BATTERY POWER FOR LOAD SHEDDING AND SOLAR APPLICATIONS

Alternatives to Eskom power

Following months of power outages due to load shedding many South Africans are looking to install backup power systems to cover for these outages and in extreme cases to install a complete solar system to reduce or even eliminate their dependence on the National Grid. If you are contemplating such measures it is important to be informed as to the correct battery to power your system. First National Battery manufacture and supply a range of world-class batteries which are expertly designed to work in these applications.

The correct battery for the right application

Whether supplying power to operate a few light loads such as the TV, decoder, computer and lights during load shedding, a bigger system to power fridges, washers, vacuum cleaners and other appliances or any other duty that requires the battery to be discharged to any great extent the standard automotive battery is totally unsuitable. The Automotive battery uses very thin plates to provide a large surface area for delivering very high currents for very short periods of time. If this battery is discharged to some depth at low currents they will give the rated capacity initially but will rapidly lose power due to active material shedding from the plates. Typically, if used for 3-hours daily to power TV, decoder and a light a 45Ah automotive battery is unlikely to last more than 2 to 3 months.

For providing backup power for light loads namely, TV, radio, cellphone charger and few lights or off grid solar application for low cost housing we would suggest the Excis SMF100, 12 Volt battery which is a 102Ah

battery. These have thicker plates with a more dense paste combined with dual glass matt separation to prevent shedding of active material. When used under normal conditions, this battery does not require topping up with battery water. The Excis 100, when used to provide backup power during load shedding or for off grid solar application will give 350 cycles at 50% depth of discharge. As a rule of thumb, batteries for solar application are sized to allow about 25% to 30% depth of discharge. This allows for the battery life to be extended. To control the depth of discharge, it is important to set low voltage disconnect at the right levels. If the Excis SMF100 is sized properly one should be able to get up to 4 years of service life.

For you to achieve the desired cycle life out of the Excis SMF100, it is important to make sure that the battery is charged properly and the inverter/charger used is programmed with the correct charge profiles. The correct charging profile for this battery is available on request from First National Battery. The choice of inverter/charger used has an impact on the performance of the battery. For major household solar applications, we recommend the use of tubular positive plate technology batteries. These are supplied by us as 2V cells and their capacity ranges from 150Ah to 3000Ah. We have two main types of battery cells i.e. RCT or Motive Power ranges. Because of their construction these batteries are particularly suited for regular deep cycling and give 1248 cycles at 80% depth of discharge. The RCT ranges are free standing units whilst the more cost effective Motive Power batteries need to be supported in cell trays or clamps.