Off-the-grid options improve

With rising electricity costs and load shedding set to continue, South Africans are in for a rough ride. Add drought as an ongoing concern, and it's perhaps high time to go off the grid.

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Eskom has just won a court case to increase electricity tariffs with 10% in an effort to recoup a R69bn loss. Load shedding is also still on the cards, and droughts and water restrictions are now part of the South African reality.

Fortunately, ecofriendly alternatives exist that will also reduce your carbon footprint and save you money.

SA is ideal for solar power

Our warm, dry climate is perfect for generating household solar power. By installing solar panels you can save a substantial amount through the back-up electricity generated and increase the investment value of your property.

Alternative electricity sources

Although the initial outlay could be expensive, in the long run, solar panels are one of the most cost-effective alternative power sources for households. Good news is that increased popularity has seen cost declining, and local companies offer financing options.

Some pointers if you're considering to switch over:

- Familiarise yourself with your monthly electricity bill to understand the size of solar system you require.
- It's cheaper to reduce than to produce – use LED efficient elements, or even solar geysers to reduce consumption.
- Consider going partially off the grid rather than completely, which will require a large investment in batteries.
- Solar systems without batteries pay for themselves in four to five years, which is when you will truly start reaping the benefits.
- Solar systems with battery back-up normally take eight to ten years to pay off.

Baby steps before going off the grid

If you're considering going completely off the grid, be practical and work according to your budget and needs. As your geyser uses about 45% of household electricity, it's a good place to start.

Here are some options:

- Retro-fit your standard electrical geyser to either a gas- or solar-powered water heating system through an accredited installer.
- A geyser timer and blanket are clever ways of saving money and energy.
- Insulating your geyser pipes and ceiling also prevents heat loss and improves efficiency.
- Install your new geyser above or close to hot water points – it prevents water from cooling on route to the tap.
- Reducing the temperature setting on your thermostat can save up to 10% on your electricity bill.

Inexpensive and powerful

A unique and very cost-effective option (it's considerably cheaper than a solar geyser system) is the Xtend 2kW element that saves up to 25% on hot water costs.

It replaces standard resistive wire elements with a ceramic element, which uses PTC (positive temperature coefficient) technology to heat the water more efficiently.

Director of Northface Energy Jason Pournara explains, "Simply put, the element starts off drawing power at 2kW, but as the water heats up the draw decreases. This is unlike conventional elements, which work harder the hotter the water gets. If we all had Xtend elements, the pressure on the grid would be eased and consumption reduced across the board."

Wind turbines

If you have plans to move off the national power grid, wind turbines are an excellent place to start. For household use a vertical axis turbine is more practical as its operating system is close to the ground and easy to maintain, as opposed to one with a horizontal axis.

Although a wind turbine may not meet all your electricity needs, they generate enough power to reduce consumption, and excess power generated by windy days can be stored or fed back into the national power grid to credit your electricity bill. They're not noisy, do not interfere with TV reception, and don't bother birds or bats.

If you live in an urban area, first confirm with your municipality and check your existing solar system's size to ensure it matches your turbine's voltage. Know the average wind speed in your area – low-speed areas may need a five-blade turbine.

Invest in a water tank

Poorly maintained water infrastructure means communities are often left without water. Invest in a water tank as back-up. It gets connected to your main water supply and fills automatically, ready to be used in emergencies.

You can determine the size of the tank you need by multiplying your daily consumption with the total days of back-up needed. The average South African uses 150 litres of water per day.

Harvesting rainwater

Harvested rainwater can be stored in tanks and used for gardens, toilets, washing clothes and topping up pools. Water tanks are extremely efficient collectors: A 50m^2 roof can harvest up to 23,000 litres of water per year.
Benefits:

- It reduces the water on the ground, which decreases the chance of flooding by up to 60%.
- It's better for your garden as rainwater has a balanced ph and is chemical free.
- The system is uncomplicated and reliable, requiring minimal maintenance.
- Up to 86% of household water needs can be met through rainwater harvesting.