

Kenya on the homestretch to supplying power to all

Increased generation, a more diverse energy mix, and a well-developed transmission network, have enabled a stable, steady and affordable supply of electricity in the country

Through a combination of policy initiatives, regulatory framework and tenacity, the Ministry of Energy has recorded tremendous steps towards its goal of achieving universal electricity access in the near future. An estimated 8.3 million households – accounting for more than 75 percent of the population – are now connected to electricity through the National Grid and Off-Grid power solutions. In 2013, this number was only 2.6 million. Peak demand for electricity now stands at 1,998MW.

“The Government put in place favourable policies and regulatory frameworks to increase generation, transmission and diversity of the energy mix. It was a deliberate decision to construct transmission lines, which are the ‘highways’ for electricity, increase connectivity through various initiatives such as Last Mile Project and stabilise the National Grid for us to attain the target of universal electricity access,” Energy Cabinet Secretary, Hon Charles Keter says.

He adds: “As a result of the efforts, Kenya has transitioned from a power deficient to a power sufficient country and will soon be the hub for East Africa’s regional power trade. In fact, we stopped power rationing seven years ago. The Energy sector is a key enabler for the realisation of the Vision 2030 by providing competitively priced base-load generation of adequate, reliable, affordable and competitive



Ten years ago, our demand for electricity was higher than supply. Through efforts, we have now transitioned from a power-deficient country to a power-sufficient nation and will soon be the hub for East Africa’s regional power trade. We balance efficiency and quality of power we provide.”

Cabinet Secretary, Hon Charles Keter



electricity from renewable energy sources of geothermal, wind, solar, biomass and small hydro to attract investment and spur production in industry, agriculture and ultimately, economic growth. The key achievements by the Ministry are as follows: The key achievements by the Ministry are as follows:

- i. Power Generation
 - Installed capacity has grown to 3,024 from 1,768MW in 2013.
 - In terms of geothermal power, Kenya is No. 1 in Africa and No. 7 globally.
 - The contribution of renewable energy in the generation mix has increased from 54 percent in 2009/10 to over 90 percent in 2021.
 - Thermal generation from a high of 45 percent to a low of 11.2 percent, easing the burden of Fuel Energy Charge to consumers.
 - Geothermal is now the leading source supplying the grid.
- ii. The National and Regional transmission system.
 - The transmission lines have grown to 8,468Km from 4,818Km in 2013.
 - Construction of regional transmission lines to facilitate power trade, which are near completion.
 - a) 632Km Ethiopia-Kenya
 - b) 132Km Kenya-Uganda
 - c) 100Km Kenya-Tanzania
- iii. Distribution lines and associated infrastructure to enhance electricity access
 - Number of electricity consumers has increased to 8.3 million customers from 2.3 million.
 - The distribution system has grown to 158,526Km from 132,489Km
- iv. Electrification of public institutions and installation of transformers in all constituencies
 - Electrification of public primary schools stands at 99 percent.
 - Electrification of other public facilities is ongoing. Target is to achieve 100 percent electrification rate.
- v. Off-grid electrification of underserved counties
 - The Ministry, through KPLC and RREC, has completed several mini-grid projects and isolated diesel power plants in off-grid areas.

Key drivers of accelerated power connectivity

i) Last Mile Connectivity Project

Launched in 2015 by the Government in partnership with development partners (African Development Bank and World Bank), this project aims to facilitate affordable and speedy connectivity of rural Kenyan households to the national grid. Under this initiative, households within a radius of 600 metres are connected to electricity at a reduced cost of Ksh15,000. A Stima Loan initiative facilitates those unable to pay the amount in full to pay through instalments for a period of four years. Its goal is to increase connectivity rate by 70 percent as part of the government’s goal to achieve universal access to electricity in the near future.

ii) Global Partnership on Output Aid (GPOBA)

In 2016, the Government launched the Global Partnership on Output Aid programme, which sought to connect Kenyans living in slums and low-income areas to electricity at a cost of Ksh1,500. This programme was implemented in partnership with the World Bank. The project continued with government funding even after GPOBA ended, enabling connection of several million customers.

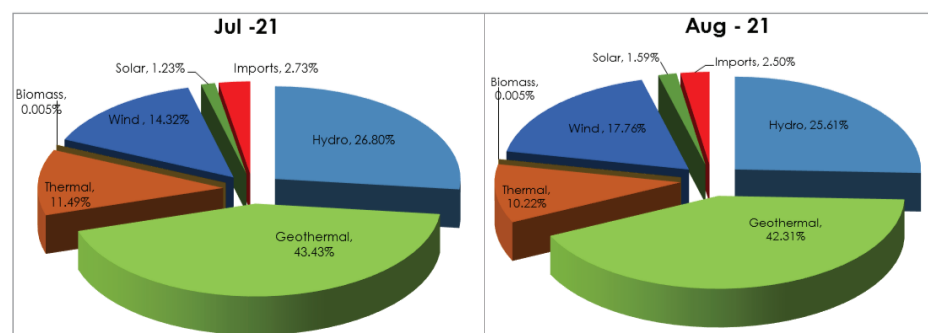
iii) National Public Street Lighting Project

Launched in 2016, the project aimed at lighting up towns to improve road and personal safety, trigger businesses and enhance living standards of urban dwellers who could operate until late hours at night. The Ksh7.6 billion project was envisioned to cover 52 towns across the country as a catalyst for development. A total of 164,310 lanterns have so far been installed at a cost of Ksh18.15 billion.

iv) Kenya Off-Grid Solar Access Project (KOSAP)

KOSAP, launched in 2015 in partnership with the World Bank, targets to light up 14 underserved counties, namely West Pokot, Turkana, Marsabit, Samburu, Isiolo, Mandera, Wajir, Garissa, Tana River, Lamu, Kilifi, Kwale, Taita Taveta and Narok. It aims to provide residents of these areas with access to electricity through solar mini-grids and stand-alone solar systems.

Energy Mix as at July, 2021



Key policy initiatives by the energy ministry

i) Feed-In-Tariff Policy

Published in 2008, this policy facilitated private sector participation in the development of Kenya’s generation capacity from renewable energy sources. It was reviewed in 2010 and 2012 to bring on board other technologies, review the tariffs and streamline other clauses.

The policy is currently being reviewed to exclude all solar and wind projects and only allow small hydro, biomass and biogas projects that produce under 20MW. Solar and wind projects will be administered under the Auction Policy.

ii) Kenya National Electrification Strategy

Launched in December 2018, it expounds on the least cost options to electrify the country. In addition to complementing the GIS system, it has options, the strategy also made provisions for grid extension, grid densification, mini-grids and solar home systems



This (Last Mile Project) model is unprecedented and many countries in Africa have been visiting Kenya Power to learn about this model.”

Principal Secretary, Dr (Eng)

Joseph Njoroge



iii) Bioenergy Strategy:

Launched to an international audience in 2020, it aims to achieve clean cooking in Kenya by the Year 2028. It seeks to harmonize support by the Government, development partners, non-state actors and the private sector in production and consumption of bioenergy in Kenya.

iv) Kenya National Energy Efficiency and Conservation Strategy

Launched to an international audience in September 2020, it aims to enhance awareness in energy efficiency and conservation and provide a pathway for the implementation of an energy efficiency programme. It builds on the theme of energy efficiency in households, buildings, industry, agriculture, transport and power utilities.

- Explaining the policy changes that triggered increased connectivity, Energy Principal Secretary, Dr (Eng) Joseph Njoroge, points at:
- Reduction of cost of electricity connectivity within the radius of a transformer from Ksh35,000 to Ksh15,000 by the Government. Stima Loan, which allows payment of Ksh15,000 in instalments for a period of four years for those unable to pay the amount at once. “This facilitative policy increased customers’ connected to electricity from 2.6 million in 2013 to 8.3 million currently. This connectivity model is unprecedented and many countries in Africa have been visiting Kenya Power to learn about this model,” says Eng Njoroge.



REPUBLIC OF KENYA

STATE OF ENERGY: THE PURSUIT OF UNIVERSAL ACCESS

KENYA
VISION 2030

Kenya gains recognition for its mix of strategies to increase power supply

Country's power sector now ranks among the most developed in sub-Saharan Africa

Kenya has made massive strides in its effort to provide access to power to its more than 47 million people. It has registered much of this progress over the last eight years, thanks to various policy reforms and increased investments in energy.

Today, the country's power sector ranks among the most developed in sub-Saharan Africa.

As the Energy Investments Infrastructure in East Africa report by the East African Energy Charter notes, "Over the last decade, the energy sector in Kenya has seen multiple rounds of sector reforms in the form of legislation and the implementation of its various national strategies."

However, rapid population growth and the quest for fast industrialisation mean that the country has to further expand its capacity to meet rising demand.

Kenya aims to attain the middle-income status by 2030, by industrialising. That quest can only be realised if the country increases its energy consumption.

Former UN Secretary General Ban Ki-moon once



Steam venting from a geothermal power generating plant in Olkaria, Kenya.

said: "Energy is the golden thread that connects economic growth, increases social equity, and provides an environment that allows the world to thrive."

He added: "Widespread energy poverty condemns billions to darkness, to ill health, to missed opportunities. Energy poverty is a threat to the achievement of the Millennium Development Goals (read

Sustainable Development goals today)."

Kenya has done well in exploiting its mix of hydro-power, thermal, geothermal and wind energy. It is also among standout African countries with a focus on renewable energy. The other countries are Angola, Sierra Leone, South Africa and Uganda.

The Rural Electrification and Renewable Energy Corporation (REREC) continues to make a positive difference in increasing energy access in the country.

It is also worth noting that Kenya is among the world's most active regions for geothermal development. This was brought home with the commissioning of the 280MW geothermal project in Olkaria. Geothermal now accounts for more than 40 per cent of the electricity consumed by Kenyans. The Olkaria project is also important for electricity trade among the East African countries as they also seek to exploit their geothermal resources. KenGen is sharing its skills, expertise and experiences.

Kenya is also exploring the possibility of using nuclear power to meet its growing energy demand. The Ministry of Energy and Petroleum has noted the potential use of nuclear energy for power generation. Consequently, it established the Nuclear Power and Energy Agency (NUPEA) and charged it with the responsibility of promoting and implementing Kenya's Nuclear Power Programme.

Also, the Kenya Electricity Transmission Company Limited (KETRACO) is implementing several projects with an aim of facilitating regional grid integration. These projects are enabling the region to share or tap the competitively generated energy and meet the rising demand created by activities aimed at transforming the economies.



Geothermal Development Company (GDC) Milestones

ADVERTORIAL



A well at the Menengai Geothermal project

Phase I

- Over forty (40) wells have been drilled and steam equivalent to 170MWe realized
- Construction of steam gathering system complete
- Independent Power Producers (IPPs) identified

Phase II

- Scientific exploration and infrastructure development (access roads and water supply system) is complete
- Exploration and appraisal drilling are ongoing

Phase III

- Project development preparation is ongoing

Baringo – Silali Geothermal Project

Has an estimated resource potential of 3000MW. GDC is developing the project in phases. The first 300MW will be developed from Paka, Korosi and Silali prospects with each prospect contributing 100MW each.

- GDC has developed the requisite infrastructure
 - Water reticulation system and well pads have been developed
 - 100km of road constructed



A rig in the Korosi Prospect, Baringo – Silali project

- Three (3) appraisal wells successfully drilled in the Paka prospect with one of the wells producing steam equivalent of 17 MWe
- Exploration drilling currently on going in the Korosi prospect with two (2) wells completed and drilling of another well is ongoing
- Appraisal drilling is currently ongoing in Paka
- Twenty (20) community water points which supply water to the community have been constructed. Forty (40) water troughs for livestock have also been constructed

Suswa Geothermal Project

The estimated potential is 750MW. GDC will develop the project in phases of 100MW each. All the pre-feasibility studies are complete. GDC is currently in discussions with various Development Partners for financing of the project.

GDC Equipment

- Drilling equipment, Well completion equipment, scientific exploratory work equipment
 - Reservoir management equipment
 - Geothermal well testing equipment
 - Geo-Science and Geographic Information System (GIS) laboratories
 - Environmental monitoring and management equipment
- GDC also provides consultancy and equipment leases for drilling and exploration

GDC Direct Use Pilot Project

Direct Use refers to the use of geothermal resources for alternative use other than electricity generation. The Direct Use demonstration in Menengai Geothermal Project showcases four (4) alternative uses of geothermal energy:

- Greenhouse farming



A green house, part of the Direct Use demonstration Project within the Menengai Geothermal Project

- Fish farming
- Milk pasteurization
- Laundromat and a
- Grain dryer

Geothermal Centre of Excellence (GCE) Training Facility

The Centre offers comprehensive, peer-reviewed short course programs in all aspects of geothermal energy development. Emphasis is placed on modern techniques of surface exploration, drilling, resource assessment and project management. Programs on current geothermal Direct Use applications are also offered.



Learners undergoing a training facilitated by GDC's Geothermal Centre of Excellence

GDC drilled 59 wells in Olkaria Geothermal Project which are currently being used to generate 320MW of electricity



Formation

Geothermal Development Company (GDC) was incorporated in 2008 by the Government of Kenya to accelerate development of geothermal resources in Kenya.

Vision Lowering the cost of power in Kenya
Mission To develop 1,065MW of geothermal resources by 2030

Olkaria Geothermal Project

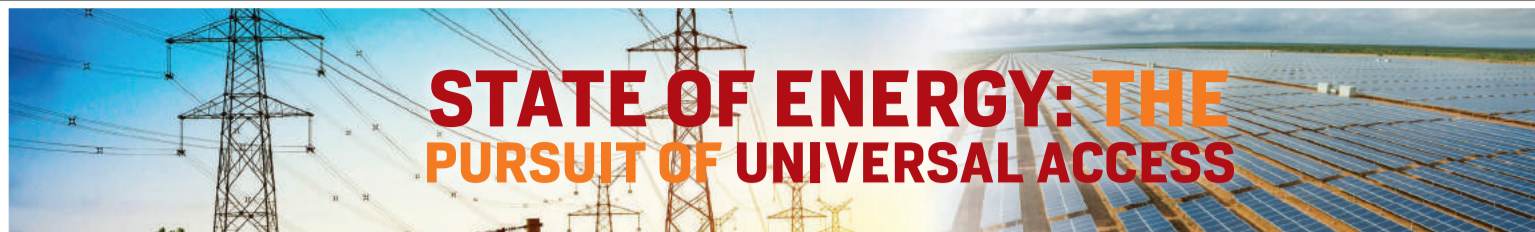
GDC drilled 59 wells in Olkaria Geothermal Project which are currently being used to generate 320MW of electricity.

Menengai Geothermal Project

It has an estimated potential of 1600MW.



REPUBLIC OF KENYA



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KENYA VISION 2030



KETRACO registers big transmission milestones

Kenya Electricity Transmission Company Ltd (KETRACO) has constructed a total of 2,704km of transmission infrastructure since its inception 13 years ago. This has significantly supported the Government's efforts to increase reliable electricity supply to Kenyans and add to the regional power pool. The achievement is the result of 27 transmission projects across the country.

KETRACO, a Government agency, is mandated to plan, design, construct, own and operate high voltage electricity grid and regional power interconnectors. Its initiatives support the Big Four national development agenda and Kenya's Vision 2030 development plan that seeks to transform the country into "a newly industrialising, middle-income nation providing a high-quality life to all citizens by the year 2030".

KETRACO projects are classified into System Strengthening, Power Evacuation, Regional Interconnectors, and Electricity Access.

System Strengthening Projects aim to enhance reliability of power supply in the country, reduce transmission losses and address cases of low voltages. Examples of ongoing projects include the Nairobi Ring Associated Substations. The project scope entails construction of Isinya 220kV Substation and 220/66kV substations at Athi River, Ngong (Kimuka) and Malaa, to strengthen power supply within the Nairobi Metropolitan.

The Mariakani 400/220kV Substation project, which is a major component of system strengthening infrastructure, involves the construction of a 400/220kV 4x200MVA substation at Mariakani in the coast region. Construction works commenced in February 2019.

System reinforcement projects such as Isinya 400/220kV and Nairobi North 220/66kV substation in-

volve the construction of a 400/220 kV substation at Isinya and a bay extension at existing Nairobi North substation.

The 66km 132kV Kitui- Wote TL, the 65km 132kV Lessos-Kabarnet TL and the 68km 132kV Olkaria-Narok TL projects fall in the category of Power Transmission System Improvement Projects. These projects aim to expand the transmission network, improve access to electricity, reduce system losses and provide alternative supply paths to the various centres and their environs.

The 132kV Sondu-Ndhiwa (Homa Bay/Ndhiwa), a 69km project, is expected to enhance electricity access and connectivity in the region by improving the transmission network.

Nanyuki-Isiolo 132kV 5Km underground cable project will improve quality of power supply, meet growth demand, and increase accessibility in Nanyuki, Isiolo and their environs. There is also the 132kV Nanyuki-Rumuruti project, expected to further enhance power access.

The 135km transmission line section of the Turkwel-Ortum-Kitale 220kV was completed in March 2020, but the construction of related substations is still underway. Once complete, the project is expected to improve power supply quality in the covered towns and offer an alternative evacuation path for the Turkwel Hydro power plant.

The 196km 132kV Isinya (Kajiado)-Namanga project should be complete by December 2021. It will increase electricity access in the surrounding centres.

The 120km 132kV Sultan Hamud-Merueshi-Loitoktok project will also boost access and connectivity through reinforcement of the transmission grid.

Other major projects towards improving access to electricity include:

- The 220kV Garsen-Bura-Hola-Garissa project, consisting of a 240km 220kV line and substations at Garissa and Hola and/or Bura, and an extension bay at Garsen.
- The 67km 132kV Rabai-New Bamburi-Kilifi project in the coastal region.
- The 132kV Awendo- Isebania project, consisting of a 50km line through Migori and a new Substation at Isebania.
- The 400kV Isinya-Konza project, which entails a 45km 400kV transmission line with substations at Konza and a bay extension at Isinya, scheduled for completion by December 2022.
- The 220kV Kamburu-Embu-Kibirigwi-Thika project, which comprises a 150km 220kV TL, new substations at Embu, Kibirigwi and Thika and a bay extension at Kamburu, also marked for completion by December 2022.

Regionally, the first power interconnection between Kenya and a neighbouring country was done in 1954 following the commissioning of the Kenya-Uganda 132kV power line. The project connected the power generation at the Owen Falls Hydroelectric power station with the load centres in Kenya.

KETRACO is currently constructing additional regional power interconnectors that will make Kenya a hub of power trade in the region. The projects include:

- The 132km 400kV Lessos-Tororo line (Kenya-Uganda Interconnector), which is expected to allow exchange of power between Kenya and Uganda, thereby increasing access to electricity for both countries.
- The 612km 500kV Eastern Electricity Highway Project (Kenya-Ethiopia), whose works include design and construction of a 612km 500kV HVDC transmission line, a 2000MW bipolar convertor



A tower in a section of the 400kV Loiyangalani - Suswa Transmission Line.

Station and 400kV Substation at Suswa, plus extension of existing Suswa substation.

- The 96km 400kV Kenya-Tanzania Interconnector, which entails construction of a 96km, 400kV double circuit line from Isinya to Namanga. This is part of a larger Kenya-Tanzania-Zambia interconnector project that is expected to connect the East African Power Pool to the Southern Africa Power Pool.



Rebecca Miano (Mrs.), MBS Managing Director & CEO

Generating Energy for the Nation

KenGen prides itself as the market leader in the provision of reliable, quality, safe and competitively priced electricity to homes and industries in Kenya. Currently, the company has an installed capacity of **1,818MW**, with **86 per cent** of this capacity coming from **renewable and clean energy sources**. Notably, KenGen supplies **about 72%** of the electricity consumed in Kenya.

Geothermal power development has been the anchor of KenGen's capacity growth. The completion of the 172MW Olkaria V geothermal power plant in 2019 expanded the country's geothermal capacity to 856MW, catapulting Kenya to position number seven globally among the largest geothermal energy producers.

KenGen is on course to deliver another geothermal power plant, **Olkaria I Additional Unit 6** which will bring online **83MW** by the end of 2021 taking Kenya closer to the IGW club of top geothermal producer in the world.

Under our Corporate Strategy, KenGen is leveraging on its specialization in energy generation to expand its operations across Africa. Under this South-to-South arrangement, KenGen has secured multi-million shillings drilling contracts in **Ethiopia** and **Djibouti**.

In line with Kenya's commitment to tackle Climate Change by **reducing Greenhouse Gas (GHG) emissions by 30% by 2030**, KenGen is implementing **six Clean Development Mechanism (CDM) projects** which have offset a cumulative **4,617,309 tonnes** of Carbon Dioxide (CO₂) over the last 18 months.



KenGen team of engineers drilling the first geothermal well for Ethiopia Electric Power (EEP) company, setting in motion Phase II of Ksh.7.6 billion contract. The company is currently undertaking a multi-million shillings drilling contracts in Ethiopia and Djibouti.



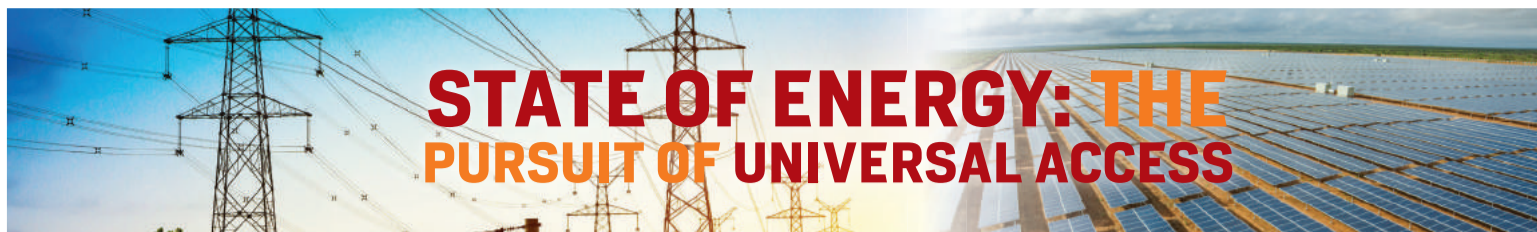
KenGen Geothermal Drilling Rig at Olkaria. KenGen currently supplies about 72% of the electricity consumed in Kenya, with 86% of this coming from renewable and clean energy sources.



Olkaria I AU 6 Power Station. Currently, KenGen is on course to deliver another geothermal power plant, Olkaria I Additional Unit 6, which will bring online 83MW by the end of 2021 taking Kenya closer to the IGW club of top geothermal producer in the world.

As an organisation, we have leveraged the use of **state-of-the-art technology**, innovation, skilled and motivated human resource to ensure our operational and financial success. This has been made possible by deliberate effort to upskill our staff over the years as well as embracing diversity mainstreaming of gender and youth through the **Pink Energy** and **Y-Gen** initiatives.





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KENYA
VISION 2030



The power of transformation: Brightening the future of Kenya through electrification



His Excellency President Uhuru Kenyatta switches on power at a home in Narok in 2018, during the launch of the Last Mile Connectivity project in the county.

At the dawn of the last century, a power generator shipped to Mombasa from Zanzibar by Harrali Esmailjee Jeevanjee became the single spark that ignited the engine that has seen millions of Kenyans access electricity over the years.

In 1922 when the East Africa Power and Lighting Company was incorporated, dif-

ferent power entities that connected a few Kenyans to electricity were brought together under one body. From then to date, we have extended our transmission and distribution network across the country, covering a total of 248,834km. We span the length and breadth of this country, using ingenuity to bring our services to even the remotest and most difficult to parts to access.

Accelerated Electricity Connectivity Projects

In 2012, approximately 2.2 million customers or 27 percent of the Kenyan population had been connected to the grid through various electrification initiatives such as the Global Partnership on Output Based Aid (GPOBA) and the Last Mile Connectivity Programme by the Government. These have seen the number of customers quadruple to more than 8.35 million today.

Providing access to electricity helps to remove barriers to economic growth because electricity catalyses development. Hence, the Government is driving the universal electricity agenda through a number of connectivity programmes, through which more than 80 percent of the population has gained access to electricity.

The Last Mile Electrification Programme was launched in 2015 to scale up connectivity in rural and peri-urban areas by providing subsidies for grid extension to enable customers access electricity at an

affordable cost.

The Last Mile Connectivity programme has been funded by the Government of Kenya at a cost of more than Ksh70 billion through the support of international lenders such as the African Development Bank (AfDB), the World Bank, the French Development Agency (AFD), the European Union, European Investment Bank (EIB) and Japan International Cooperation Agency (JICA). The programme, which is now in its fifth Phase, has so far connected over 800,000 households across the country, translating to providing access to electricity to more than four million Kenyans who would otherwise not easily afford it.

According to the *Energy Progress Report for 2021*, by the World Bank, International Energy Agency and other partners, Kenya's connectivity rate is the fastest in the world. This has enabled Kenya to make great strides on the United Nation's Sustainable Development Goals (SDGs) no. 7 on access to electricity, and no. 11 on sustainable cities and communities.

In his address to the nation on Madaraka Day in 2020, H.E President Uhuru Kenyatta applauded the programme, saying: "...From 2013, and in only seven years of my presidency, we have connected close to 3.5 million households, bringing the number of households connected close to 8 million.... We take pride in this, not because we are better, but because we have to finish the business of our founding fa-

thers in order to envision a new dream."

Millions of Kenyans who have been connected to electricity through the programme have seen their lives transformed profoundly. When Judy Wahu Wang'ombe, an 83-year-old grandmother from Ndimaini village in Karatina, Nyeri County, was connected to electricity through the Last Mile Connectivity Programme, she expressed her joy by breaking into dance.

"I thought I would die without ever having power connected to my home. But now look! See the amazing wonders!" she said.

Other beneficiaries from all areas of the country share similar sentiments. Their lifestyles have been changed, and once sleepy trading centres are now thriving with economic and social activity.

Electricity transforms the lives by creating opportunities for people and enterprises to work for longer hours. Villages across the country have been readied for the opportunities that will turn them into bustling towns and thriving cities. Indeed, villages have been connected to the global village. Electricity is connecting young people across the country with local and global opportunities to better their futures.

As a business, we view the investments made in this programme, in partnership with the Government and development partners, as an investment in Kenya's future.

The contribution of REREC projects to universal access in Kenya



Rural Electrification & Renewable Energy Corporation (REREC) which is a successor of the Rural Electrification Authority (REA) established in 2007 under Section 66 of the Energy Act of 2006 has continued to play a leading role in ensuring that the country achieves its universal access target through its various projects. Established through the Energy Act 2019, REREC is responsible for rural electrification and under its expanded mandate the Corporation is championing the use of renewable energy with the ultimate goal of ensuring enhanced accessibility and connectivity of electricity for all citizens. Reliable, renewable and affordable energy is crucial in the delivery of the Big 4 agenda which prioritises food security, manufacturing, universal healthcare and affordable housing for all Kenyans. Universal access to electricity is also a key requirement for meeting Kenya's development goals under Vision 2030 – the country's development plan and blueprint which aims at achieving an industrialized and middle-income country providing a high quality of life to all of its citizens. In 2007, when REA started its operations; Kenya's electricity access levels were at four per cent and currently the access level is over 76 per cent. The impressive increase in electricity access in Kenya is largely attributed to the Government's commitment and investment in REREC projects in rural electrification and renewable energy. REREC projects are varied and are as outlined below:

1. Electrification of Public Facilities

The electrification of public facilities (main public facilities being secondary schools, trading centres and health centres) has been the Government's



The 50 MW Garissa Solar Power Plant.

main focus in increasing connectivity and electricity access across the country. By June 2016, there were an estimated 88,570 public facilities in the country, out of which 60,247 (68 per cent) were electrified while 28,323 (32 per cent) were unelectrified. An additional 1,481 were electrified from July 2016 to June 2018. Going forward, the Corporation is currently working towards achieving 100 per cent electrification of all public facilities to enable the country meet its connectivity and access level targets.

2. Electrification of Public Primary Schools

The electrification of Public primary schools has been undertaken to support the Government's Digital literacy Programme. A total of 22,927 primary schools have since been electrified across the country. The project has been a key contributor to the universal access target and improvement of education standards.

3. Isolated Diesel Stations

REREC has implemented nineteen (19) isolated Diesel stations in various towns which were previously not served by the grid network in the northern and coastal parts of the country in Wajir, Mandera, Marsabit, Turkana, Garissa and Lamu counties.

4. Hybrid systems

Hybridizing of four diesel power stations with solar has been undertaken in Takaba, Eldas, and Rhamu to make them more sustainable by reducing their operational costs.

5. The 50 MW Garissa Solar Power Plant

This is the largest solar power plant in East and Central Africa, and is a national initiative aimed at promoting the use of renewable energy. The project involved implementation of a 50MW solar power generation plant in Garissa for connection to the national grid. The project has been commissioned and is generating power to the national grid. Currently the plant is contributing two per cent of the energy mix in Kenya.

6. The Turkwell - Lokichar Line

The project was implemented to extend grid supply to off-grid areas in northern Kenya. The project involved the construction of a 120KM of 66KV Turkwell-Lokichar line and installation of a 23MVA 66/33KV substation in Lokichar and 10MVA 66/33KV substation at Kalimungorok.

7. Solar-Mini Grid Projects

Twenty-six (26) solar mini-grid projects have so far been implemented to power towns in the off-grid

counties of Wajir, Turkana, Marsabit, Mandera and Garissa. All of these mini-grids have been commissioned, and customers connected to power. Each solar mini-grid has a diesel generator backup and each station has the capacity to connect 150 customers (homesteads, schools, dispensaries, and shops). An additional eight (8) solar mini-grid projects are currently under construction in the counties of Wajir, Marsabit, Kwale, Turkana, Siaya and Homabay.

8. Solar PV Systems for Secondary schools

A total of fifty-three (53) secondary schools have been installed with solar systems in Marsabit, Samburu, Isiolo, Wajir, Mandera, Garissa, Kitui and Lamu counties.

9. Promotion and Development of other Renewable Energy Technologies

The Corporation has implemented six (6) pilot projects in wind (2), biogas (2) and mini-hydros (2) in Marsabit, Kajiado, Kiambu, Meru and Kirinyaga counties. The two mini-hydros are community-based projects where REREC provided financial and technical support to enhance their operations.

9. Lighting up Informal Settlements

The Corporation in partnership with other stakeholders has been involved in the upgrading of informal settlements across the country through the installation of high-mast flood lights. The Corporation has so far installed 104 high-mast flood lights in Kibera, Mathare, Korogocho, Ngomongo, and Mukuru kwa Njenga in Nairobi, as well as Kiandutu in Thika.