Aloe Energy

COUNTRY REPORT · NOVEMBER 2026

Equatorial Guinea: grid and electricity access

Central African Power Pool

443k
people live without night-time light, a proxy for no power

100%
of them live within 15 km of a power line

1,208
km of high-voltage lines, 66 kV and above

338
MW of operating power plants, 10 MW and above

2
power plants and transmission lines planned or under construction

About 443,000 people in Equatorial Guinea live where satellites see no electric light at night, and 100% of them live within 15 km of a power line. This page brings together what our open atlases show for Equatorial Guinea: about 1,208 km of high-voltage lines, 338 MW of power plants and the projects still to come.

WHAT THIS MEANS

133,000 people without power live 2 to 15 km from a line: close enough to plan for the grid, too far for a quick connection.



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

NEAR THE GRID, NOT ON IT

About 443,000 people in Equatorial Guinea, roughly 23% of the population, live where satellites see no electric light at night. Of them, 100% live within 15 km of a mapped or predicted power line: 309,000 within 2 km, 133,000 2 to 15 km away, and 0 farther out. The largest group lives within 2 km of a line, so the main gap is last-mile connections and affordability, more than new lines.



Within 2 km of a line: **309,000** (70%)
2 to 15 km: **133,000** (30%)
More than 15 km: **0** (0%)

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

THE GRID TODAY

Equatorial Guinea's mapped high-voltage network runs to about 1,208 km of lines at 66 kV and above, with 15 substations. The highest voltage on the map is 220 kV, and 47% of the line length runs at 220 kV or more. Installed capacity was about 343 MW (GEM Sep 2026). The latest international tracking report puts access to electricity at 65% of people.

Mapped line length

Voltage	km
220 kV	571
110 kV	446
Voltage not recorded	191
Total	**1,208**

PLANTS AND PIPELINE

Four operating power plants of 10 MW and above add up to about 338 MW, 64% of it gas. The largest is Malabo Turbogas power plant (154 MW, gas). Another 1 plant totaling about 200 MW is under construction or planned, 200 MW of them under construction.

Operating capacity by type



Gas: **218 MW** (64%) Hydro: **120 MW** (36%)

Promised and now expected dates

Project	Type	MW	First promised	Now expected
Cameroon - Gabon - Equatorial Guinea interconnection	Line	-	not set	2033

EMISSIONS

In 2024, each megawatt-hour used in Equatorial Guinea came with about 0.37 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	0.371
Electricity used, with imports	0.371
Combined margin (for carbon projects)	0.404

SECOND LIFE

Between 2026 and 2040, about 204 tonnes of solar equipment and stationary batteries are expected to retire in Equatorial Guinea, most of it solar panels. That is 0.0% of the total for the 49 countries in our second-life atlas.

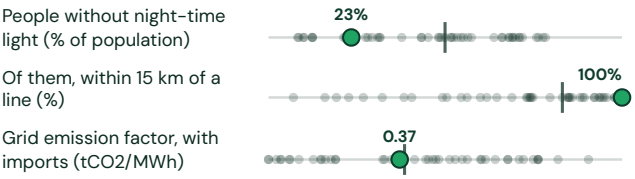
Solar and batteries retiring each year (tonnes)



CLEAN ENERGY CERTIFICATES

I-REC status: not approved yet, so renewable plants here cannot issue I-RECs.

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).

Aloe Energy

The full page, with the interactive atlas, is at aloeenergy.org/countries/equatorial-guinea. 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 on energy access across Africa, with open grid maps and data from Southern and Eastern to West and Central Africa.

Scan for the live page and map

Cite as: Aloe Energy (2026). Equatorial Guinea country report, November 2026. aloeenergy.org/countries/equatorial-guinea. Free to share under CC BY 4.0.

FULL DATA

More about Equatorial Guinea

Everything else our research pages show for this country, from published sources. Each section names the page where the method and sources are.

PRICES AND RELIABILITY

LIT BUT OFF THE MAP

Where the lights are and the map is not

Satellites see 76 lit places in Equatorial Guinea at night. 49 are within 2 km of a mapped line, 16 are 2 to 10 km away and 11 are 10 km or more from any mapped line. Places lit far from the map point to lines the map is missing, mines and plants with their own power, or mini-grids.

The lit places off the map cover about 95 km² and are home to about 42,754 people.

Lit places by distance to a mapped line

Distance	Lit places	Newly lit
Within 2 km of a mapped line	49	
2 to 10 km away	16	10
10 km or more	11	2

See them on the map: the "Lit but off the map" layer of the grid-edge atlas (aloeenergy.org/research/grid-edge).

WATER AND CLIMATE RISK

Hydro and drought

Hydro is 36% of the operating power plants in Equatorial Guinea and made 27% of its electricity in 2024.

A dry year that takes a fifth of hydro output would cost about 10 MW on average over the year, and a severe drought (two fifths, as Zambia saw in 2024) about 20 MW.

Our data has no import line with a published capacity, so a shortfall would have to be met at home.

Hydro exposure

Measure	Value
Hydro in operating capacity	36%
Operating hydro (MW)	123
Hydro in 2024 generation	27%
Dry year, average MW lost	10
Severe drought, average MW lost	20

Method and all countries: hydro dependence and drought exposure (aloeenergy.org/research/hydro-exposure).

CLIMATE AND CARBON

FROM POWER PLANT TO BATTERY SITE

When the thermal plants close

Equatorial Guinea has 1 coal, gas or oil plant site of 50 MW or more, with 154 MW of grid connection. None of it frees up before 2030 in our central case.

Putting solar and batteries on those connections when they free up would save about 0.3 Mt of CO2 between 2026 and 2050, worth about 0.8 times what they cost to build at the US EPA's social cost of carbon.

Largest sites

Plant	Fuel	Connection (MW)	Frees up	CO2 saved 2026-2050 (Mt)
Malabo Turbogas power plant	Gas	154	2039	0.3

Timings, cases and every site: power plant to battery site (aloeenergy.org/research/thermal-to-storage).

WASTE TO WEALTH

Power from waste

Equatorial Guinea's sugar mills, landfills, sewage works, factories and crop residues could make about 4 MW of power that is not built yet (central case), avoiding about 9,145 t of CO2e a year.

Power from waste by source (MW, central case)

Source	MW
Landfill gas and biogas	0.4
Crop and sawmill residues	3.1

Every site, costs and the method: power from waste (aloeenergy.org/research/waste-to-energy).

SECOND LIFE

Who could use a second-life panel

Places in Equatorial Guinea that could use a second-life solar panel add up to about 157 MWp (range 70 to 356): 153 MWp to cut generator use in towns, 3 MWp for mini-grids, 1 MWp for household systems and 0.1 MWp for 15 health facilities and 0 schools with no light at night.

Mapped by half-degree cell, with years to 2040: where the panels are needed (aloeenergy.org/research/second-life#where-demand).

E-MOBILITY

Electric transport, per km

On Equatorial Guinea's grid, an electric motorbike emits about 26 g of CO2 per km from the power it charges with, against 48 g for a petrol one (46% less).

CO2 per km from use (g)

Vehicle	Electric	Petrol or diesel	Difference
Motorbike	26	48	-46%
Bus	480	1,673	-71%
Small car (newer petrol car)	77	125	-38%

Life-cycle figures, a cost calculator and city air: e-mobility (aloeenergy.org/e-mobility#per-km).

Sources: Lit places: NASA Black Marble night lights, compared with our mapped lines (grid-edge atlas). Hydro and drought: our hydro exposure analysis (plants from our grid atlases; generation from Ember, corrected with regulator figures). Thermal plant sites: Global Energy Monitor, Global Integrated Power Tracker (September 2026), and our thermal-to-storage model. Power from waste: FAOSTAT, Global Energy Monitor and OpenStreetMap sites, in our waste-to-energy model. Second-life demand: grid-edge screening, compact targets, World Bank Enterprise Surveys and health and school facility lists, in our second-life atlas. Transport per km: our grid emission factors and vehicle energy use; running costs from national pump prices and tariffs.