for Eskom customers
- On request from the Eskom Contact Centre on 08 600 ESKOM (086 003 7566)

- Keep updated about the changes to the Schedules, which may take place from time to time:
- In the press (to cut out and keep)
- By SMS notification for Eskom customers
- On request from the Eskom Contact Centre on 08 600 ESKOM (086 003 7566)

3.5.1 Notice of any ad hoc deviations from published schedules due to operating issues that may arise from time to time will (where possible within the constraints of the time available) be given –

- on the Eskom website, www.eskom.co.za;
- by SMS notification for Eskom customers;
- on request from the Eskom Contact Centre on 08 600 ESKOM (086 003 7566).

4. What is the difference between load shedding and saving electricity?

Load shedding is aimed at removing load from the power system when there is an imbalance between the electricity available and the demand for electricity. If we did not shed load, then the whole national power system would switch off and no one would have electricity. Load shedding is therefore done to protect the national power system from collapsing.

Saving electricity (by using energy-efficient appliances, switching off equipment when not in use, using alternative sources of energy such as solar geysers) has benefits such as reduced cost, less pollution, the better use of natural resources (coal, water and fuel) and less wear and tear on the power stations, transmission and distribution systems – and it saves customers money.

In these times of capacity constraints, saving electricity also means that the load on the national power system is reduced. This helps to stabilise the balance between the available generation and the demand, in this way reducing the risk of load shedding.

This is why saving electricity can help to prevent the need for load shedding, especially if customers switch off unnecessary appliances and loads during peak periods, and also at other times when the risk of load shedding is high (when the Power Alert goes into Orange, Red or Brown).

5. How did load shedding come about, what happened?

In the past decade, South Africa has had a steady growth in the demand for electricity because of robust economic growth. The continued growth in the economy has exhausted Eskom's surplus capacity for electricity generation and reduced its reserve margin progressively. We expect the reserve margin to continue on a downward trend for the next few years until substantial new base-load power plants comes on line**. In spite of new capacity coming on line, which included bringing back the mothballed power stations and building open-cycle gas turbines, the demand is still higher than the available capacity.

Until we have additional capacity through the new build programme, and unless we can substantially reduce national demand, there might be times when load shedding will become necessary to protect the electrical power system.

6. What are Eskom's short-term plans, not long-term as in building power stations?

- Improve the load shedding schedules, and the accuracy, quality and fairness of, and adherence to, these schedules, which are large and complex.
- Improve suburb search (navigation) on the website
- Improve agent training and increase the number of agents in the contact centres
- Ongoing liaising with the municipalities
- Encourage saving of electricity – using electricity sparingly
- Investigate and implement alternatives to load shedding, such as power rationing
- Improve transparency and communication
- Work with customer groups and stakeholders to find and agree on acceptable solutions

7. If Eskom has a capacity problem, why are metro/municipality customers affected?

The electricity supplied to metro/municipality customers is generated by Eskom power stations and transmitted across the country, where it is sold in bulk to metros/municipalities which, in turn, distribute and sell it to their end customers.

If Eskom faces capacity problems, it reduces load among all of its customers, including the metros and municipalities. Therefore, Eskom asks the municipalities to reduce load, and they in turn activate load shedding among their customers.

8. Where do I find out when the electricity in my area will be shed?

Load shedding schedules for Eskom areas are published on the Eskom website, www.eskom.co.za. Information is also available from the Eskom Contact Centre on 08 600 ESKOM (086 003 7566). If you are a municipal customer you can access the schedule for your area by accessing the relevant municipal website or phoning their contact centre. This information is usually on your bill.

9. The schedules on the website/in the newspaper are not accurate – in reality the power goes off at different times to those published, and is off for longer than the scheduled time. Why is this?

We are trying to make the schedules as reliable and accurate as possible, but there are inaccuracies because –

- most networks do not coincide exactly with area boundaries, such as suburb boundaries. So, there will always be a margin of error, because two customers living in different parts of a suburb can be fed by different networks which are switched off at different times;
- sometimes engineers have to switch networks differently from the plan, for operational reasons. We try to minimise this as much as possible and stick as closely as possible to the published schedules. We are also working on ways to inform customers when we have to deviate from the published schedules;

- on occasion, the power is off for longer than stated in the published schedules. The usual reason for this is that when the engineers attempt to switch the power back on, either the remote control switches do not operate, meaning that field staff members have to drive out to switch the power to customers back on manually, or sometimes network faults happen on re-energising because of a surge in the current. Then the field staff have to go out and physically fix the fault.

10. Why are not all the suburbs/areas listed in the schedule?

The Eskom schedule information is based on our network and customer databases and the official SA Government database of Regions, Towns and Suburbs. Some areas have more than one name, and these unofficial names are not included.

11. Not everyone has access to the internet. How can they find the information they need?

We are expanding a range of electronic communication channels to improve access to the information:

- We are using our existing outage management SMS campaign system to notify Eskom customers. It is important for customers to keep us up to date when they change their cell phone numbers. There are sometimes delivery delays on the cellular networks due to congestion when large numbers of SMS messages are sent.

The contact centre is not the recommended method for finding out about schedules because it often means waiting in a frustratingly long queue. The agents only have access to the schedules that are published on the Eskom website

12. The municipality/metro information is not as complete as the Eskom information.

We are working with all the municipalities and metros to improve this. The intention is that all the communication channels mentioned above ought to be able to provide the information to Eskom and municipal/metro customers.

13. Why are some customers switched off for longer than the published times on the schedules, and sometimes more than once a day?

Most customers are switched off according to the published schedules because we generally use remote-controlled switches to control the network. However, some customers are switched off for longer than the period published in the schedules because, if the remote switching does not work because the switching equipment or the telecommunications links have failed, we have to send out technicians to do this switching manually, and in these cases we may over-run the scheduled times.

Another possible cause of time over-runs is that when we re-energise the network, there are large surge currents, which can damage our network equipment or cables. This means that we have to send out field teams to find and repair the fault before the power can be restored.

Customers should please switch off all apparatuses and appliances during an outage so that they can minimise the effect of this surge, and also protect their own equipment against possible damage. Leave only one light on so that you know when power has been restored.

14. Why do some customers not have any load shedding at all, yet in some areas the same customers have load shedding over and over again?

We have agreements with certain large customers that they will reduce a significant percentage of their load when we go into load shedding, but we still have to keep their power on during these times. Also, we do not cut off the critical entities that directly contribute to the continuity of power supply, e.g. coal mines, oil refineries and water supply pumps. It could be that other customers are connected to the same networks feeding these large or critical customers, and since we switch the load shedding by network (it is impossible to isolate individual customers), these other customers would benefit by not having their power cut.

15. Why are customers not informed well in advance and why can we not provide a forecast for future load shedding events for customers to plan accordingly?

Eskom forecasts the future outlook for the days, weeks, months and years ahead, based on projections of load growth and the planned maintenance of our power stations. These outlook forecasts show that load shedding is likely to happen on a regular basis in future until the reserve margin is adequate.

We use various media channels to keep the public better informed about the outlook, which will give customers a better idea of what days load shedding is likely to happen. We also publish the schedules in advance, so that, if load shedding does happen, customers will know at what time of day they are scheduled to have power outages.

Customers should assume that load shedding will take place in accordance with the published schedules, and therefore plan accordingly.

However, on any given day, the situation can change at a moment's notice if there is an unforeseen fault, which will have the result that additional emergency load shedding is necessary.

16. How do these schedules, colours and stages work?

The Power Alert colours represent the balance between supply and demand on the power system.

When the colour reaches black, the system is in a critical state and, unless enough load is reduced voluntarily, load shedding will start.

The schedules are a predetermined set of schedules (including a 30 minute overlap time to allow for switching) that gives the time when we will cut off each area if load shedding is necessary. When we need load shedding, we try to stick to these schedules, so that customers know what to expect if shedding starts.

To spread the impact of load shedding more evenly, there are two sets of schedules, one for Mondays, Wednesdays and Fridays, and the other for Tuesdays, Thursdays, Saturdays and Sundays.

There are three stages, depending on how big a problem (i.e. a shortfall) there is on the national power system:

Stage 1: up to 1 000 MW

Stage 2: up to 2 000 MW

Stage 3: up to 4 000 MW

We refine these schedules all the time, so please always look at the latest schedules on the Internet.

17. Can load shedding time be negotiated?

In general, it cannot, since we cannot negotiate at an individual customer level. However, when compiling the schedules we have tried as far as possible to take into account factors such as peak periods, business hours, and the nature of life and work in the various areas and communities. The reality is, when necessary, we have to remove load from the system and we can never do this without inconveniencing somebody, somewhere.

We do not have the flexibility now that we have had in the past, when negotiating planned outages for the maintenance of our lines, which many customers have become used to.

We are, however, taking into account all the inputs received from our customers in refining the way we do load shedding, to take into account as many of the concerns raised as possible, within the constraints of technical limitations and the realisation that it is impossible to meet the needs of every customer satisfactorily.

18. What about customers with special needs?

Customers with special needs, such as medical support equipment (ventilators, dialysis machines, etc.) should consult their medical practitioner about what special arrangements can be made. For example, it may be possible to obtain a battery backup unit for medical equipment, or to get additional oxygen cylinders as a backup.

It is generally impossible to leave the power on for individual customers when whole networks and areas are switched off, so customers with medical needs must please take extra precautions to ensure that their needs are provided for, and that they are prepared to deal with power cuts.

19. What will be affected by power outages?

The following will not be available when the electricity supply to your home is switched off:

- Electric geyser and electrically heated water supplies
- Electric stoves, electric kettles, microwave ovens and refrigerators
- Lights
- TV and hi-fi equipment
- Electrically motorised security gates and garage doors
- Pool pumps
- Personal computers
- Electric air conditioning
- Electric alarm clocks
- Household electric pumps for irrigation or plumbing systems
- Electrically operated ignition systems on certain gas appliances
- Automatic electronic control systems and time clocks

20. What will usually not be affected by power outages?

- Security systems that have battery backup (some may go off because of the interruption)
- Telephones that are not reliant on mains electricity (but answering, cordless phones and fax machines may be affected).
- Cell phones

21. What advice do you have to help me cope with power cuts?

Hints and tips in case of power outages

Eskom has a short-term power supply shortage, while at the same time there is a higher-than-expected demand. From time to time this may result in power outages – what is called load shedding – for short periods across the country. The more electricity South African consumers can save by switching off non-essential appliances, or not switching them on at all, the fewer the power outages. Below are hints and tips to help you in case of power outages.

Switch it off:

If the power goes off, it is safer to simply turn off (or even better, disconnect) any electrical appliances that you were using. Keep one light switched on to alert you to when the power returns. Clearly mark on/off switches with a piece of masking tape. When the power comes back on, it may do so with a momentary surge, which may damage electronically controlled appliances such as computers, television sets, VCRs, DVDs, etc.

Remember to reset the time control clocks on cooking ovens, pool pumps, geysers and other automatically controlled appliances, unless these are battery operated. Also remember that householders are responsible for all electricity usage and appliances in their homes.

Useful tips to minimise inconvenience when the power is off:

Think about **communication**:

Ensure that your cell phone is always fully charged when power is available.

Think about **transport**:

Ensure that your vehicle (car, "bakkie", motorcycle, etc.) always has fuel in the tank because petrol stations cannot pump fuel during power outages.

Think about **cash**:

Ensure that you have enough cash because ATMs cannot operate without electricity.

Think about **access, security and safety**:

--Release automatic electric garage door mechanisms so that you can gain access to your property during a power outage.

--Release electric security gates and switch to manual operation to avoid being either locked out of or into your home.

--Keep temporary lighting readily available, e.g. battery powered torches and candles. Make sure you put these items in places where they will be easy to find in the dark.

--Keep a torch (with fresh batteries) by your bedside at all times.

--Get a small LP gas lamp, as it gives good quality lighting for a large area.

Think about keeping things cool and heating them up:

--Boil water and keep it in thermos flasks for hot drinks for when the power is scheduled to be switched off.

--Use an insulating cover on teapots and other pots and pans to keep drinks hot, and meals warm.

- Prepare meals beforehand in readiness for periods when there will be power cuts.
- Obtain a small stand-by bottled LP gas heating ring for essential cooking and to boil water for hot beverages.
- Keep adequate stocks of essential foodstuffs.
- Keep refrigerator and freezer doors closed. A power outage lasting four hours should not cause food spoilage, and a freezer should keep frozen food safe for at least a day. It is a good idea to have alternative snacks available that do not need refrigeration.
- Most medication requiring refrigeration can be kept in a closed fridge for several hours without spoiling. (To be sure about this, check with your doctor or pharmacist.)
- Fill plastic containers with water (still leaving some space inside each container for expansion during freezing) in a deep freeze or the freezer compartment of your fridge. This frozen bottled water will help keep food cold during a power outage.

22. How do we tell the difference between a power fault and load shedding?

When the power goes off, it is not possible to know if it is a fault, emergency load shedding or a scheduled load shedding except by looking at the published schedules.

If an outage occurs at a different time to the published schedule, or goes on for longer than the published time, and emergency load shedding is not being publicised in the media, it should be treated as a fault.

Customers must always check the load shedding schedules, and any outage that does not coincide with these MUST be reported as a fault. Do NOT assume that it is load shedding. Eskom staff must ALWAYS assume it is a fault unless it coincides with confirmed load shedding.

23. Why are the municipality's customers referred to Eskom?

Municipalities are expected to share their load shedding schedules with their customers. Information must be available on the municipalities' websites.

24. Are we back at a 2008 scenario?

No, there are several important differences:

- a) Load shedding, rather than implemented continuously over several weeks, will only be implemented when absolutely necessary to protect the national power system from collapse.
- b) A National Code of Practice, developed by a multi-stakeholder working group, is now in place for load shedding. Eskom and the municipalities are required by NERSA to implement this Code of Practice.
- c) Load shedding schedules in terms of this Code are designed for three Stages of load shedding (Stages 1,2,3) – i.e. clear time slots are defined for specific customers for each of these stages. The schedules need to be communicated by individual supply authorities to their customers
- d) Eskom has worked closely with its large customers to implement demand reduction as defined in the Code. The Code defines specific criteria for critical loads, and how these should be treated in an emergency.