

# Kenya

## Introduction

This note was developed by GOGLA with the support of the World Bank Group Lighting Global Program, the Energy Sector Management Assistance Program (ESMAP), the Shell Foundation, USAID, Power Africa, the UK Foreign Commonwealth & Development Office (FCDO), Africa Clean Energy Technical Assistance Facility (ACE TAF) and Sustainable Energy for All (SEforAll). It is part of a series of briefing notes that provide a high-level overview of the status of countries' off-grid solar markets, as well as relevant policies and programs<sup>1</sup>.

## Key statistics<sup>2&3</sup>

### Demographics

Total Population	52,573,973
Population Density per km <sup>2</sup>	90.3
GDP per Capita	USD 1,816.5
GDP Growth	5.4%

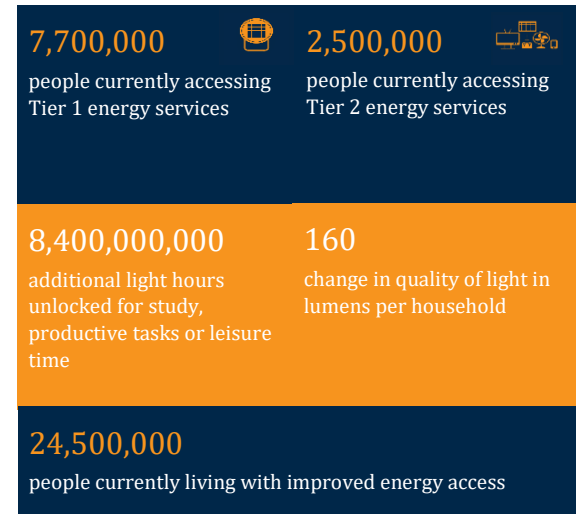
### Energy Access Deficit

National Electrification Rate	75% <sup>4</sup>
Urban Electrification Rate	90.8%
Rural Electrification Rate	61.7%
Number of people without access to electricity <sup>5</sup>	15,929,914
% of quality-verified <sup>6</sup> (QV) vs non-QV products in the market <sup>7&amp;8</sup> (H1, 2021)	QV: 98% Non-QV: 2%

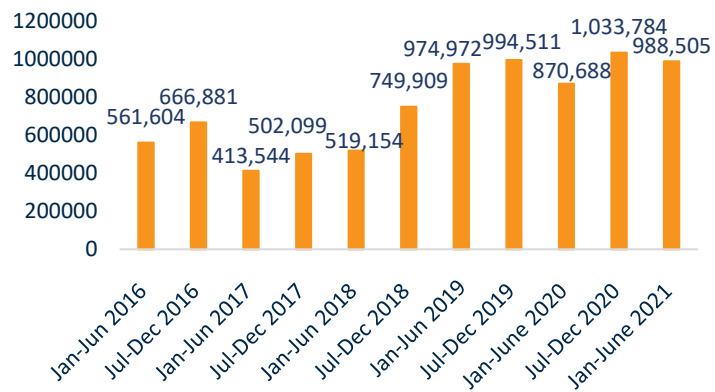
### Electrification Planning

Electrification Targets <sup>9</sup>	Universal access by 2022
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## Impact<sup>10</sup>



## Sales<sup>11</sup>



<sup>1</sup> The information and views expressed in this brief are GOGLA's alone and are based on our current understanding of the policy situation in this country. We welcome any updates, revisions or clarifications at [info@gogla.org](mailto:info@gogla.org).

<sup>2</sup> <https://data.worldbank.org/> (last updated in 2019)

<sup>3</sup> <https://www.usaid.gov/powerafrica>

<sup>4</sup> National electrification rate as projected by the [Kenyan Government](#) is over 75%. The initial national electrification rate as projected by the [World Bank](#) in 2019 was 69.7%.

<sup>5</sup> <https://trackingsdg7.esmap.org/>

<sup>6</sup> Quality-verified products are tested according to the IEC TS 62257-9-8. For more information please see [the Verasol quality assurance programme](#).

<sup>7</sup> Share of quality-verified (QV) and non-QV products sold by GOGLA and Lighting Global affiliates.

<sup>8</sup> Data on a specific region, country or product category is only included when it has satisfied the three-data point rule, meaning that at least three separate product manufacturers have reported

data for any single data point. When we have fewer than three responses for a region, country or product category, no results are shown to protect the proprietary interests of the companies who have supplied data in support of this industry report.

<sup>9</sup> The Kenya National Electrification Strategy (KNES), 2018

<sup>10</sup> Impact numbers have been estimated on the basis of the [Standardized Impact Metrics for the Off-Grid Solar Energy Sector](#). The reported estimates differ from the previous edition of the country briefings due a change in the calculation approach. Note that while the numbers shown represent the aggregate impact of key players in the off-grid solar sector, these estimates do not present the full country impact of off-grid solar lighting products sold.

<sup>11</sup> All sales data included in this briefing is derived from the "Global Off-Grid Solar Market Report Database", result of a joint primary data collection effort carried out by GOGLA in partnership with IFC Lighting Global and the Efficiency for Access Coalition. The public version of the resulting report of the effort is available [here](#).

## Current Status

Sales of off-grid solar products in Kenya totalled approximately 988,505 units between January and June 2021. This represents a slight 4% decrease in sales volumes when compared to the second half of 2020. The decrease in sales volumes can be attributed to the COVID 19

Kenya is the most mature off-grid solar market in in Africa. The country registered a slight decline in overall sales volumes, following the challenges of the pandemic and the reintroduction of VAT - which has since been removed.<sup>12</sup>

Kenya's off-grid solar market growth is underpinned by the country's political stability, economic growth, ease of doing business, consumer awareness campaigns and a supportive policy environment for the sector. Market growth has also been aided by the widespread use of mobile money, which has played a key role in facilitating the PAYGo business model.

However, off-grid solar sales have been mostly concentrated in more densely populated and wealthier counties. The World Bank backed, US\$150 million, six-year Kenya Off-Grid Solar Energy Access Project (KOSAP), which began in 2017, is specifically designed to extend off-grid solar into 14 underserved counties. It promotes mini-grids, Stand Alone Solar solutions for homes, schools, clinics and government offices, as well as solar pumping and improved cookstoves. It aims to reach around 1.3 million people living in 277,000 households with solar lights and solar home systems by 2023<sup>13</sup>.

Following the outbreak of COVID-19, the government of Kenya recognized energy as an essential service, including off-grid solar companies and mini-grid operators, which allowed companies to continue operations.<sup>14</sup>

## Policy, Regulation and Sector Planning

The Kenya National Electrification Strategy (KNES) is Kenya's roadmap to achieving universal energy access. The strategy recognizes the key role played by off-grid solutions such as mini-grids and Stand Alone Solar systems in energy access. The strategy also highlights the crucial role that the private sector will need to play in providing off-grid solutions for Kenyan homes, businesses and communities in rural or remote parts of the country. The strategy envisions 1.96 million connections through Stand Alone Solar home systems to serve housing clusters too remote, or too small to be connected to the national grid.<sup>15</sup>

<sup>12</sup> [Global Off-Grid Solar Market Report H1 2021, GOGLA](#)

<sup>13</sup> [Kenya Off-Grid Solar Access Project for Underserved Counties: Project Appraisal Document, World Bank, 2017](#)

## Promoting Quality & E-Waste Management

Mandatory standards are in place for pico-PV systems, which are fully aligned with IEC quality standards. A 'pre-verification of conformity', or PVoC process is being used to ensure that all products that enter the country legally meet the quality standards.

The waste management sector in Kenya is overseen by the National Environment Management Authority (NEMA) and the existing legal framework for general waste management includes the Environmental Management and Coordination Act (1999) and the Waste Management Regulations (2006).

The five main laws and regulations that deal with e-waste management issues in Kenya include: the 2021 Sustainable Waste Management bill, the 2020 draft Extended Producer Responsibility regulations, the 2019 draft Environmental Management and Co-ordination (Electrical and Electronic Waste Management) regulations, the 2013 draft e-Waste regulations and the 2013 draft e-waste bill. These laws and regulations remain in draft and have not yet been approved by the relevant authorities.

## Taxation

The off-grid solar industry was supported greatly by import duty and sales tax exemptions until 2016. From 2016 onwards, import duties and sales tax on some solar lights, components of solar home systems and related appliances were introduced, as part of a change that was implemented across the East Africa Community.

Since 2014, solar products in Kenya have been exempt from VAT (Value Added Tax). Over this period, the off-grid solar industry has thrived, reaching almost 2-million-unit sales in 2019. However, the 2020 Finance Act removed the VAT exemptions on solar products.

After intensive lobbying by the sector, the government reintroduced the VAT exemptions on solar products through the 2021 Finance Act.

## Investments

Kenya has attracted more private investment into off-grid solar than any other country in Africa, resulting in its status as Africa's largest and most successful off-grid solar industry. The country has also received several grant-making and concessional financing schemes that have helped to unlock private capital<sup>16</sup>.

In 2021, the Green Climate Fund (GCF) approved US\$170.9 million in financing for the African

<sup>14</sup> [Global Off-Grid Solar Market Report H2 2020](#)

<sup>15</sup> [The Kenya National Electrification Strategy, 2018.](#)

<sup>16</sup> For more information, please see [GOGLA Bridge](#).

Development Bank's Leveraging Energy Access Finance Framework (LEAF) program. LEAF aims to unlock commercial and local-currency financing for decentralized renewable energy (DRE) projects in six program countries including Kenya.<sup>17</sup>

## Sector Support Programs

Currently, the main sector support program in Kenya is the World Bank-funded Kenya Off-Grid Solar Project (KOSAP). KOSAP aims to extend the market into underserved counties through a combination of results-based financing (RBF) and local currency working capital financing. In addition, the Kenyan government together with the World Bank recently announced the Kenya National Electrification Strategy (KNES), a roadmap to achieve universal energy access by 2022<sup>18</sup>.

The European Union is funding a technical assistance program that provides institutional and other types of support to public and private sector stakeholders of the Kenyan energy sector to identify, plan and implement renewable energy, energy access and energy efficiency projects. The program seeks to boost the capacity of public sector stakeholders at the national and county levels to offer end-to-end support for energy plans.<sup>19</sup>

The KawiSafi Ventures Technical Assistance Facility (KSV TAF) is a 5-year program officially launched in April 2020. The KSV TAF has been seeded with US\$5 million from the Green Climate Fund (GCF) and aims to address targeted market failures or externalities in the off-grid energy ecosystem in Kenya and Rwanda. KSV TAF provides both firm-level and sector-level support that falls outside typical investment activities, but if implemented, would support positive impacts for communities in Kenya and Rwanda. Support includes consumer protection, promoting gender inclusion and knowledge creation.<sup>20</sup>

In 2020, a group of leading off-grid solar companies gathered in Nairobi to discuss the opportunity to take collective action to improve solar e-waste management in Kenya through the Kenya Solar Waste Collective. The group identified a list of potential activities including coordinated collection activities, joint campaigns for consumer awareness and education, shared logistics and collaboration with recyclers. E-waste management is considered a non-

competitive area, and through collective action, the aim is to reach economies of scale, access higher volumes of waste, enable operational efficiencies and yield cost savings. The Kenya Solar Waste Collective (KSWC) currently consists of seven companies (Azuri, BBOX, d.light, ENGIE Energy Access, Greenlight Planet, M-KOPA, and TOTAL) and three advisors (GOGLA, KERA and Sofies).

The Africa Enterprise Challenge Fund (AECF), through the Renewable Energy and Climate Technologies Sub-Saharan Africa (REACT SSA) program, is supporting private companies that promote the use of renewable energy. Funded by the Swedish International Development Authority (SIDA), the REACT SSA initiative seeks to reduce poverty by increasing the use of renewable energy in off-grid households. In Kenya, the program has a dedicated RBF facility of US\$4 million, to incentivize energy companies to accelerate energy access, especially among unserved and underserved low-income households. The RBF facility is to be implemented from July 2021 to December 2023.<sup>21</sup>

Energising Development (EnDev) has a program in Kenya that works to facilitate access to off-grid electricity. EnDev Kenya has supported the uptake of quality verified, affordable and energy-efficient pico-PV systems in rural areas. EnDev Kenya aims to establish and strengthen sustainable and commercially viable supply and distribution models for pico-PV products in rural Kenya. Three pico-PV RBF projects have been implemented under EnDev Kenya. These pico-PV RBFs aim to build sustainable and affordable credit lines for small solar systems in rural areas and are implemented by GIZ.<sup>22</sup>

## Industry Association

The Kenya Renewable Energy Association (KERA) is an independent non-profit association dedicated to aiding the growth and development of the renewable energy sector in Kenya. KERA's key roles are promoting the interests of members of the renewable energy industry among the government, public sector, the general public and other organizations that impact the development of the industry. KERA also acts as a forum and ideas exchange for matters relating to renewable energy development and adoption in Kenya.<sup>23</sup>

<sup>17</sup> <https://www.afdb.org/en/news-and-events/press-releases/green-climate-fund-approves-1709m-co-financing-african-development-banks-leaf-program-44512>

<sup>18</sup> The Kenya National Electrification Strategy (KNES), 2018

<sup>19</sup> <https://www.ied-sa.fr/en/home/newsgb/366-ied-is-selected-by-kenya-s-ministry-of-energy-to-provide-institutional-and-technical-capacity-building-to-the-renewable-energy-sector.html>

<sup>20</sup> <https://www.kawisafi.com/taf.html>

<sup>21</sup> <http://www.aecfafrica.org/sites/default/files/react-rbf/2020-12/REACT%20RBF.pdf>

<sup>22</sup> <https://endev.info/countries/kenya/>

<sup>23</sup> <https://kera.org/>

## Opportunities and Barriers

With KOSAP, Kenya has the potential to develop a best-in-class mechanism for incentivizing companies to enter underserved areas. This could make a major contribution to reaching national energy access targets. However, continuous dialogue with the private sector is needed to ensure KOSAP is well-designed, implemented and monitored to minimize potential market distortion and maximize sustainability.

The Finance Act 2021 reinstated VAT exemptions on some solar products. Although this is commendable, there is need for consistency in the solar tax regime. The varied tax regime, in which VAT and import duty is being levied on some solar appliances such as solar refrigerators and water pumps, is raising the general cost of solar products.

## Further Information

- [Stand Alone Solar Market Update: Kenya, Africa Clean Energy Technical Assistance Facility, 2021.](#)
- [Global Off-Grid Solar Market Report H2 2020, GOGLA.](#)
- [Strengthening the Off-Grid Solar electrification market through improved policy and advocacy in East Africa, National Renewable Energy Associations in East Africa, 2021.](#)
- [The East African regional handbook on solar taxation, USEA, UNREEEA and KEREAA, 2020.](#)
- [Kenya Fact Sheet, USAID Power Africa.](#)
- [Kenya Off-Grid Solar Access Project for Underserved Counties: Project Appraisal Document, World Bank, 2017](#)
- [Energy Africa: Kenya Compact Development and Final Report, Evidence on Demand, 2016](#)
- [Kenya Off-Grid Solar Access Project for Underserved Counties \(KOSAP\), Lighting Africa, 2018](#)
- [Lighting Africa Country Page - Kenya](#)
- [Regulatory Indicators for Sustainable Energy \(RISE\) - Kenya](#)