



MADISON SOLAR ENGINEERING

MADISON INVESTMENTS (PVT) LTD

A sneak preview...2010 and the expected battle for Energy in Zimbabwe

2010 will certainly be an interesting year with lots of challenges ahead and hopefully more positive and sustainable developments in Zimbabwe especially in the fragile energy sector.

Currently Kariba Hydro power station is undergoing an overhaul for due maintenance and repairs. For the last three weeks most parts of the country were again plunged into darkness with extended power cuts on end. Hwange power station and Hwange colliery are according to an article in "The Herald" also receiving new technical equipment and preparing for increased mining and production. All this effort may even lead to more reliable power supplies for the national grid which certainly would be highly appreciated by everybody badly affected from unpredictable power cuts and electricity interruptions.

But let's face it, maintenance is simply just that and should be done on a regular bases anyway. It does not necessarily mean grid power production can or will be increased in the near future. As long as the country does not invest in new sustainable power generation or new power plants to be built there will be no significant change to the current situation. We still have to import about 40% (to cover part of our energy needs) from neighbouring countries which at times produce more than needed for their own consumption.

At current an estimated 20% of Zimbabwe's industry is in production and that means only 20% currently require electricity for their operations. For an economic turnaround more industrial activity is needed to produce the desperately desired foreign currency which can only be generated through exports. The industry on the other hand is certainly the biggest consumer of electricity in any country and it is not very hard to imagine what might happen to average households and small businesses whether in grid connected rural or urban areas if the majority of the local industry would resume full operations and suddenly be in need of an additional 80% of industrial electricity.

Another major concern which leads to a prediction of a rather bleak electricity outlook for the year 2010 is the Soccer World Cup hosted by neighbouring South Africa. Common sense would expect South Africa to be given priority for electricity supplies to guarantee the Soccer World Cup to be a historical success. After all, the entire world is watching and South Africa will certainly make sure they won't be embarrassed by power-blackouts during extra time of soccer matches. In addition, the timing of this event is not very helpful either as the World Cup will take place during winter time in southern Africa when Zimbabwe traditionally struggles the most with electricity supply and demand. Winter load shedding has been a "normal" part of everybody's life in Zimbabwe for the past 7-8 years but can be managed if ZESA sticks to the plan and their proposed schedule. After all electricity shortages are not exclusively an African problem but a global challenge which can not be ignored.

What alternatives do we have to overcome the expected shortfalls in energy supplies which are presumably not too far away?

Well we do have lots of sunshine to start with and Zimbabwe is the ideal location for solar powered electricity producing plants which are suitable for household and light industrial needs and applications. There are other options like wind generators but they do unfortunately rely on a steady breeze or even better strong winds to generate electricity. Not too many areas in Zimbabwe offer these conditions and therefore wind energy generation can only be considered a supplement to other alternative energy generation wherever suitable. Biomass and other similar alternative sources of energy production are hard to sustain as farming activities are also on the

decline and do not produce the raw material needed. Biomass energy management is a slightly more complicated process which requires monitoring and permanent maintenance to keep going. Generators which use fossil fuels and which we do not consider sustainable are an unreliable, noisy, environmentally unfriendly and in the long run also costly way to get around the problem. Most stand by generators whether Diesel or Petrol powered are not designed to sustain long periods of "running time" and may break down when needed the most as they are simply stand by or emergency generators meant to power remote sites for a rather short period of time. Alternative Energy setups are unfortunately an initially rather expensive long term investment which only pays over time. But besides the initial costs for a solar power backup system (i.e.) there are no other future expenses. Let the sun be the fuel. Choose a high quality UPS inverter/charger unit (i.e. VICTRON MultiPlus) combined with the latest technology AGM batteries for your backup system and you are prepared for the worst and simply can not ask for an easier way of operation. Due to UPS technology these components do not require you to do anything at all. No maintenance required as they are completely maintenance free with AGM batteries offering a service live of +/- 10 years. Solar panels are expected to last around 25 years in service and will not stop after that, only drop energy production in output slightly. There are many alternatives and with the forecast projected it is about time to start thinking differently. You don't have to sit in the dark completely unprepared for what is likely about to happen, plan ahead. NOW is the time. Whatever you decide to go for, always opt for high quality products as "cheap" certainly will become expensive in the long run. There are no shortcuts to quality and once you have made your decision you want to be guaranteed peace of mind, knowing that you are in good hands and your system will work no matter what. Make the right choice.



Here is a simple graph explaining how backup systems actually work. For a basic power backup system you do not necessarily have to have a solar array to recharge your battery bank. All our VICTRON UPS inverters which come in range from 1-5 KVA in size do have an integrated powerful battery charger which requires ZESA (!) availability on a regular base for recharging. These systems are a perfect starting point as they can easily be extended to solar power replacing ZESA at a later stage and may be a less costly alternative to start with.

MADISON SOLAR ENGINEERING offers sustainable and highly reliable solar and power backup solutions for all your needs. Inquire today to be a step ahead when the lights go off. Check our website (www.madisonzim.com) for further information and interesting articles and links.