

Blackout/Grid- Collapse Guideline

South African Winter 2023



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**Resilience and
Preparedness
report**

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1 Introduction

“Many experts warn there is an increased risk of a grid collapse in South Africa, and insurance companies are now excluding all damages related to a total blackout.

The risk of a total blackout remains low as long as Eskom continues using load-shedding to artificially reduce demand and ensure it does not exceed supply.

South Africa’s electricity grid is designed to automatically shut down if demand exceeds supply for safety reasons and to ensure the grid can be restarted.

However, despite this safeguard, many business leaders have warned that a total blackout is not out of the question.” (Daily Investor.com)

In a statement on 16 May 2023 and Eskom spokesman said: *“Eskom notes with concern various social media posts claiming that the country will soon experience a blackout or collapse of the national electricity grid. Eskom refutes these claims and would like to assure South Africans that there are measures in place to avoid the collapse of the power system. Loadshedding is one of these mechanisms.*

The risk of a national blackout, while inherent to the operation of a large power system, has an extremely low likelihood of materialising given the implementation of a number of control measures, including loadshedding.

The grid is by no means at a higher or imminent risk of a collapse and it would take an unforeseen and sudden sequence of events that results in a cascading collapse of the transmission or generation system, leading to a complete loss of supply across the country.”

Although the probability of a total grid collapse resulting in a blackout across South Africa is **very low and in fact unlikely**, the quest remains ‘what if this happens’ and who should we believe- the ‘*experts*’ and ‘*business leaders*’ referred to above or Eskom?

In light of the uncertainty in the hearts and minds of many South Africans, we are pleased to present a guide that **outlines essential measures** to prepare for a **potential grid collapse and extended power outage**.

The objective of this guide is to provide an overview of key preparedness areas, enabling you to take proactive steps towards self-sufficiency and mitigate the impact of a grid collapse. This guide aims to equip you with the knowledge and tools necessary to ensure **resilience and self-sufficiency during challenging times**. Whether you are a household, business, or community, these guidelines will help you navigate the difficulties we foresee being associated with an unplanned grid collapse.


By implementing these measures, you will be better equipped to provide for your basic needs and protect your well-being.

2 The Scenarios

We have put together a list that provides some basic starting points. This is not comprehensive as customisation and expansion exist for all key areas. If you require any special services, contact Mondial for customised options suited to your needs.



2.1 Food Security



Bad news scenario: Don't expect shops to be fully stocked after 14 days. Everyone would have gone through the blackout. Certain fresh foods make take months to return...

Food security is a critical aspect of preparedness during an extended power outage. The objective of this key area is to ensure that you have an ample supply of non-perishable¹ food items to sustain yourself and your family for at least 14 days².

2.1.1 Key Considerations

- **Stockpile non-perishable food items for at least 14 days:** Ensure you have a sufficient supply of non-perishable food items to sustain your household for a minimum of two weeks.
- **Consider dietary restrictions and individual preferences:** Take into account any dietary restrictions or individual preferences when selecting and stocking food items for your emergency supply.

¹ Non-perishable depends on (4) Back up power solutions.

² Longer is better. Sustainable is best.

- **Learn food preservation techniques:** Acquire the knowledge and skills needed to preserve food through methods like canning, drying, or fermenting, which can extend the shelf life of perishable items.
- **Consider a small, seasonal succession garden:** To supplement your diet with fresh vegetables and herbs, establish a small-scale garden that rotates crops based on the seasons to provide fresh vegetables and herbs to supplement your stored food supply.
- **Animal husbandry:** If space or situation allows and if feasible, consider raising animals such as chickens or rabbits to enhance your food supply with eggs or meat. Ensure you have the appropriate space, resources, and knowledge to care for animals in a sustainable manner.
- **Community cooperation:** Collaborate with neighbours or local communities to share food resources and enhance overall food security.
- **Emergency food assistance programs³:** Research local programs or food banks that can provide support during prolonged emergencies. It is at this stage unknown what government or NGO responses would be towards food security but expect any interventions to be aimed at those parts of the population that have the least resources.

2.1.2 Tips and tricks

- **Long-lasting staples:** Include versatile and long-lasting items like flour, sugar, salt, and cooking oils in your stockpile.
- **Ready-to-eat foods:** Keep a supply of energy bars, dried fruits, and canned meats that require minimal or no cooking.
- **Food rotation and expiration dates:** Regularly check and rotate your stockpile to maintain freshness and consume items before they expire.
- **Cooking alternatives:** Identify alternative cooking methods like camping stoves, solar cookers, or charcoal grills, along with the necessary fuel or supplies.
- **Emergency food kits:** Consider purchasing or assembling emergency food kits with balanced ready-to-eat meals and snacks for prolonged emergencies.

2.2 Water Supply



Bad news scenario: When there is no power, pumps reticulating water through suburbs and townships will eventually run dry. In South Africa, local government is expected to have enough water storage for 24-48 hours, but these numbers vary widely. Consider whether your water is gravity fed or pump fed to where you need it.

³ If applicable in your area

2.2.1 Key Considerations

- **Water storage:** Store an adequate supply of water for drinking, cooking, and hygiene needs to sustain your household during an outage.
 - Regularly check and rotate stored water to maintain its freshness and quality for long-term use.
 - Identify and secure additional water storage containers or tanks if needed to increase your water reserves.
- **Alternative water sources:** Explore alternative water sources and purification methods to ensure access to clean water.
 - Consider investing in water purification systems or portable filters for additional water treatment options.
 - Have a backup plan for collecting rainwater or utilizing nearby natural water sources, if feasible and safe to do so.
 - Keep emergency water purification tablets or bleach on hand as a backup method for water disinfection.
- **Water rationing:** Establish a system for water rationing or usage guidelines to ensure the efficient use of available water resources.

2.3 Backup Power Solutions



Bad news scenario: Without energy or power, it may be worse than a bad camping weekend ... fridges, lights, security systems (various), medical devices⁴, cooking methods, digital equipment, power tools, charging stations ... **nothing will work!**

2.3.1 Why do you need back-up power in South Africa?

The purpose of having backup power in a grid collapse is to ensure a continuous and reliable power supply for essential devices, appliances, and systems during an extended power outage. It allows you to maintain basic comfort, meet essential needs, and have access to vital services when the main power grid is unavailable.

- **Provide a stable power source:** The primary objective of backup power is to provide a stable and consistent power source to sustain critical devices and systems.
- **Ensure essential services:** Backup power enables you to continue using essential services such as lighting, refrigeration, communication devices, medical equipment, and security systems.
- **Maintain comfort and convenience:** Backup power allows you to maintain basic comfort by powering heating or cooling systems, cooking appliances, and other essential household equipment.
- **Support safety and security⁵:** Backup power ensures the functioning of security systems, emergency lighting, and alarm systems, contributing to the safety and security of your household.
- **Preserve food and essential supplies:** By keeping refrigerators and freezers powered, backup power helps preserve perishable food and essential supplies, reducing waste and ensuring a longer shelf life.
- **Support critical medical needs:** Backup power is crucial for individuals with medical conditions that require powered medical equipment or refrigeration for medications.

2.3.2 Key Considerations:

- **Generator or solar power system:** Invest in a reliable backup power source that suits your needs, such as a generator or solar power system.
- **Fuel or batteries:** Stock an adequate supply of fuel for generators or extra batteries for battery-powered devices.
- **Extension cords and power strips:** Have a supply of extension cords and power strips to facilitate power distribution to various devices and appliances.

⁴ If applicable to your family

⁵ Lighting with regards to security is a contentious subject. Its highly dependant on property and location.

- **Surge protectors:** Use surge protectors to safeguard your sensitive electronic devices from power fluctuations.
- **Flashlights and portable lighting:** Keep a collection of flashlights, lanterns, and battery-powered lights for illumination during power outages.
- **Backup charging options:** Have portable power banks or solar chargers to keep your essential electronic devices powered. This includes charging ability at scale, if your primary source of electricity is Solar. Rainy days or overcast weather can severely affect performance.
- **Instruction manuals and tools:** Keep instruction manuals and necessary tools for operating and maintaining your backup power equipment.
- **Regular maintenance and servicing:** Establish a schedule for regular maintenance and servicing of your backup power system to ensure its reliability.
- **Emergency contact information:** Maintain a list of emergency contact numbers, including electricians or service providers who can assist with backup power issues.

Remember to review and test your backup power system periodically to ensure its functionality and address any maintenance or repair needs.

2.4 Security Measures



Bad news scenario: Don't expect someone to come to your rescue. You WILL become your own first responder for security, fire and medical needs. Opportunism or crime out of desperation (to gain food, resources etc) are likely to increase during a blackout situation, worse so being mobs or civil unrest requiring even more resources and equipment to deal with a threat of that magnitude (community counteraction).

During a grid collapse and extended power outage, ensuring the security of your home or facility becomes crucial. Without the support of municipal services and potential disruptions to law enforcement, taking proactive security measures becomes essential. Implementing effective security measures can help protect your property, belongings, and personal safety, providing peace of mind during challenging times.

2.4.1 Why you need to think about this?

- **Deter potential threats:** The primary objective of security measures is to create a visible deterrent for potential intruders and criminals, reducing the likelihood of security breaches.
- **Protect property and belongings:** Implementing robust security measures aims to safeguard your property, valuables, and essential supplies from theft or damage.
- **Ensure personal safety:** By enhancing security, the objective is to create a safe environment for yourself, your family, and anyone within your premises during a grid collapse.

- **Maintain order and peace of mind:** Security measures contribute to maintaining order and peace of mind, helping to alleviate stress and anxiety during an already challenging situation.

The purpose of implementing security measures during a grid collapse is to establish a protective environment that ensures personal safety, deters potential threats, and safeguards property and belongings. By adopting proactive security measures, you can reduce the risk of security breaches, minimise vulnerabilities, and maintain a sense of security and well-being within your premises.

2.4.2 Key Considerations:

- **Assess and fortify vulnerabilities:** Conduct a thorough assessment of your property to identify any weak points that may be exploited.
 - Enhance home or facility security with upgraded or security rated doors, gates, windows, walls, fences, roofs, and locks.
 - Install a security system or surveillance cameras to deter potential threats but consider how these will be energised if there's no power.
 - Develop a comprehensive plan for self-defence and property protection.
 - Secure your property by reinforcing doors and windows and maintaining good lighting.
- **Utilize technology:** Install security systems or surveillance cameras to monitor your property. Consider motion sensor lights and alarms to detect and deter potential intruders.
- **Plan for self-defence:** Develop a comprehensive plan for self-defence and property protection. Learn self-defence techniques and equip yourself with personal safety tools such as pepper spray or personal alarms.
- **Establish communication networks:** Create an emergency communication plan to stay connected with neighbours and authorities.
 - Exchange contact information with trusted neighbours for mutual support and communication.
 - Formulate an emergency communication plan to stay connected with family, friends, neighbours and authorities.
 - Keep a list of emergency contact numbers for local law enforcement and emergency services.
- **Stay vigilant and aware:** Remain vigilant and informed about local crime trends. Report any suspicious activities or incidents promptly to local authorities.
 - Trim vegetation and trees near your property to eliminate potential hiding spots for intruders.
 - Do regular inspection and maintenance of your security measures to ensure they remain effective.
 - Secure valuable items in a locked safe or hidden location within your property.

- Develop an evacuation plan and establish a designated meeting point for family members in case of emergencies.
- **Collaborate with the community:** Join or establish neighbourhood watch programs or community safety initiatives. Collaborating with neighbours can enhance overall security and foster a sense of community resilience.
- **Emergency preparedness:** Keep emergency supplies, including flashlights, first aid kits, and emergency food and water, easily accessible.
 - This can aid in assistance to those in need, that you are able and willing to assist but they are not allowed to join you and your family. (Distant friends, neighbours, passer-by's, etc)

Remember, security measures should be tailored to your specific circumstances and resources. Regularly review and update your security measures to adapt to changing situations and emerging threats. By taking proactive steps to enhance security, you can significantly contribute to the safety and well-being of yourself and those around you during a grid collapse.

2.5 Sanitation and Hygiene



Bad news scenario: Do you remember those water pumps? Check property location and confirm sewage flooding is not a potential risk, as this would create significant hygiene concerns. Wastewater Municipal sanitation systems will be non-operational during this period and will require site specific alternatives.

Maintaining proper hygiene and sanitation practices during a grid collapse is crucial to prevent the spread of diseases, ensure personal well-being, and maintain a clean and healthy living environment. In the absence of regular access to municipal services, it becomes necessary to plan and prepare for alternative sanitation facilities and adopt appropriate hygiene practices.

The purpose of adopting hygiene and sanitation measures during a grid collapse is to safeguard personal health, minimize the risk of diseases, and maintain a clean and hygienic living environment. By planning for alternative sanitation facilities and stocking up on essential hygiene supplies, you can ensure proper sanitation practices even in the absence of regular municipal services.

2.5.1 Key Considerations:

- **Plan for alternative sanitation facilities:** Consider backup toilets or composting systems as an alternative to regular flush toilets. Research and identify suitable options based on available resources and space limitations.
- **Stock up on hygiene supplies:** Ensure you have an ample supply of essential hygiene items such as hand sanitizer, toilet paper, soap, disinfectants, and cleaning products. Take into account the needs of each household member, including any specific requirements or preferences.
- **Consider wastewater disposal:** Plan for the proper disposal of wastewater generated from cleaning and sanitation activities. Explore options such as drainage systems, designated areas for wastewater disposal, or appropriate treatment methods.
- **Periodically review and restock supplies:** Regularly assess your hygiene supplies and replenish them as needed to ensure you are adequately prepared for an extended grid collapse.

2.6 Heating and Cooking



Bad news scenario: Without a gas heater, or a gas stove, and without a sufficient backup supply of gas you could be in trouble.

Having reliable heating and cooking methods is essential during a grid collapse to ensure warmth, prepare meals, and meet basic needs. Exploring alternative heating sources and equipping your premises with suitable cooking alternatives will enable you to stay warm and cook food even without access to conventional utilities.

The purpose of focusing on heating and cooking solutions during a grid collapse is to provide warmth, facilitate meal preparation, and maintain a sense of normalcy and comfort in your living environment. By exploring alternative heating sources, equipping yourself with cooking alternatives, and securing the necessary fuel, you can adapt and overcome the challenges of a power outage.

2.6.1 Key considerations:

- **Explore alternative heating sources:** Consider options such as fireplaces, wood-burning stoves, or portable heaters to provide warmth during a grid collapse. Ensure these alternatives are installed safely and comply with local regulations. Regularly inspect and maintain them for optimal performance.
- **Equip your premises with cooking alternatives:** Invest in camping stoves, grills, or solar cookers as backup cooking methods. These options can be used outdoors or in well-ventilated areas. Familiarize yourself with their operation and safety guidelines.

- **Ensure an adequate supply of fuel:** If your alternative heating or cooking methods require fuel, stock up on the necessary resources, such as firewood, propane, or charcoal. Calculate your estimated usage and store an appropriate amount to sustain your needs throughout the blackout period.
- **Consider energy-efficient solutions:** Explore energy-efficient heating options, such as thermal blankets, insulated clothing, or sleeping bags, to reduce the reliance on external heating sources. These measures can help conserve energy and extend the availability of fuel or resources.
- **Practice safe heating and cooking practices:** Adhere to safety guidelines when using alternative heating and cooking methods. Keep flammable materials away from heat sources, maintain proper ventilation, and operate appliances in designated areas. Regularly check for gas leaks or malfunctions and address them promptly.
- **Prepare backup supplies:** Have a backup supply of essential cooking utensils, matches, lighters, cooking fuel, and necessary accessories readily available. Check expiration dates on fuel canisters and replace them as needed. Keep a manual can opener handy for opening canned goods.

By considering alternative heating sources, equipping your premises with cooking alternatives, and securing an adequate fuel supply, you can maintain warmth, cook meals, and sustain your essential needs during a grid collapse. Being prepared and knowledgeable about these options will enhance your resilience and adaptability in challenging situations.

2.7 Communication Networks



Bad news scenario: Cellular services and internet providers will also run out of energy, and this will create drops in communications if not a total loss of communication as we know it. Moreover, congestion on any open lines will cause delays and drops.

Maintaining effective communication channels during a grid collapse is crucial for staying connected, receiving vital information, and coordinating with loved ones. Establishing a reliable communication plan and having backup devices will help ensure you can stay informed and connected during challenging times.

The purpose of focusing on communication strategies during a grid collapse is to ensure effective communication, information sharing, and coordination with loved ones and relevant authorities. By establishing a communication plan, acquiring backup devices, and staying informed, you can enhance your ability to respond to emergencies and stay connected in challenging circumstances.

2.7.1 Key considerations:

- **Establish a communication plan:** Develop a communication plan with your family, friends, and neighbours in advance. Determine a designated meeting point or an out-of-area contact person to relay important messages. Share contact details and establish alternative methods of communication, such as phone numbers, social media accounts, or messaging apps.
- **Acquire backup communication devices:** Invest in battery-operated radios, walkie-talkies, or satellite communication devices to ensure communication capabilities during a grid collapse. Familiarize yourself with the operation of these devices and keep spare batteries or charging options available.
- **Consider satellite communication devices:** In situations where longer-distance communication may be necessary, satellite communication devices can provide reliable connectivity. Explore options such as satellite phones or satellite internet devices to stay connected beyond local networks.
- **Stay informed through emergency channels:** Stay tuned to local emergency channels, community updates, and official government communication channels. These sources can provide important information, advisories, and instructions during a grid collapse. Keep a battery-powered or hand-cranked radio for accessing news updates.
- **Utilise community communication platforms:** Join community groups or neighbourhood networks that facilitate communication and information sharing during emergencies. These platforms can be valuable for exchanging resources, updates, and support within your local community.
- **Share information responsibly:** During a grid collapse, misinformation can spread rapidly. Verify information from reliable sources before sharing it with others. Encourage responsible communication practices within your network to ensure accurate information is disseminated.
- **Practice communication drills:** Regularly practice your communication plan and test your backup devices to ensure they are in working order. Conduct communication drills with your family members to ensure everyone is familiar with the procedures and devices.

By establishing a clear communication plan, acquiring backup devices, and staying informed through reliable channels, you can maintain essential communication and stay connected with your loved ones during a grid collapse. Effective communication plays a crucial role in coordinating resources, accessing critical information, and ensuring the well-being of yourself and those around you.

2.8 First Aid and Medical Preparedness



Bad news scenario: Let's look at a best case, the kit gathers dust, the medication expires, and the knowledge dwindles. Injuries or ailments of any kind can become life threatening in a normal situation, let alone when roads, communication, emergency services and hospitals may all be non-operational. What will you do if a loved one gets sick or injured over the period?

During a grid collapse, access to medical facilities and emergency services may be limited. Being prepared with first aid knowledge and supplies is essential to address common injuries and medical emergencies. Maintaining a well-stocked first aid kit, acquiring basic first aid skills, and ensuring access to necessary medications and medical equipment will help you respond effectively in challenging situations.

2.8.1 Key Considerations:

- **Maintain a well-stocked first aid kit:** Regularly check and replenish your first aid kit with essential medical supplies. Include items such as bandages, sterile dressings, adhesive tape, antiseptic solutions, pain relievers, scissors, tweezers, and gloves. Customize the kit based on your family's needs, including any specific medications or medical supplies required.
- **Learn basic first aid skills:** Enrol in a first aid training course or attend workshops to learn essential first aid skills. Focus on topics such as CPR (cardiopulmonary resuscitation), wound care, burns, fractures, choking, and basic life support techniques. Refresh your knowledge regularly to stay confident and updated.
- **Ensure access to necessary medications and medical equipment:** If you or any family member requires prescription medications, ensure an adequate supply is available. Store medications properly and regularly check expiration dates. Make arrangements to access medical equipment like nebulizers, blood glucose monitors, or insulin for individuals with specific medical needs.
- **Create an emergency medical information document:** Prepare a document that includes essential medical information for each family member, such as allergies, chronic conditions, medications, and emergency contact details. Keep a copy in your first aid kit and share it with trusted family members or neighbours who can assist during emergencies.
- **Include emergency contact numbers:** List emergency contact numbers, including local hospitals, medical professionals, and poison control centres, in your first aid kit or store them on your mobile devices for quick access.
- **Regularly inspect and replace expired items:** Periodically check your first aid kit for expired items and replace them promptly. This ensures that the contents of your kit are up to date and effective when needed.

- **Stay calm and reassured:** In emergency situations, remaining calm and composed is crucial. Keep a clear head and focus on providing necessary care and support to the injured or affected individuals. Communicate clearly with them and reassure them until professional help arrives.

3 General Considerations

3.1 Mental and Emotional Well-being

- Address the emotional challenges of a blackout by fostering open discussions within your household or community.
- Prepare activities to reduce stress and promote well-being,
- Support each other and prioritize mental health during this period.

3.2 Financial Preparedness

- Keep emergency cash reserves or have access to alternative forms of payment.
- Consider creating a budget or financial plan to manage expenses during the outage.
- Consider offshore reserves to access in case of evacuation or relocation during the ensuing chaos.

3.3 Evacuation plans

In a worst-case scenario, and in the instance of an opportunity to exit, ensuring passports, cash, personal belongings, a “go bag” and any necessary items or pets are ready to go at a moments’ notice is critical. Mondial only recommends evacuation if you have a location that is better off than where you are and is well equipped. No plan will cause more harm being on the move. Do not travel after 48/72 hours after a grid collapse due to safety concerns. Your preparations are hopefully in place and get ready to ride it out.

Prepared | Agile | Resilient

Please contact us if you have any questions or concerns of your own.

From the Mondial Team.



Address:
Corner Main Office Park,
Block A, 2 Payne Road,
Bryanston,
Gauteng
2191

Tel : +27 11 568 3412
Fax : +27 86 564 0005
Email: info@mondialcons.com
Web site: www.mondialcons.com