

## Some Guidelines For Power Problems

Watamu is badly affected by KPLC power cuts, causing much aggravation and appliance breakdowns.

But all is not lost! There are ways around this!

If during a power cut you simply need lighting, the cheapest solution is to install smart lights. These contain a small battery and automatically turn on when there is a cut. Good for several hours, these will take you through most outages, and are available in Timboni hardware shops.

For requirements of longer duration, or if you want TV etc., then you will need to invest in a battery stack and an inverter, the size and therefore expense determined by how much power you need in a day. How big a stack? First you must estimate daily needs of power, measured in Watt hours.

If you want 5 x 20 watt bulbs on for 6 hours each per day, then consumption will be 5 times 20 times 6 equals 600 Watt hours. Battery capacity is given in Amp hours, so a small saloon car battery is around 35 Amp hours. How to convert Watts to Amps? Simply divide wattage by battery voltage, so 600 by 12 for a 12 volt battery, that is 50 Amp hours. This is half the capacity of a Chloride Solar 100 Amp hour battery from Total petrol station at 12,500 Ksh, my preferred easily available type.

To convert 12 volt DC battery power to 240 volt AC as mains power, you need an inverter. A 200 Watt model, so twice the power you need for the example above, goes for 3500 Ksh from Mike Electronics in Timboni. This is actually an inverter/charger, so it tops up your battery stack when mains power is available, thereby bypassing the need for solar panels. If you want to add panels also, they are 13,000 Ksh for a 200 Watt panel, which given 5 hours exposure to direct sun

per day would give you 1000 Watt hours, or 83 Amp hours power per day. The choice is yours.

A bigger inverter charger, 500 Watts, would also run your TV and computer, for 4500 Ksh.

Bigger still and you can run fridges also, with a bigger battery stack as it is good practice not to run your batteries lower than 30% capacity on a daily basis.

And that is it!

A couple of caveats. First, you will need to get a manual or automatic switch over installed in a suitable position. Get a proper electrician to do this.

Second, pumps have a considerably higher start up Wattage than stated on the label. Get an inverter than is at least 50% bigger than your maximum load. So if your lights and fridge etc. add up to 600 Watts when running, get a 900 or 1000 Watt inverter to cope with demand surges.

Finally, do not use for electric cookers, showers etc. Even a kettle uses 3000 Watts plus! Use gas instead.