EQUITY

CYLINDER FACTORY PROCESS



**NOT FOR SALE** 

Issue-15

# Shaping future of clean energy

Gas company targets low and middle income segment with affordable clean energy option

new entrant in the energy market has changed the Liquefied Petroleum Gas (LPG) consumption landscape by reaching many Kenyans who hitherto used traditional sources like charcoal and kerosene.

Proto Energy Limited is a manufacturer of LPG cylinders and refills the commodity for wholesale, retail and bulk supply to institutions. The company is the largest manufacturer of 6kg, 13kg and 50kg cylinders in the country. It also refills and distributes its Progas product across Kenya.

By far the largest number of cylinders manufactured and refilled by Proto are the 6kg ones, which account for 90% of the installed capacity. The bias is a deliberate strategy to capture the untapped low and middle income segment of the market that has remained locked to environment polluting energy sources.

"Our strategy is to sell to the upcoming middle class that is converting from charcoal to cleaner energy. In our country logging is banned and charcoal use is diminishing while paraffin has become too expensive. That is why the lion's share of our business is the 6kg cylinder,"

miton

A technician inspects

solar water heaters at

Hilltop Apartments in

Parklands, Nairobi.



A Proto Energy staff member takes stock of refilled cylinders of Progas at the factory in Kabati, Murang'a.

says the Proto Head of Domestic Sales Jane Wangari. To reach the wide range of consumers Proto has established an elaborate distribution system. It has invested in 200 vehicles ranging from large trucks that

deliver bulk gas supplies to institutions, to tuktuks that deliver the 6kg cylinder to customers at their door steps. "What distinguishes us from others is the timely delivery of a high quality product that is affordable and accessible to the customer," says Wangari.

To ensure the gas is available in villages Proto has established mini distribution centres that stock the cylinders in container depots. The Proto strategy resonates with its partner, Equity whose business model is acknowledged for pioneering the banking of the 'un-bankable'.

Proto forged the partnership for clients to acquire cylinders and distribute Progas through Equity agents and pay through the Equity digital platform already in place.

"Equity is helping develop the market by providing funding to resellers through its EazzyBiz platform.

The relationship has helped reach consumers who use more expensive alternatives for cooking following the ban on logging. "We are educating our communities that it is cheaper to use gas than wood fuel and kerosene, both of which are heavy polluters of the environment.

"We have come up with easier and efficient ways of integrating the cylinder and gas acquisition process through Equity. The bank has helped us to reach the less penetrated market in the same way that it has done with financial inclusion," says Wangari.

Proto manufactures 5,000 cylinders per day at the factory situated at Kabati in Murang'a. It has loading arms for bulk supply to industrial customers including hospitals, schools, hotels and manufacturers.



1. Assembly 2. Welding 3. Testing for leakage 4. Painting 5. Filling

## **Developer reels in home seekers with solar solution**

B hogal Construction Company has been in property development business for half a century. The company constructs buildings for clients but recently the proprietor Harbhajan Singh Bhogal decided to put up his own property off Park Road in Nairobi.

The seven storey Hilltop Apartments is an imposing condominium designed for one, two, three and fourbedroom apartments.

> The property is distinguished from others in the vicinity by the an elaborate water heating system composed of 38 solar panels and barrels that cover the entire roof of the building.

"For one-bedroom apartments we have allocated panels that can heat 150 litres;

for the two-bedroom units 200 litres and for the three and four-bedroom houses 300 litres" says Bhogal.

Electricity is only used as a back-up during the periods of highovercast.

"When the water temperature drops to a certain level the backup power from Kenya Power and Lighting Company switches on automatically. Otherwise we use only solar energy throughout the year

because the savings are significant," he Harbhajan Singh Bhogal said.

Bhogal says he installed solar energy also because by law developers have to install solar systems for all new properties.

"When the sun is up as it almost always is in this part of the world, clients are happy because they have adequate water that is hot whenever they need to use it."

On the sixth level of the condominium is a swimming pool that is designed for use all year

round including during the cold season.

"It can be quite chilly here at Park Road and that is why we have installed solar panels to heat the swimming pool," says Bhogal.

Bhogal says home buyers are now appreciating the advantage of having an alternative energy system because they also want to save. "It is solar for those who want to let as well as those who want to buy my apartments," says Bhogal.



It can be quite chilly here at Park Road and that is why we have installed solar panels to heat the swimming pool

## Partnerships, the future of clean energy



Dr. James Mwangi, CEO & Managing Director, Equity

lean and sustainable energy has emerged as a focal point in developing countries due to mounting pressure to preserve the environment by increasing access to renewable energy and energy efficiency.

Utilisation of biomass and fossil based fuels leads to deterioration in people's health and productivity while having undesired and sometimes non-reversible damage to the

natural environment. At Equity, we seek to address this challenge by increasing awareness of the benefits of clean energy for cooking and lighting. In addition, we facilitate access to clean energy through affordable financing to purchase innovative clean energy technologies that directly impact people's health, incomes and the environment.

Tapping into the power of the sun to provide lighting and electronic charging solutions makes a real difference in how communities sustain themselves. Families are able to re-allocate funds saved from the adoption of renewable energy technologies such as solar panels and improved cook stoves to other basic needs such as education or healthcare.

#### Loan acquisition

Equity, with support from IFC Lighting Africa Program II launched the EcoMoto program with the goal of enabling poor households to access clean energy for lighting and cooking. Equity customers buy improved cook stoves, LPG, solar lighting systems and water purifiers through a simplified loan product that allows for instalment payments for as little as Ksh15 a day over a 12 month period.

We have availed the clean energy loan via Equitel platform and the applicant can pick up the equipment at the nearest appointed ÉcoMoto agent.

In 2015, MicroEnergy Credits signed an Emission Reduction Purchase Agreement (ERPA) with the Swedish Energy Agency to support Equity and the EcoMoto programme. This ERPA generates additional revenue for the

EcoMoto Programme which is reinvested back into the initiative. Equity also partnered with development organizations for a results based financing (RBF) programme, proceeds of which are reinvested in the clean energy agenda.

So far, in partnership with over 1000 EcoMoto stockists, we have distributed Ksh250 million worth of clean energy products to 55,000 households and recorded over Ksh236 million in household savings from switching to cleaner energy.

In the area of solar Photovoltaics (PV), we are supporting productive uses of energy in areas such as water pumping for drip irrigation



We facilitate access to clean energy through affordable financing to purchase innovative clean energy technologies that impact people and the environment Dr. James Mwangi

and cattle drinking, aeration for aquacultures, refrigeration and poultry lighting. Other areas of interest are pest control and electric fencing. The impacts of solar electricity on agricultural activities are increased productivity (including higher yields, lower losses and faster production) and improved natural resource management. This helps to promote climate change resilience in agriculture.

Other areas include support for solar systems for small businesses.

Together with our partners, we support efficient utilization of energy through energy audits and funding of retrofits necessary to reduce power consumption in both commercial and residential establishments. This also includes financing of factories that use heavy industrial fuels and coal for heating to switch to more sustainable and environmental friendly fuels like solar and biomass energy. Continued use of wood and charcoal as a

primary source of fuel has had devastating effects on the environment through deforestation and greenhouse gas emissions.

Equity supports companies that produce fuels that are environmentally friendly such as briquettes made from waste.

We see the benefits of green energy to the household, such as improved health and better performance among school going children due to better lighting for studying at home. Families have access to technology and information as a result of solar charging solutions for gadgets. Overall, the wellbeing and vitality of communities is improved and the natural environment preserved.

# Sunny side up: how solar lighting changed my home

For Simon Irungu and his household, dusk always ushered in evenings of silence in darkness. The dim flickering light from a home-made kerosene lamp that spewed loads of smoke provided limited lighting. An adjacent kitchen was even darker from years of smoke and soot that covered the rafters and walls, making it difficult to light the rooms even during the day. The many years of darkness hanging fronds. All that changed when Simon



Now able to enjoy brighter nights with his extended family of ten, the retired lay pastor says life has really changed thanks to the portable solar power system

was introduced to a lighting product with additional accessories like radios and televisions. The Solectric product from Orb Energy was ideal for his homestead that is located way beyong where the national electricity power grid terminates in Ithanga, Murang'a County.

Says Simon, "Ilikuwa inanigharimu shilingi 100 kununua mafuta taa kila wiki na kuna wakati mafuta taa kila wiki na kuna wakati nilikuwa nakosa hiyo mia na inapasa watoto wasifanye homework kwa vile nyumba ni giza na mambo yote yamesimama (It used to cost me Ksh100 every week to buy paraffin and there were times when I would lack the money. This meant that children could not do their homework in darkeness that brought everything to a stop)." to a stop)

Mobile phone charging Simon, a retired lay pastor, secured a loan from Equity guaranteed by a self help group he belongs to and within a year he had completed the repayment. "Nilichukua mkopo wa shilingi 60,000 na mpaka wa leo mimi shungi 60,000 na mpaka wa leo mimi situmii mafuta ya taa. Sasa hata sijui bei ya mafuta ya taa kwani sina haja naye (I took a Ksh60,000 loan and now I don't use paraffin. I don't even know how much paraffin costs now)," says Simon.

says Simon. Now able to enjoy brighter nights with his extended family of ten, the retired lay pastor says life has really changed thanks to the home solar power system. His homestead stands out in the neighborhood that is covered by a blanket of darkness on moonless nights.



Simon Irungu and his family enjoy the benefits of the solar system he installed for lighting and running household appliances.

Since purchasing the system the family has a safe, clean and reliable source of energy for lighting, phone charging and keeping abreast with news and entertainment on TV.

news and entertainment on TV. Simon is now saving money he previously used to purchase paraffin and pay for mobile phone charging. He is eager to point out the social support role the lighting system played for two weeks when his mother passed away and members of the community would gather daily at the home to comfort the family. The solar lamps could sustain lighting for up to 12 hours, illuminating the compound for mourners. He would charge the battery using the solar panel at his home and in the evening go to his mother's home to light up the his mother's home to light up the compound for the evening vigil. Simon notes that the solar lighting

has eliminated pollution from poorly calibrated homemade lanterns that spewed black smoke darkening the room walls over time. *"La muhimu zaidi ni kwamba watoto wangu sasa hawasumbuliwi na moshi na maradhi inayosababishwa na moshi huo. Sasa inayosababishwa na moshi huo. Sasa nimejua inaweza kukupa uhuru wa kufurahia maisha.* (Of importance is that my children do not suffer from smoke related ailments. I now know the sun can give you the freedom to enjoy life)."



his television set.



### Solar pump waters growth of farms

eorge Otieno owns a five George Otieno owns a five acre piece of land in Usare Beach, Kisumu where he grows vegetables and rearing poultry and rabbits. As an agri-business farmer, he is required to farm his land throughout the year to ensure a continuous supply of vegetables to the market

the market. In order to produce vegetables during dry seasons, George was forced to use buckets to irrigate his land. This was time consuming and tiring and wasted a lot of water. Due to the traditional

irrigation method he used, he could only

irrigation method he used, he could only farm a quarter of an acre. Then through adverts on the radio he heard about a solar pump which is a product of Futurepump, a partner of Equity. He traced Solar Now shop in Kisumu town that stocked the pump and after hearing about the functionality of the pump, he liked. The pump as it requires no fuel to run, has minimum maintenance requirements and is maintenance requirements and is portable unlike the generator ran pump. After purchasing the solar pump George started saving time; the work

load reduced as the pump delivers water to the intended farm area through pipes unlike before where he used buckets. He saves water as he uses sprinklers. The biggest win he has is the fact that he increased his farming land from a quarter of an acre to one and a half acres. George became an Equity customer so that he can access the agriculture loans offered by the institution and benefit from Equity and Futurepump partnership. He intends to start fish farming from the loan he will secure.

George using the Solar pump to water his farm in Usare

### Solution to blackouts cut Switch to smart living my power bill by 80pc

teve Mwaniki the of chairman neighbourhood welfare association of 35 comprising households. When he built his four bedroom bungalow at Kenyatta Road in Kiambu, he had it wired for supply of electricity from the national power grid.

No sooner had he moved in than other property owners in the vicinity also put up houses, increasing the load on the only grid transformer.

Power outages became common, increasing to at least twice a week, sometimes all night long. "During such blackouts my daughter would ask me what time the lights would come on and obviously I wouldn't know. It was very stressful," says Steve.

#### Alternative sources

Steve was particularly upset by the outages because it meant he would drive a kilometre away to recharge his phone. "Being a businessman my phone is my office. It must be on all the time."

The frustration prompted him to consider supplementing the power with alternative sources. While on an errand at a nearby mall a marketing attendant handed him a on the Solectric brochure

is Home System.

A quick perusal rekindled his interest in supplementary power supply and he immediately called Orb Energy, the manufacturer and

### Any time the electricity from the grid goes off the solar automatically powers up

distributor of the solar power solutions

Orb Energy has partnered with Equity to increase the uptake of the green energy power solutions. While Orb provides the equipment, Equity finances clients to purchase and install them.

For continuous For continuous power supply by day and night, Steve installed two solar power panels with capacity to power his home's requirements, including an electric fence installed on the perimeter wall for security.

"Any time the electricity from the grid goes off the solar automatically powers up and

whatever was on, whether it is the TV refrigerator or lights, stays on," a delighted Steve says, adding that Orb Energy's after-sale service department calls every so often to ask whether the system is working as it should.

Neighbours started to notice that whenever there was a blackout, only Steve's property remained lit throughout. "My neighbours were curious to know what I did to have power throughout and in the last estate meeting I explained how solar power works. They were surprised to know you do not need a separate wiring system, and many are now in the process of installing solar."

#### Reduce the cost

Steve attests to the viability of the solar system that has not only ended frequent blackouts but has also cut his cost of electricity by half as he often switches off power from the national grid to utilize the 'free' power harnessed from the sun and stored in two large batteries.

Steve hopes to use solar power 50% of the time thus reduce the cost of electricity by 80%. The good thing about the system is that you have the option to switch off the power from the grid and use solar," he says





requirement by law for installation of solar power system in all properties heating more than 100 litres of water per day was all Geoffrey Mutembei needed to be convinced that the future is solar. This is the Energy (Solar Water Heating) Regulations, 2012 that came to force in April 2012 as per the Legal Notice No. 43 of the Kenya Gazette.

The law requires all existing buildings within the jurisdiction of local authorities with hot water requirements of a capacity exceeding 100 litres per day to install and use solar heating systems. Geoffrey established an outlet in Nanyuki's that runs under the tag line 'Smart Living' and stocked a wide range of solar appliances and accessories. The Blue Clean Solar Shop located on the main street in Nanyuki town is the leading stockiest of institutional water heaters, solar panels and security appliances as well as

A client enquires about solar lighting products at the Blue Clean Solar Shop in Nanyuki

domestic appliances that include solar powered lawn lights that automatically switch on at dusk and switch off at dawn.

The heavily stocked shop in Laikipia County has a hinterland that extends to the northern counties Isiolo, Marsabit Samburu, Wajir and Mandera where sunshine is in abundance and the stretch of the national grid is limited in this expansive arid and semi arid region.

Geoffrey imports most of the appliances from China where he has developed a network of suppliers for the latest in solar power technology.

Mutembei's business has been on a growth tragectory due to increasing awarenes on the benefits of solar power, access to finalce from Equity and Government regualtions. which stipulates that an electric power distributor or supplier shall not provide electricity supply to premises where a solar water heating system has not been installed in accordance with the Energy Regulations 2012.

### The Energy Regulations, 2012

The Energy (Solar Water Heating) Regulations, 2012 require among other things that:-

1. All premises within the jurisdiction of local authorities with hot water requirements of a capacity 100 litres per day shall install and use solar heating systems

2. The existing premises shall install and use solar heating system within a period of five years from the effective date of the Regulations

3. Owners of premises, architects and engineers engaged in the design, construction, extension or alteration of premises shall incorporate solar water heating systems

4. An electric power distributor or supplier shall not provide electricity supply to premises where a solar water heating system has not been installed in accordance with the Regulations

The Solar Water Heating Regulations 5. will be implemented in liaison with the local authorities responsible

6. A person shall not undertake any solar water heating system installation work unless the person is licensed by the Energy Regulatory Commission as a solar water heating system technician or a contractor.



Steve Mwaniki at his house in Kiambu, where he has installed a Solectric Home System for supplementary power supply.

# Young mothers enjoy benefits of cleaner cook stoves



Catherine Wanyaga is among the women who have acquired kitchen items.

atherine Wanyaga is a young mother from Weru in Embu County. She is the youngest member of Rupingazi Youth Group whose members came together to better their lives through saving and guaranteeing each other for loans for their businesses and domestic requirements.

The group meets every week to share experiences but most importantly make their saving contributions under the structured social support group that has an elected committee for which Catherine is the secretary.

"Kuwa kwa kikundi na kuwa na akaunti na Equity hasa kwa sisi vijana ni muhimu kwa sababu Equity haifinyilii watu na inajali watu wa mashinani kama sisi (It is important to be in a group and have an account at Equity especially for us youth because Equity does not exploit people and in fact it considers those from humble backgrounds)," says Catherine.

During the meeting, a support staff from Equity is at hand to train them on financial literacy under the Financial Knowledge for Africa FiKA programme whose curriculum includes budgeting and saving. It is geared

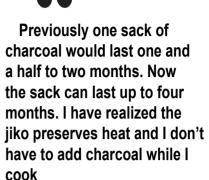


Catherine and fellow RUpingazi Youth Group members during a meeting.

towards uplifting households for more dignified lives.

Among the kitchen equipment the group members have acquired are energy saving jikos. Although Catherine also uses other equipment to cook for her family it is the new EcoZoom brand that has proved to be the most affordable and efficient to use.

"Hapo mbeleni gunia moja ilikuwa inaisha baada ya mwezi mmoja na nusu hadi miezi miwili. Sasa inakaa hata kwa miezi minne. Nimeona hii jiko inapreserve moto na wakati ninapika sishindi nikiongeza makaa (Previously one sack would last one



#### and a half to two months. Now the sack can last up to four months. I have realized the jiko preserves heat and I don't have to add charcoal while I cook)," says Catherine.

The mother of a one confides that Equity has made it easy for her to purchase the jiko for herself and the entire membership of her Rupingazi Youth Group.

"Hapa (Embu) town sijawahi kusikia kwingine unapata hii jiko. Huwa tunaiita jiko ya Equity (In this town I have never heard of another source for jikos. That is why we call it the Equity jiko)."

### Access to clean and affordable cooking options

The members of Zaburi Women's Group in Kajiado have walked life's journey together. They have brought up children, started businesses, and changed their financial fortunes all in partnership with Equity.

"From meagre savings of Ksh20 per week, we are now saving up to Ksh3,000 per week, depending on how well business is doing. We also do a monthly contribution of Ksh4,500 towards paying a loan we took at Equity. Members use this group to save, invest and borrow. We do both welfare contributions and bank savings," says Chairlady Beatrice Parsaloi about their table banking group.

group. "We guarantee each other because this is the group lending model. As the chairlady, I am keen on who is borrowing because we don't want the reputation of the group to be ruined," she says, adding, "For me I started with individual loans of Ksh20,000 and because the Equity saw I was disciplined in repaying, I can now access loans of more than Ksh200,000."

The group meets weekly at Kajiado market centre, where several members run their small businesses. Beatrice narrates about the individual and collective growth brought about by saving and borrowing wisely: "We did not know how to save or run a business. We have learnt a lot and Equity has trained us extensively on how to invest, borrow and repay loans. They have trained us to manage and expand our businesses."

### Borrowing wisely

The women engage in a range of business ventures such as beadwork, selling second hand clothes, maasai



Members of Zaburi Women's Group during one of their meetings in Kajiado.

*shuka's*, livestock trading and selling cereals. In addition to their individual businesses, the women carry out joint projects such as fattening steers for buying and selling goats. Recently, they took a loan of Ksh1.8 million from Equity and bought two parcels of, launching their land trading business.

The women also inspired each other to improve their quality of life, and that's how they decided to buy energy saving jikos. In 2013, Equity partnered with

In 2013, Equity partnered with clean energy companies with the objective of providing clean energy solutions and financing for customers through a unique product called the EcoMoto Loan. Through the USAIDfunded Developing a Sustainable Cookstove Sector (DSCS) grant, a nonprofit organization Winrock International, supported the sale of improved cookstove products through Equity's network of outlets with the marketing and training MEC provided. The program offers charcoalfueled cookstoves from BURN JikoPoa, EcoZoom and Envirofit as well as solar lights from Greenlight Planet, d.light, Fenix, and Orb Energy. Zaburi Women's group invited

an energy officer from MicroEnergy Credits who told them about the benefits of the energy saving jikos. "After she talked to us about the various products, we decided to buy the Envirofit jikos, which are a faster, cleaner, more efficient and cheaper option to regular jikos," says Naomi Senter, a member of the group.

Some members paid for the jikos in cash but most took loans from Equity and repaid in three to six months.

#### Save money

"It doesn't use much charcoal, is faster and does not smoke, so it's safe even for my three-monthold grandchild in the house. It is economical because it uses half the charcoal a normal jiko would. So we save money, especially now that the price of charcoal has really gone up," Naomi, a mother of five observes.

Beatrice emphasizes the benefits of joining saving groups: "When a woman is in a group, her mind becomes active and she engages in income generating activities. We are always looking at where we can invest to grow our money. Also, we secure the future for our children. I am able to buy fruits for my children on my way home. And I learn a lot about life and business from other women." she says, pointing out that one of the group's major achievements is that they have now registered a company through which they will start buying and selling land.

Naomi reiterates the power of collective saving: "Were it not for Equity we would not have been able to do all this. I would like to urge those who are not in a saving group to join one. My life has been transformed thanks to Zaburi. I built my house and even bought my livestock through loans from Equity."



We did not know how to save or run a business. We have learnt a lot and Equity has trained us extensively on how to invest, borrow and repay loans. They have trained us to manage and expand our businesses

Chairlady of Zaburi Women's Group Beatrice Parsaloi

### Innovator generates fuel from pineapple plant Going Green nets savings for resorts

#### that he notion everything has a use is finding increased application in the manufacture of pineapple plant waste briquettes. The CEO of Global Supply Solutions Allan Marega maintains that nothing needs to go to waste. "We need to promote a circular economy as everything has a use. You only need to identify what that use is, add value to it and apply it," he says

It is in this spirit that Global Supply Solution pioneered the manufacture of briquettes using pineapple waste in Kenya.

The company mops up pineapple plant waste material from the expansive pineapple plantations in Thika, which it uses as feedstock for production of the biomas fuel.

To get started Marega raised funding from institutions that support renewable clean energy. "I was also able to get additional funding from ICDC that supports new industrial ventures and I am also being supported by Equity. Equity has been supportive not only





in financing innovations and ideas but also encouraging their clients who are in other sectors to use products like these instead of deforesting the country," Marega says.

After the pineapple fruit is harvested the plant waste cannot be used as humus because it is highly acidic. Previously, it would be burnt. Global Supply Solution now collects the material from the field and delivers it to the factory located near the pineapple plantations. The processing involves milling the waste into small particles after which foreign matter and soil are removed.

Heating without oxygen takes place and the material is compacted to produce a noncarbonized briquette that burns longer than charcoal and is cleaner to handle. "I saw a great need for alternative fuel from wood which is predominantly used in our country. This has caused massive deforestation, cutting back our forest cover. I felt there was need for a different approach," says Marega.

points He out that briquette. briquetting has been around

### FACTORY PROCESS

1. The waste is sorted and milled to remove soil and foreign

Pineapple briquettes are packaged for the market.
Catherine Karimi uses the briquettes to cook

for some time but in Kenya it is not yet widely used. "Commercially produced, it would provide alternative fuel for industrial boilers and for cooking stoves in schools and institutions as well as for small domestic jikos."

Marega is confident that the production of the biomass fuel will be sustainable for as long as pineapple production continues to grow. "We live in a country where people are very open to learning and trying new ways of doing things. If you have the solution to a problem and work hard and long enough

CEO of Global Supply Solutions, Allan Marega with a ready-formarket

people will be receptive. You will then get necessary financing for commercial production," says Marega

Global Supply Solutions produces 75 and 90 diameter round briquettes packed in 1.3 tonne bags for industrial use. The company has introduced smaller

packages of 8kg, 15kg and 20kg for the retail market.

bbey Resort is a 70 roomed guest house in the heart of Nakuru Town. The establishment recently installed solar panels with the capacity

water. The aim was to reduce the resorts running costs while adhering to statutory requirements for heating large amounts of water. According to 2012 Energy Regulations, premises within the jurisdiction of local authorities with hot water requirements of a capacity 100 litres per day should install and use solar heating systems.

to heat 3,000 litres of

"By our estimate, this solar water heating system will reduce our electricity bills by half," says the Manager of Abbey Resort, Felix Mutunga.

The installation was financed by Equity to facilitate the acquisition and installation of the Orb Energy water heating system.

EQUITY



Orb Energy technicians installing solar water heating panels at Abbey Resort, Nakuru.

"Equity has consistently supported Abbey Resort in loans and this latest loan will go a long way in ensuring we are using efficient energy sources. This is especially important because we have expanded our facilities," says Felix.

Equity in partnership with Orb Energy support both large and small scale clients to acquire and install a variety of solar energy systems for electricity supply while at the same time protecting the environment.

Elsewhere, a hotel in Wote is among the first establishments in the region to instal solar water heating systems. Acacia Resort installed six Orb Sunstreams, that are adequate to heat up to 1,800 litres of water a day to meet requirements of the maximum number of guests if accommodated in all its 40 rooms.

"In 2017 we bought the solar energy system and that enabled us to cut the use of the power from the grid by half. The 50:50 use of grid and solar has reduced our electricity bill by more than half" says Operations Director John Liku.

The choice to install Orb Sunstreams was hastened by the partnership with Equity. For the eight years the hotel was in operations, it depended on power from the grid spending almost Ksh40,000 per month on electricity bills when the hotel had only 14 rooms. "We increased the number of rooms to 40 and although only water heating is powered by solar, the bill has gone up to only Ksh54,000," says Liku.

What this means is that an increase of accommodation capacity by 185% resulted in an increase in electricity bill by only 35%. Thanks to conversion of electiricy water heating to solar.

During stay at the hotel, a hotel guest was surprised that there was hot water yet the grid power outage had lasted the night and most of the day.

"What impresses us is our customers' satisfaction because they comment positively about the hot showers more than any other service," says Liku.

Although the area is hot during the day, nights are cold. This makes a hot morning shower a welcome service for the clients.



of the Equity Agent you are buying from

Agent you are buying from)

9. Choose your preferred loan repayment period

10.Confirm your monthly installment and then accept Terms and Conditions

11.You will receive a loan approval SMS (the SMS will also be sent to the

- 1. On your Equitel line, select "My Money 2. Select "Eazzy Loan" and then select 'Get Loan'
- 3. Select relevant Account Number
- 4. Select 'Other Loans' then enter your PIN as requested
- 5. Select 'EcoMoto' Loan
- 6. Choose Product Catalogue
- 7. Choose the specific product you want to purchase

12.Collect your product from the Agent Can also be purchased through Eazzy Pay or by cash



# School warms up to green energy solutions



oys will be boys and given an opportunity to skip a bath on a chilly day they will not step into that shower. But not so for the students of Brookfield

Academy in Karatina, Nyeri County where the school has installed a water heating system with capacity to heat 2,400 litres of water daily.

"Out of the fees we collected we would spend 30% on energy, mainly electricity and wood," says the school Director Bernard Ngari.

The unreliable water heating option prompted the school management to consider alternative water heating methods including boilers that make wood fuel or fossil fuels like diesel.

It occurred to Ngari that the solar heating system he installed at home ten years ago would be replicated in a bigger scale at the school.

"First we were approached by Orb Energy to provide the solar heating system and we later learnt we could be supported by Equity to purchase and install. Equity has been a willing partner that has supported this school, even putting up the buildings," says Ngari.

The management approached Equity Karatina branch to seek a lasting solution for the school whose two blocks of administration and classes and the dormitories were constructed with financing by the Equity.

"Through the arrangement with Orb, I find Equity very flexible in financing solar systems and the amount you save can cover the interest

Hot showers have become a major selling point for Brookfield Academy, and the solar installation has already reduced the school's energy costs. -Bernard Ngari

or the small charges levied on the facility," said Ngari.

### Health challenges

"I have used solar power to heat water in my house for 10 years. At Brookfield High School, our electricity bill was Ksh60,000 and on installing the solar panels, the bill came down to Ksh50,000. We are saving Ksh10,000 every month. Initially installation of solar equipment is expensive but

over time you will realise the benefits," he says.

While the school is among the best performing high schools in Nyeri County, the availability of hot water is attractive to parents who want their children to remain safe from cold related medical conditions.

"Many parents would expect their children are provided with some reasonable level of comfort especially when it comes to bathing and you have to encourage boys to bathe to keep healthy because they are very active," says Ngari contending that hot water especially in Karatina is not an option.

"For young students cold water can bring a lot of health challenges. Those suffering from asthma or arthritis, in a cold region need to have hot water and we find that solar is providing the solution," notes Ngari.

Like hot meals, hot showers are a major selling point in the hospitality industry and increasingly too for school located in areas that experience cold weather. For years institutions have used wood fuel for cooking and heating purposes but that is changing as the society embraces environmental conservation and use of renewable energy.

**Biogas offers healthy option for Burundian refugee** 

Susan Naimana (right) had a comfortable life in Burundi before political instability sent her packing and she found herself at she found herself at the Kakuma Refugee Camp in Kenya. The first thing she had to grapple with was the sweltering heat.

heat. "The sun is so much hotter in Kakuma and I had never experienced the kind of drought I saw here," she recalls. "Kakuma seemed impossible. I did not think anyone would survive here or even succeed



in any form of income

generating activity." Naimana eventually accepted her status as a refugee and started to fend for herself. A month after arriving in Kenya in November 2010, she started a business.

started a business. When Equity opened the Kakuma Branch, Naimana attended financial literacy sessions offered by the staff and understood the importance of banking whatever she earned. "We appreciated that with Equity, we could do transactions from any country we travelled to. Equity connected me to a donor



Naimana inspects her biodigester, which uses waste from livestock to generate biogas.

who trained me on how to generate

who trained me on how to generate biogas," she says. Naimana was the first person in Kakuma to install a biodigester and use clean energy from biogas. She took a loan at the Kakuma Branch to purchase the biodigester. "There is not much crop farming in Kakuma, so the residents don't need manure. They give me the waste from their livestock for free. I soak it in water and then feed the mixture into the biodigester," she says. "I used to use charcoal and firewood. The smoke would irritate my eyes and my hands calloused from fetching wood. But today I cook and light my house with biogas, which is cleaner and friendlier," she said.

### Solar energy helps Mtwapa vendor screen to homes **S** 19

ou are telling me that the King of a Third World country runs around in a bulletproof catsuit?" is a memorable line from CIA agent Everett Ross in the cultural phenomenal film Black Panther. The film is a worldwide hit that saw the Wakanda fever grip the world.

In Mtwapa, Kilifi County where most people could not afford the Ksh700 to watch the film in the cinema, they waited for the movie to be released in blu-ray and trekked to Daniel Mwangi's shop to buy the movie.

Daniel who has been running his shop for over eight years sells DVDs and CDs providing wholesome entertainment for families in the area but it has not been without challenges. He opens his shop at 10am and closes it at 11pm to service the demand.

"My business is next to the road but I cannot install electricity to light up my shop at night. I bought the rechargeable lights that use batteries to light up my shop but they cost Ksh800 and only last for one month. It costs about Ksh20 to recharge it daily using electricity," Mwangi states. He tried a solar product from a company that deals in renewable energy but it wasn't durable enough.

Mwangi was at a crossroads; with demand for movies making

him extend his operating hours well into the night and cost of energy skyrocketing, something had to give. "I have a personal account and I

also belong to a group where we have been taking loans through our savings groups at Equity. It was through our group meetings that a relationship officer of Equity told us about SunKing solar products. I took a loan of Ksh8,000 and the product was delivered to me. I only paid Ksh400 per month to service the loan, which I have cleared."

#### Durable

The product was timely for Daniel as it has offered him an affordable and durable solution to his energy problems.

"I charge the light for two hours through a solar panel and the charge lasts up to three days." he says.

" With demand for movies making him extend his operating hours and cost of energy skyrocketing, something had to give

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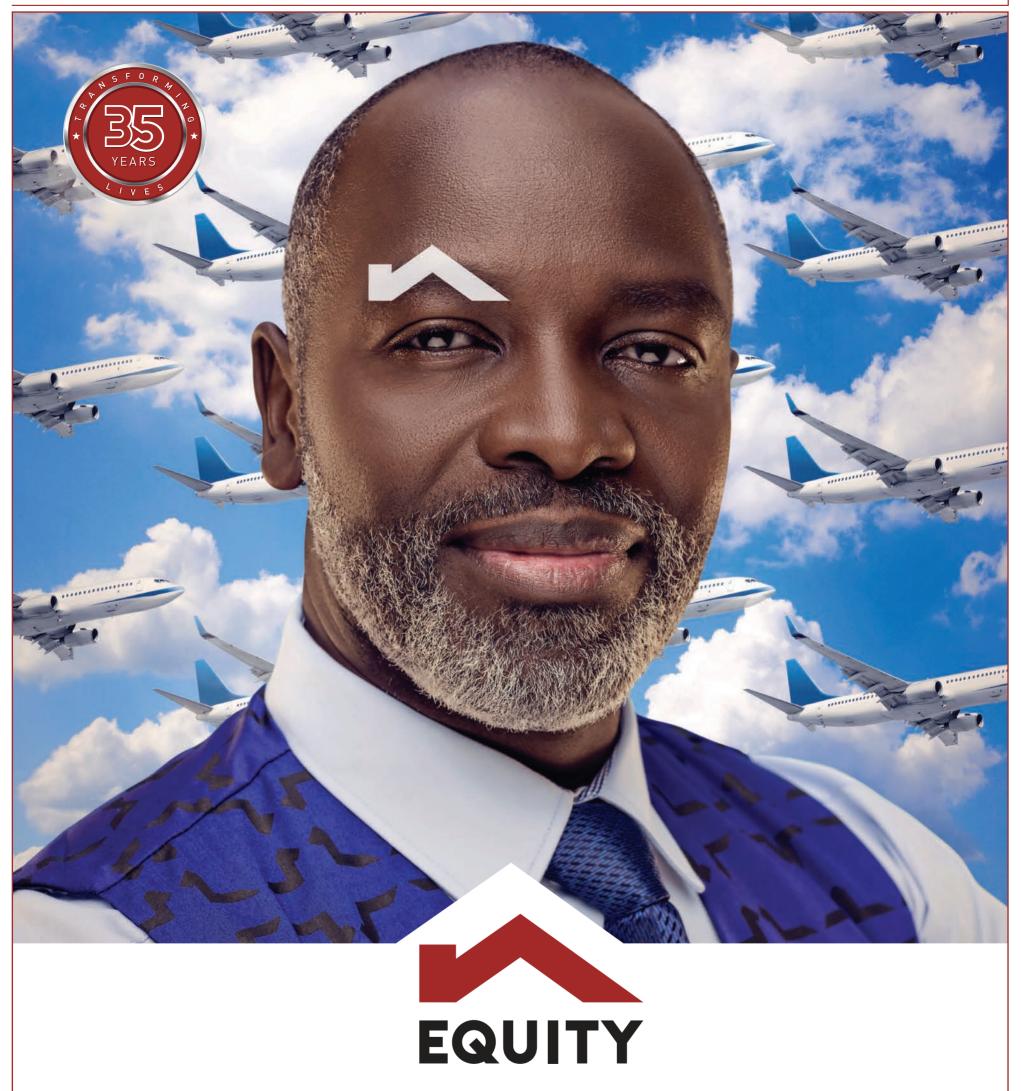


King solar kit, which he uses to light



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### A NEW LOOK FOR AFRICA'S MOST DYNAMIC BANK