LETTING SOLAR HELP CUT THE COST OF LIGHTING UP YOUR HOME – BY Justus Wanga

Are you among those who are fed up of the frequent power outages in the country? Many people have to make do with only three quarters of their power supply needs yet the bill at the end of the month never seems to reflect this reduced usage. Because of this unpredictable supply, a good number of Kenyans are turning to solar power to fill in for the erratic power supply. In the past two years, the number of companies selling solar power equipment has risen noticeably to the extent that there is currently a glut in the supply of cheap, Chinese-made solar panels in the global markets. But although this oversupply is yet to be felt in the Kenyan market, all indications are that it will soon be with us. Already several companies are aggressively advertising the products in the media.

The cheaper prices will make it more affordable for urban residents to put up solar panels on their roof tops allowing them to run some of their appliances on solar. Prices for solar panels, available locally are today approaching KShs.150 per watt, half the price they were retailing for two years ago. A watt is the smallest unit of power. Locally produced panels in Naivasha, retail slightly higher at KShs.200 per watt. All signs point to the prices of the panels falling down to KShs.80 per watt – a price at which the solar industry is said to have reached grip parity, which is the point at which generating electricity from solar power is equal to or less than the price of purchasing power for the Kenya Power grid.

This drop in price should come as a welcome relief for most home owners because it will cushion them from high electricity costs and make up for unreliable supplies by Kenya Power, which is the sole provider. The cheaper price of panels is also trickling down to those in the rural areas because more kits that are more suitable for the rural areas are coming into the Kenyan market. The increased uptake of lighting solar kits in urban and rural areas coincides with report by Solar Electric Fund (SELF) that Kenya is emerging as a world leader in the adoption of solar equipment per capita. SELF is a US based body that has been advancing Solar Solutions to rural villages across the globe since 1990.

Increasing adoption

The report further says that more Kenyans are adopting more solar power in a year as opposed to making connections to the country's electricity grid. An informal survey around some of Nairobi's high end estates like Karen, Runda and Kileleshwa to name a few, reveals that most houses now come with solar water heating panels. In Karen, a whole estate was recently put up uses more solar power than electricity such that even the street lighting there is solar powered. This state of affairs is reflectd in the sales volumes recorded by companies like Solar Cookers International, Davis & Shirtliff and Chloride Exide and Kenital – among others – that

deal in household solar gadgets over the last one year. The popularity of this alternative source of energy is partly explained by the fact that with solar connections, you avoid the long bureaucracies like the ones associated with applying for connection to the conventional systems.

Another reason that is advanced by these service providers for the rising popularity of solar energy is the fact that it adequately serves both poor home settings and the well to do ones. A drop in price of solar powered gadgets as recently reported by the Energy Regulatory Commission is another pointer that things are looking up. Although the newly gazetted regulations for Residential and Commercial Buildings which stipulates that buildings that need more than 100 litres of hot water a day should incorporate an in built solar heating system is yet to take effect, the trend is a shot in the arm in meeting this legal framework. It suffices to mention that the shift is not only limited to heating also installation of lighting systems, both indoors and outdoors. Many homes are opting to install both heating and lightings systems as the main source of energy. John Amayo of Solar Cookers International says that Kenyans are quickly embracing solar as a major source of energy because it's cheaper and more reliable than what is currently available. "As a country, we are currently witnessing an overwhelming departure from the conventional sources of energy to solar technology," he explains that the rate of adoption have been higher in Kajiado, Kisumu and Mombasa where they rolled out pilot projects in 1998 to popularise usage of solar for household energy solutions.

"The adoption cuts across the different classes of the population in these areas and save for Nairobi County which leads in connectivity, the three mentioned above are unmatched by any other part of the republic," he offered. Amayo further explains that lately, even the laggards who were not keen on walking the solar path are choosing to have solar installations exist side-by-side with their conventional electrical connections. This scenario is projected by Tor Rafoss, the proprietor of Dala Rieko, community based organisation (CBO) that relies on solar power to run all operations within the organisation. The organisation specialises in making farmyard manure out of the water hyacinth in Lake Victoria.

"Although we are connected to Kenya Power, most of our machines are solar powered." Says the Norwegian who divulges that solar as a green source of energy is cost-effective. He says that solar heating appliances are available in varying capacities and are able to operate even during cool days when the sun's rays are not very strong. "Different from electricity that cannot power heavy appliances when the voltage is low, solar heaters are made in such a way that they have backup energy storage that it relies on when the supply reduces." He explained. There is however one fact that all these suppliers confess, the initial costs of installation is high. But despite this, it has also come out so strongly that when spread over time investors in solar energy save up to 80% of their energy expenditures. Deputy Group CEO of Davis & Shirtliff, David Gatende, encourages households and commercial holdings to invest in solar energy saying it will eventually give value for the money you spend.

“while the initial installation costs may be quite expensive, once you install a solar water heater or other solar powered systems, your water heating bills should drop by between 50-80% and within two years , you will have recovered your initial investment.” He exuded.

The CEO revealed that they have rolled out the second generation Dayliff solar water heating systems as a Kenyan solar power brand to make the equipment even more accessible. When fully operational, he says, the initiative will enable households to save up to 60% of their current utility bills. “Among the new models unveiled feature an indirect heating version for mineralized water and also greatly improved tanks with additional corrosion protection provided by cathodic protection,” he explained. For your house to be connected to both lighting and heating purposes, Evans Mitune, a registered electrician with the Energy Regulatory Commission says that an inverter must be installed to tap and change the power into a format that electrical appliances can use. Power from the solar panel is harnessed as Direct Current which must be transformed to alternative current format that most appliances are configured for.

The other requirements for conventional installation like issuance of quotation apply. Mitune says that the cost of installation constitutes a third (30%) of the total cost of materials. He also explained that the overall cost is also determined by the number of lighting and heating points increases the connection cost by at least KShs. 2,850 whereas that used for lighting needs KShs 1,500. Available in the market at similar prices to conventional electric appliances are solar refrigerators and freezers that are energy efficient. The two, PF 166 and PF 240 which are maintenance free, work with an input voltage of 12V and 24V respectively