



## SECOND MEGA SOLAR POWER PROJECT IN THE SECTOR SET UP AT TAMBUZI LTD

When I first heard of Tambuzi Flowers Ltd what came to my mind is a good nature enshrined farm, because of its name. True to this when we met with the farm's staff during an exhibition this was apparent in their humble character and their wish that we could feature the farm's green energy projects.

When we got an appointment from the Director Mr. Tim Hobbs I was excited to visit the farm, first to attest the impression I had and also, I like being at foot hills of Mount Kenya.

My expectations were not cut short but affirmed since from a far off as we enquired the way to the farm, we could not see greenhouses but just trees. On arrival at the farm, just before the gate was a big

reservoir which we later learnt is where all the rain water and cleaned dirty water is harvested; this is the main source of water for irrigation at the farm.

The purpose of visiting this magnificent farm is to report on the mega solar power project, the second of its kind in the region and in the flower sector.

The cost of electricity in Kenya is exorbitant, leave alone the irregular supply. This has left many large scale consumers wishing for an alternative with solar energy being very opportune. This led to Tambuzi Ltd management deciding to go solar. Before they embarked on the project they undertook an energy audit to establish power usage in the farm which they averaged to be 80 Kilowatts. They

invited supplies whereby Chloride Exide was awarded the contract in tune with patriotism to support Kenyan company. Construction began in April and it was commissioned in July.

Standard Chartered is keen in supporting such ventures thus they were granted 12 million Kenya Shilling loan to repay in a period of 60 months. What they save for not using Kenya Power electricity they pay for the loan (2000KSh per kilowatt) and after the period it will be a direct saving for them. The amazing thing is that by half past noon that day we were there, the system had produced 191kilowatts which when multiplied by 18Ksh cost of power, it means they had saved 3200Kshs.

When designing the structure the first thing they did was to look for an open space where they set up a structure to hold 4 arrays of panels 18m by 30m facing east to west direction to tap maximum sunlight. Every array has 60 panels and the total number of panels is 240. The Capacity of a panel is 250watts at noonday sun (100%). The structure is constructed in such a way that it will be secured to be used as a store. The farm is only miles from the equator thus enjoys a maximum of 11 hours of sunshine on a good day, with the system logging as early as 6.30am and producing 1000w at that early hour.

"The most important issue is that there are no batteries here, it is



Mr. Kelvin Kaguamba in the control room



Mr. Kelvin Kaguamba displays the solar lighting house household unit

a direct solar feed; it is called a Grid Tie, it actually doesn't feed back into the grid, but feeds directly into our power needs directly as it is generated. In normal systems, solar panels charge batteries, batteries run the inverter, and an inverter supplies the power. This is solar panels straight into the inverter, it synchronizes with the Kenya power feed and then feeds our usage directly; it is a direct feed, grid tie, none stored energy solar system", Mr. Hobbs explained about the system.

Kenya Power electricity come past the meter to usage or the solar power meets power from Kenya power, to make sure the wavelength is synchronized and then to usage. Since the usage is 80Kw, the solar panels supplies most of the power during the day and KPLC complements the deficit which is at or

about 20Kw. There is a standby generator which substitutes KPLC in case of a power outage. The system has a capacity of 60Kw and supplements the 80Kw need at the farm. At night they generate nothing the usage is 20kw which is solely from Kenya Power. Mainly their operations are during the day. The operations that require power include cold stores, offices, pumping, spraying, workshop, there are no mechanics at night thus usage is only cold stores and a few security lights.

"In future, the plan is to increase the energy production capacity to 120Kw as this will meet the demand in the farm's expansion plan. We want to make sure that the energy from Kenya Power electricity can go to other places rather than us using it" says Kelvin Kaguamba, who is responsible for the installation of the solar project.

The energy act is silent on

private energy producers who produce more power than they can use. In this regard therefore, there is no pay-off system against what is sent to the main grid and therefore the plan is to produce what is going to be used at the farm with minimum power being fed back into the system. The company is asking the government to look into this issue as it can be a huge incentive to companies and individuals seeking to produce their own energy.

Another exciting project the company has undertaken, which is not only a huge improvement on the carbon footprint but it also saves workers time, money and energy is the Solar Lighting House Hold Unit. They have supplied all of their staff with solar units, which consist of a pack of four lights which are connected by long cables enabling an entire home to be fully lit up, a socket for a radio and another socket for charging phone. "The children can do

homework, while mum is cooking and dad is reading a newspaper" says Tim.

Tambuzi linked up with the Waitrose Foundation and piloted importation of the units. They paid upfront and in bulks so they were able to give to the employees at good cost- 6,000 Kshs, while the market price is 10,000Ksh. The amount is paid off by the farm workers over a period of time, with the monthly installment being less than what the workers pays for kerosene, thus they are left with 'something in their pockets'.

Tambuzi is the only farm in Kenya that supplies traditional garden scented roses and also among the only five 'gold' certified members of Kenya Flower Council. Apart from roses, they take pride in being the first producer of Fairtrade Certified food herbs in Kenya which include: Mint, Lemon Thyme, Rosemary, Oregano and Sage. For herbs/foilage plants that are used as





Mr. Tim Hobbs Director Tambuzi Ltd.

fillers in flower bouquets; they grow mint, rosemary, lavender and oregano.

The farm is approximately 64 hectares, 25 hectares is under horticultural production, with the rest being dedicated to sustainable forestry, bee keeping and livestock. To ensure that there are no negative impacts on the integrity of the environment, the farm

among many other things has constructed an artificial wetland, licensed by NEMA, as an effective cleaning and decontamination system for waste water from Pack house, laundry and canteen.

While Moving around the farm and interacting with staff members, I reaffirmed that the farm has an ethical working relationship.



Artificial wetland