



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Load-shedding FAQs

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1. Why do we have load-shedding?

The likelihood of load-shedding increases when there is a lot of demand on the power system. It is impossible to accurately predict when we will have to reduce the load on our power supply, but we can all help to [lessen the chances of load-shedding](#).

The City of Cape Town implements load-shedding in accordance with the load-shedding schedule, this schedule covers the areas where we supply electricity.

Load-shedding is implemented in stages and depends on the extent of the shortage of electricity generation. Stage 1 is the least serious and stages 3b and 4 are the most serious.

The scheduled electricity outages generally last for about 2, 5 hours with one area being affected at a time during stage 1 and four areas being affected at a time during stages 3b and 4.

The City only implements load-shedding when we are instructed to do so by Eskom's National Control Centre. The decision to implement load-shedding is therefore beyond our control and often at short notice.

2. Who decides the time schedule for areas? What can influence this decision?

Eskom instructs the City to load shed.

The City of Cape Town's Electricity Generation and Distribution Department designs the load-shedding schedule. This schedule has been implemented since 1 February 2015 and provides a more frequent rotation as it is implemented in accordance with the days of the month.

3. Would the City be able to avoid load-shedding?

It would be difficult for the City to avoid load-shedding altogether. The City is sometimes able to reduce the impact of load-shedding due to the operation of our hydroelectric plant at the Steenbras Dam.

The plant is normally used for 'peak lopping'. During periods of peak demand in the day, when energy purchases from Eskom are most expensive, the water from the upper storage reservoir is released to the lower reservoir. This creates hydroelectric energy for the City and thereby reduces demand from Eskom thus saving the ratepayer money.

Surplus national generating capacity is then employed during off-peak hours to pump water back to the upper storage reservoir so it can be used again during the next peak.

This plant may generate spare capacity which can be used to off-set load-shedding outside the peak periods and at times when these peaks are low. However, this is not a given. Note that we are only able to avoid stage 1 of load-shedding, or reduce load-shedding by one stage, when this is possible.

4. What is the amount energy the city gets from its own sources?

In addition to the 180MW Steenbras hydroelectric scheme, the City also operates the Roggebaai gas turbines (42 MW) and the Athlone gas turbine (36 MW) both of which are also used for lopping peaks but operate for much shorter periods after maximising the output of Steenbras due to the more expensive fuel (Aviation Jet-A1) that is utilised.

5. Will the City ever rotate the load-shedding schedule?

The City plans to rotate the schedule on a regular basis. Residents are advised to familiarise themselves with the [schedule](#) and to check regularly, in case there have been changes.

6. When will Cape Town be updating its load-shedding schedule in response to Eskom's announcement that it will henceforth be implementing load-shedding in eight stages, not four?

The City has developed load-shedding schedules for the full 8 Stages of load-shedding as required by in National Regulatory Service (NRS) standard 048. This is not a new requirement. However, we only advertise Stages 1 to 4. Stages 5 to 8 are kept up to date and will be publicised only if it looks like there is a realistic chance that we will need to implement them.

7. How much warning do you receive from Eskom in regards to implementing load-shedding?

We communicate any load-shedding to our residents as soon as we receive notification from Eskom. Very often, this message is communicated at very short notice. While we would prefer to give our residents advanced warning, we unfortunately have to rely on Eskom for communication.

You can follow the City on Twitter at <https://twitter.com/CityofCTAlerts>

8. What can residents do to limit the need for load-shedding?

Reducing your electricity usage at home and at the office, and encouraging your friends and family to do the same can help limit the chances of load-shedding. You can start by doing the following:

- **Switch off those appliances that you don't need** – this is the golden rule when it comes to saving electricity
- **Delay switching on lights and appliances** until after the peak periods (between 17:00 and 21:00) whenever possible
- **Switch off your pool pump, geyser and other large electrical equipment**, and never run both at the same time
- Adjust **air-conditioners to 23 degrees Celsius if you need to use it**
- Retrofit your homes and businesses with **energy efficient lighting**
- **Visit the [Saving Electricity website](#)** for more tips to save electricity

9. How can I prepare for load-shedding?

Information about when load-shedding will occur can be found on [our website](#) as well as via the [Eskom web page](#). Residents can also call the City on 0860 103 089 for more information about load-shedding.

These websites will provide an area map and the schedule for the different stages of load-shedding.

You should check these pages regularly so you are aware of the state of the power system and whether the country is likely to load shed. Use this information to plan in the event of load-shedding in your area.

You need to think about:

- **Communication:** Ensure that your cell phone, laptop, tablet and radio are always fully charged when power is available. This will allow you to be able to communicate to friends and family during load-shedding.
- **Transport:** Make sure that your vehicle always has fuel in the tank as most petrol stations are unable to pump fuel during power outages.
- **Cash:** Keep some cash on you as ATMs cannot operate without electricity.
- **Security and safety:** Backup batteries for electrically operated gates, garage doors and security systems should be in a good working condition and be able to last through periods of load-shedding. Store temporary lighting such as battery-powered torches, gas lamps and candles in places where they will be easy to find in the dark.
- **Eating:** If you do not have a gas stove, prepare meals before the power is scheduled to be switched off. Boil water in your kettle and keep it in thermos flasks for hot drinks. You can also use an insulating cover on teapots and pots and pans to keep drinks and meals warm.

You should also:

- Buy 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 – especially non-perishable tinned food that does not need refrigeration
- Keep refrigerator and freezer doors closed. A power outage that lasts for four hours or less should not cause food to spoil. A freezer should keep frozen food safe for at least a day
- Most medication requiring refrigeration can be kept in a closed fridge for several hours without spoiling but you should check with your doctor or pharmacist if in doubt
- Fill plastic containers with water and store them in a deep freeze or the freezer compartment of your fridge. Leave some space inside each container for the frozen water to expand and use the frozen bottled water to keep food cold

If it is essential that you have power, then consider investing in a petrol, diesel or gas-powered generator, a Photovoltaic Generator with batteries, or a UPS system designed to power those pieces of equipment and appliances that you consider essential.

10. Can load-shedding damage my appliances and if so what should I do to prevent this?

Electronically controlled appliances such as computers, television sets, VCRs and DVD players can be damaged after power comes back on. This is because the power may come back on with a momentary surge.

It is safer to turn off (or even better, disconnect) any electrical appliances that you have been using before load-shedding takes place. This includes all but one light, which should be turned off at the switch. The light that is left switched on will help you to see when the power returns. You can mark the on/off switches on this light with a piece of masking tape if necessary.

You will also need to reset the time-control clocks on cooking ovens, pool pumps, geysers and other automatically controlled appliances, unless these are battery operated.

Please note: Public liability claims as a result of damaged appliances due to power surges/load-shedding is based on whether the claimant suffered loss and the loss was due to negligence or omission on the part of the City.

11. What precautions should I take in case load-shedding happens while I am not at home?

Before leaving home, switch off and disconnect all non-essential appliances such as computers, coffee machines, television sets and entertainment consoles. You should also switch off your geyser so that you do not heat water unnecessarily. (Remember to switch it on as soon as you return or install a geyser timer or ask a neighbour to switch it on for you a few hours before you return, so you have warm water when you are back home).

You should also:

- Use a timer for any lights that you want to leave on for security purposes, so they are not left on all day and night
- Replace conventional outdoor lights with motion sensor lamps. These use less electricity because they only activate when the sensor is triggered
- Switch to solar-powered garden lights which use free energy from the sun
- Leave your refrigerators and freezers as empty as possible
- Make sure that the backup batteries in your electrically operated gates, garage doors, alarms and electric fences are in good, working condition
- [Fix leaky taps](#). Water that drips down the drain is wasted and if it is warm water, it also wastes electricity
- Set your pool pump to operate for a maximum of four hours a day, outside of peak times (17:00-21:00). This is enough to keep the pool clean when not in use
- Leave a key with trusted neighbours, friends or family and ask them to check your property regularly, and make sure that the main switch or earth leakage has not tripped (i.e. all essential appliances such as security systems, fridges and freezers are still functioning)

12. Why is my power still off even though, according to the load-shedding schedule, it should have come back on?

When power is restored, nuisance tripping sometimes occurs. This is when the power fails to come back on and it often goes unreported because residents assume that the outage is due to load-shedding.

You can mitigate against the risk of nuisance tripping by switching off appliances (including geysers, air conditioners and pool pumps) prior to load-shedding and leaving one light on, to indicate the return of the supply.

General faults can be confused with load-shedding which sometimes leads to a delay in reaction time. If you experience an outage at an unscheduled time, or the electricity supply remains off for longer than the period specified in the schedule, please SMS the details to the City's Technical Operations Centre on 31220.

13. I live in a very dangerous area. Will the City consider keeping the lights on for safety reasons?

The load-shedding schedule has been determined in a manner that attempts to be fair to all areas of the city and designed to mitigate negative effects.

The City will consider excluding an area from load-shedding if the area is prone to high levels of violent crime or gang activity. However, the decision to exclude a suburb is based on a number of considerations.

We have to see if it is technically possible (due to the way the grid is structured) and the broader implications that the exclusion will have for the whole city. We will also consult the Metro Police for their advice.

14. Why are some areas/streets excluded from load-shedding?

The City is guided by the national standard for load-shedding, referred to as Regulation NRS048-9.

This regulation sets out the following criteria for the implementation of load-shedding:

- the safety of people
- the safety of the environment
- the potential damage to plants associated with a critical national product (wastewater treatment works)
- technical constraints on executing load-shedding

Based on these criteria and where possible, the City does exclude major hospitals, major central business districts and areas where there are major crowds gathered for specific events.

Areas that have been previously excluded are the Table Mountain cable car, as well as parts of the central business districts (CBDs) and major hospitals. Some residents and businesses may be excluded from load-shedding if their properties share a dedicated circuit with these places.

15. Why does the City sometimes avoid load-shedding or implement load-shedding at a lower level than has been announced by Eskom?

The City can sometimes avoid load-shedding, or remain on a lesser stage than Eskom has requested. This is only when we have extra power generated by the Steenbras pumped storage scheme.

The Steenbras power station was the first hydro-electric pumped storage scheme in Africa when it was built more than 30 years ago. Each of the station's four 45 000 kW generator units act as a pump-motor in one mode and a turbine-generator in the other.

Electricity generated during relatively low-cost off-peak periods (at night) is used to pump water from a lower to an upper storage reservoir. During periods of peak demand in the day, the water

is released back to the lower reservoir, thereby generating electricity like a conventional hydro-electric power station.

This facility helps reduce the demand for electricity during peak times and avoids peak tariffs. In winter, peak time typically falls between 06:00 and 09:00 in the mornings and 17:00 and 19:00 for evenings. Outside that window, the City may at times have spare capacity which can be used to offset load-shedding in stage 1 or reduce a higher stage to a lower stage e.g. from Stage 2 to Stage 1.

16. Why are we paying service charges for electricity on days that our electricity has been cut due to load-shedding? Surely we should be refunded for this as there is no service delivery?

Service charges are in place to recover, among other things, the cost of maintaining and operating the electricity distribution network. These costs do not decrease in proportion to the number of hours that electricity is available. In fact, if anything, they increase due to the increased stress on the network.

17. What are the risks involved in load-shedding?

The City has identified certain risks. These include:

- The direct stress on infrastructure including substations
- Water pumps not being able to provide pressure to higher lying areas, and/or not filling reservoirs adequately. This risks the availability of water and results in additional costs of building larger pumps and larger reservoirs
- Sewer pumps unable to operate causing an overflow into our streets and rivers. This would cause health risks and clean-up costs, and/or the need to provide standby generators
- Traffic lights that do not work can cause traffic disruptions and have a direct economic impact. There may be a need to provide uninterrupted power supplies at each intersection

Load-shedding also affects confidence in the city's economy and the ability for businesses to operate. There is a serious impact on those industries that need continuous electricity supply for their production.

Furthermore, as people take steps to protect their needs through alternative energy supply, we will continue to see a gradual decline in electricity sales, and therefore a smaller pool of people paying the rates that fund the network's distribution and maintenance.

The cost of maintaining the grid remains the same regardless of how many people are connected to it and how many actively use electricity from it. This could make our current system of electricity supply economically unsustainable.

18. Could load-shedding affect water supply?

The disruption of the electrical supply due to load-shedding results in the shutdown of most water pump stations. This can affect the drinking water supply to a number of the high-lying areas in the northern, eastern and southern suburbs of the city.

It can also cause the sewage pump stations to shut down, occasionally resulting in sewage spills. Electricity outages are limited to approximately 2, 5 hours per area to minimise the negative impact. Furthermore, certain sewage pump stations are equipped with extra storage capacity and generators to help them stay operational.

However, it is not possible or economically viable to implement all of these measures at all of the sewage pump stations. The City therefore needs the assistance of residents to manage this situation as far as possible.

Most domestic water consumption ends up in our sewerage system. It is therefore imperative that, during the periods of load-shedding, residents minimise their water consumption. This will reduce the strain on the reservoirs and assist the City in managing the situation.

19. Is the City looking at options to reduce reliance on Eskom power supply?

Yes. The City is aware that it needs to diversify its supply of electricity. One way to do this is by purchasing electricity directly from independent power producers (IPPs). Government policy allows IPPs to only sell electricity to Eskom, which is controlled through the issuing of generation licences.

The City is challenging National Government in the courts for the right to purchase renewable energy directly from IPPs. We are also exploring whether National Government would allow us to purchase a limited amount of renewable energy directly from IPPs at the same cost at which the City purchases electricity from Eskom.

Another option is the building of a fleet of smaller City-owned renewable generation plants and developing a 'wheeling' framework which will allow independent generators to sell electricity directly to electricity consumers embedded in the City's electricity grid.

The City also signed a R127 million donation agreement in June 2018 with the United States Trade and Development Agency for a study into the usage options of natural gas and look forward to the results.

20. What is the City doing to reduce electricity consumption in its own operations?

The City consumes 4% of the total electricity used in the metro. We are committed to improving the management of energy use in all municipal operations and improving resource efficiency, reducing its carbon footprint and saving money.

From 2009 to 2016, we have saved over 102 000 MWh of electricity and 101 000 metric tonnes of carbon dioxide levels, equalling R180 million.

Other successes include:

- 57% of the City's corporate buildings being retrofitted, including 44 large administrative buildings
- 523 kWp of rooftop photovoltaic systems installed on City buildings, with a further 844 kWp to be installed on seven other municipal buildings by 2020
- LED lighting installed in all traffic lights and 17% of street lights
- Over 600 smart electricity meters installed, greatly improving the City's electricity use management
- The Smart Facility which aligns location, metering and billing data from smart meters and administrative systems. The overall data feeds through to managers and staff on the ground to improve building management

A [comprehensive and accessible website](#) has also been developed by the City to support residents in reducing their electricity usage.