Aloe Energy

COUNTRY BRIEF · NOVEMBER 2026

Kenya: grid and electricity access

Eastern Africa Power Pool

17 M
people live without night-time light, a proxy for no power

95%
of them live within 15 km of a power line

7,477
km of high-voltage lines, 66 kV and above

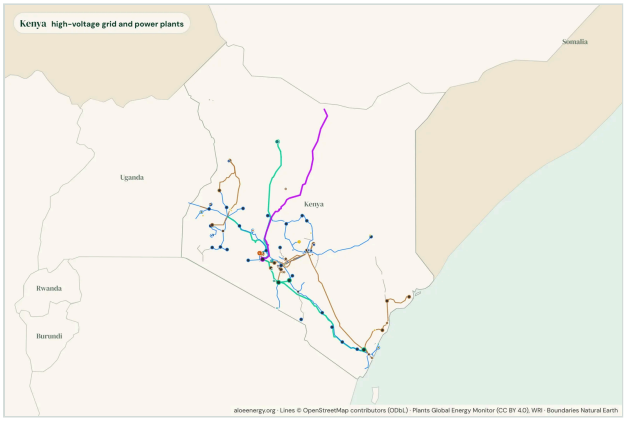
3,381
MW of operating power plants, 10 MW and above

42
power plants and transmission lines planned or under construction

About 17 million people in Kenya live where satellites see no electric light at night, and 95% of them live within 15 km of a power line. This page brings together what our open atlases show for Kenya: about 7,477 km of high-voltage lines, 3,381 MW of power plants and the projects still to come.

WHAT THIS MEANS

To reach 100% electricity access by 2030, Kenya needs to add about 4 percentage points a year from 2024: from 75% today.



Map: Aloe Energy EAPP grid atlas. Lines © OpenStreetMap contributors (ODbL).

NEAR THE GRID, NOT ON IT

About 17 million people in Kenya, roughly 31% of the population, live where satellites see no electric light at night. Of them, 95% live within 15 km of a mapped or predicted power line: 7.2 million within 2 km, 9.3 million 2 to 15 km away, and 889,000 farther out. The largest group lives 2 to 15 km out: close enough to plan for the grid, too far for a quick connection. That is where mini-grids built to join the grid later can do the most good. Solar home systems are common in Kenya, and they barely show at night from space, so this proxy overstates how many people have no power at all. At its 2016-2023 pace, about 3.7 percentage points a year (World Bank), Kenya would reach the 100% access target in its Mission 300 compact by 2030: on track.



Within 2 km of a line: **7.2 million** (41%)
2 to 15 km: **9.3 million** (54%)
More than 15 km: **889,000** (5%)

"Without night-time light" is a satellite proxy, not a measured access rate.

THE GRID TODAY

Kenya's mapped high-voltage network runs to about 7,477 km of lines at 66 kV and above, with 65 substations. The highest voltage on the map is 500 kV, and 54% of the line length runs at 220 kV or more. About 498 km come from older World Bank (2017) maps, used where OpenStreetMap has gaps. Installed capacity was about 3,869 MW (Dec 2025), and peak demand about 2,439 MW (Dec 2025). The latest international tracking report puts access to electricity at 77% of people.

Mapped line length

Voltage	km
500 kV	612
400 kV	1,213
220 kV	1,932
132 kV	2,712
Voltage not recorded	510
Gap-fill from older public maps	498
Total	**7,477**

PLANTS AND PIPELINE

There are 43 operating power plants of 10 MW and above, adding up to about 3,381 MW. The largest is Lake Turkana wind farm (310 MW, wind). Another 39 plants totaling about 9,588 MW are under construction or planned, 113 MW of them under construction.

Operating capacity by type



Oil: **830 MW** (25%) Hydro: **803 MW** (24%)
Geothermal: **752 MW** (22%) Wind: **632 MW** (19%)
Other: **364 MW** (11%)

Promised and now expected dates

Project	Type	MW	First promised	Now expected
Kenya–Uganda Lessos–Tororo 400 kV (Kenyan section)	Line	–	2014	2027
Kenya PPP: Kibos–Kakamega–Musaga 220 kV	Line	–	construction from Aug 2026	2028
Kenya PPP: Lessos–Loosuk 400 kV	Line	–	construction from Aug 2026	2028

MISSION 300 COMPACT

Kenya's Mission 300 energy compact commits to raising electricity access from 75% to 100% by 2030. New access is planned as 96% grid, 4% mini-grids and 0% standalone solar.

Electricity access



Now: **75%** (2024) Target: **100%** (2030)

Mission 300 energy compact

Commitment	Value
Planned split of new access	grid 96%, mini-grids 4%, standalone solar 0%
Clean cooking target	from 34% to 100% by 2030
Private investment sought	US$5.1 billion
Rules for mini-grids when the grid arrives	Mentioned only
E-waste commitment	Yes

SECOND LIFE

Between 2026 and 2040, about 26,200 tonnes of solar equipment and stationary batteries are expected to retire in Kenya, most of it off-grid solar kits and mini-grids. That is 6.3% of the total for the 18 countries in our second-life atlas.

Solar and batteries retiring each year (tonnes)



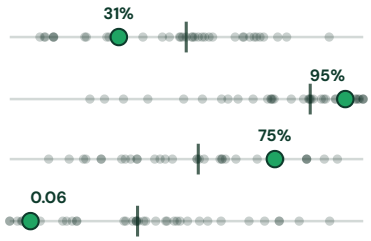
EMISSIONS

In 2024, each megawatt-hour used in Kenya came with about 0.06 tonnes of CO2, including imports. The table also gives the combined margin used for carbon projects.

Grid emission factor, 2024 (tCO2/MWh)

Measure	tCO2/MWh
Generated in country	0.065
Electricity used, with imports	0.059
Combined margin (for carbon projects)	0.039

HOW IT COMPARES



Each dot is one country with a page on aloeenergy.org; the line marks the median. Positions only, no ranking.

Sources: Grid lines: OpenStreetMap contributors (ODbL), gap-fill from the World Bank Africa grid (2017); power plants: Global Energy Monitor (September 2026), WRI and public project sources; capacity and access: regulators, utilities and Tracking SDG7 2026; people and distance to the grid: WorldPop 2020 and gridfinder (CC BY 4.0); second life: Aloe second-life model (central case); emission factor: Aloe grid emission factors (Ember); compact: the national Mission 300 energy compact.

Aloe Energy

The full page, with the interactive atlas, is at aloeenergy.org/countries/kenya. The maps are free to view; the data behind them is available on request: brandon@aloeenergy.org. Aloe Energy is a not-for-profit initiative working at the grid edge in Sub-Saharan Africa.

Scan for the live page and map

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