



**UHURU**  
FLOWERS LTD

## set Precedent in Solar Power

For the longest time now, I've been thinking of purchasing the Samsung Solar Laptop which was launched specifically for the African market. What I especially like about the small laptop is that I can use it to charge my Smartphone via USB cable. Where I have a farm in Olturoto, Kitengela, it is 6000 meters from the Kenya Power mains but there is a neighbour with powerful friends at the State Parastatal who has blocked us from getting connected until we pay him off. This has frustrated us so much that we're looking into alternative sources of power. This led us to a solar power equipment supplier in Nairobi. The figures they gave us were shocking as well and we were not impressed. So I am now looking into other alternatives including considering using a petro-powered generator to power the farm.

Kenya in particular is also prone to power blackouts and the cost of electricity is staggeringly high but the quality and frequency is very poor. But I am not alone in the darkness as 3 million Kenyan homes or 80% of the population lives off the Kenya Power grid. This state of affairs motivated Safaricom and M-Kopa to launch a solar powered unit that is purchased through a pay-as-you-go model.

With such dynamic products reaching the Kenyan market, it seems that solar power is getting traction in Kenya even though less than 2% of Africa uses it. So when my editor called and said that he wants us to go to Nanyuki and do a feature on an exemplary solar farm that was recently launched, I said okay knowing that I would get a chance to ask the manager

why this form of 'Free Power' is so expensive. I'm all for a greener, cleaner planet, even though I burn plastics every now and then, but why should the solar equipment suppliers turn a freely abundant form of energy into an expensive source of power?

Our eleven o'clock appointment at Uhuru Flowers meant that we had to leave Nairobi at 7am because it's a three hour ride to Nanyuki and the farm is another 22km or so past Nanyuki. The ride was exceptionally smooth thanks to the well maintained roads starting with the Thika Superhighway.

Upon reaching the farm, we were met by Ivan Freeman, the Managing director there. Flanked by two large mixed breed black dogs and a small white and brown Jack Russell dog, he walks

us through part of the 15 hectare farm (45 acres) enroute to the 300 square meters of solar panel layout on both sides of the roof on the warehouse that houses the offices, packaging area and coolers.

The solar panels do a direct feed into the farm's electrical circuitry rather than feeding into batteries. He says that batteries are the weak point in any solar system and the biggest single cost in the installation and so getting rid of them reduces the cost substantially. He said that batteries enough for the 300 sq meters of solar panels would cost half as much as the panels and inverters put together.

"The batteries have a lifespan of around five years while the solar panels have a lifespan of 30 years or more, so it's not practical

to have batteries for installations this big, maybe for domestic use” Says Ivan. Citing a Non-Disclosure Agreement he signed with the solar equipment supplier, he said that the project cost them in excess of 100,000 Pounds and the batteries alone would have taken up the entire warehouse equivalent to the one where the solar panels are mounted.

To that effect, there is only a single shipping container that houses the inverters to change the current from DC to AC and no other solar equipment on site. The feasibility study took more than a year as they recorded the sunshine coverage and wind speeds and the data showed that solar power would be much better suited for the farm.

Walking outside, we came across a waste carrying cart pulled by two humongous Boran cattle and Mr. Freeman says that they try to work in harmony with nature rather than have the cart pulled by a tractor powered by fossil fuels as would be the case. The cattle also consume part of their organic waste helping with disposal.

The green agenda in the flower industry is being pushed hard and a similarly themed story on CNN captured flower farms recycling water from Lake Naivasha and using wet charcoal to cool their flowers. The Uhuru Flowers solar project which was launched in February 2013 is already offsetting 50% of the farm's power needs. The other 50% is met by the Kenya Power grid mostly at night and on cloudy days.



Having had set out to ask why solar power is so expensive, I got my answer, it's the batteries! The next question I asked is that given that the solar installation on the farm is the biggest in the country, why aren't they lobbying to have the regulatory framework changed so that they are able to fully feed into the national grid and get paid for it? "But we're not doing it for business, generating power, our business is growing

flowers" says Ivan, "we're doing it to cater for our own needs, what we'd like to see happen is net metering; feed into the national grid during the day and take from the

equipment. Their power usage at night is very minimal because it's cold in Nanyuki so the coolers aren't working as hard and they do the water pumping during the day.



national grid at night and on cloudy days and then at the end of the month, we do the math and pay for the difference”.

They have approached the Energy Regulatory Commission about such a plan but haven't heard back from them. The farm produces 72 Kilowatts but to get paid by the government, they would have to do in excess of 1,000 Kilowatts (One Megawatt). The solar power generated is used to power the coolers, pump water and light up the offices and office

The payback period they estimate to be between five to seven years and given that Kenya Power will steadily increase their tariffs, then the savings can only increase. I may consider doing what Uhuru Flowers have done, do a direct feed for the day and use a petro-powered generator at night. Though the option of wind still exists but I'm yet to explore it. For now, let's see if a direct-feed from solar panels without batteries can work for me.

**By Bernard Muhia**

