Aloe Energy

COUNTRY BRIEF · NOVEMBER 2026

Ethiopia: grid and electricity access

Eastern Africa Power Pool

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

93%
of them live within 15 km of a power line

19,325
km of high-voltage lines, 66 kV and above

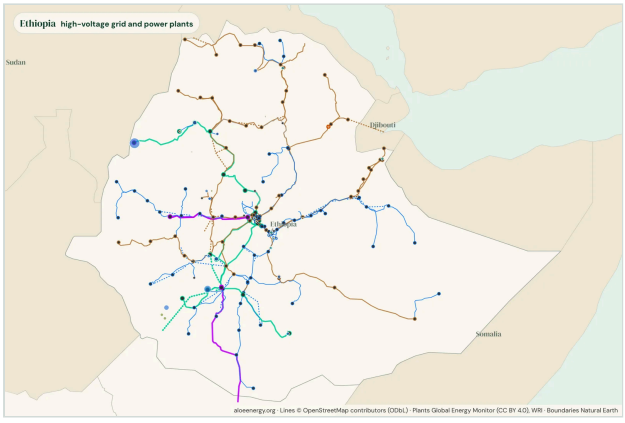
10,855
MW of operating power plants, 10 MW and above

33
power plants and transmission lines planned or under construction

About 93 million people in Ethiopia live where satellites see no electric light at night, and 93% of them live within 15 km of a power line. This page brings together what our open atlases show for Ethiopia: about 19,325 km of high-voltage lines, 10,855 MW of power plants and the projects still to come.

WHAT THIS MEANS

To reach 75% electricity access by 2030, Ethiopia needs to add about 6 percentage points a year from 2025: from 44% today.



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

NEAR THE GRID, NOT ON IT

About 93 million people in Ethiopia, roughly 71% of the population, live where satellites see no electric light at night. Of them, 93% live within 15 km of a mapped or predicted power line: 30 million within 2 km, 58 million 2 to 15 km away, and 6.1 million 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. At its 2016-2023 pace, about 2.0 percentage points a year (World Bank), Ethiopia would reach the 75% access target in its Mission 300 compact around 2033, not 2030; the target needs about 2.8 points a year.



Within 2 km of a line: **30 million** (32%)
2 to 15 km: **58 million** (62%)
More than 15 km: **6.1 million** (7%)

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

THE GRID TODAY

Ethiopia's mapped high-voltage network runs to about 19,325 km of lines at 66 kV and above, with 184 substations. The highest voltage on the map is 500 kV, and 61% of the line length runs at 220 kV or more. About 2,266 km come from older World Bank (2017) maps, used where OpenStreetMap has gaps. Installed capacity was about 9,752 MW (May 2026). The latest international tracking report puts access to electricity at 57% of people.

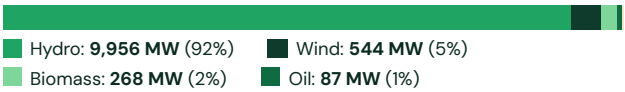
Mapped line length

Voltage	km
500 kV	1,696
400 kV	2,070
220 kV	6,694
132 kV	5,402
66 kV	592
Voltage not recorded	603
Gap-fill from older public maps	2,266
Total	**19,325**

PLANTS AND PIPELINE

There are 28 operating power plants of 10 MW and above, adding up to about 10,855 MW, 92% of it hydro. The largest is Grand Ethiopian Renaissance Dam (GERD) (5,150 MW, hydro). Another 29 plants totaling about 11,826 MW are under construction or planned, 1,920 MW of them under construction.

Operating capacity by type



Promised and now expected dates

Project	Type	MW	First promised	Now expected
Koysha	Hydro	1,800	2023	2028
Ethiopia-Djibouti second line 230 kV (Semera-Galafi-Nagad)	Line	-	2024	2026
Ethiopia-Somaliland interconnector (Jigjiga-Hargeisa-Berbera)	Line	-	not set	2030
Ethiopia-South Sudan 230 kV (Gambella-Malakal)	Line	-	not set	2030

MISSION 300 COMPACT

Ethiopia's Mission 300 energy compact commits to raising electricity access from 44% to 75% by 2030.

Electricity access



Mission 300 energy compact

Commitment	Value
Clean cooking target	from 8% to 58% by 2030
Private investment sought	US$3.06 billion
Rules for mini-grids when the grid arrives	Mentioned only
E-waste commitment	No

SECOND LIFE

Between 2026 and 2040, about 1,400 tonnes of solar equipment and stationary batteries are expected to retire in Ethiopia, most of it off-grid solar kits and mini-grids. That is 0.3% of the total for the 18 countries in our second-life atlas.

Solar and batteries retiring each year (tonnes)



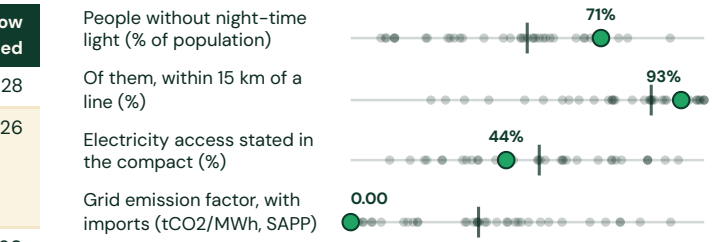
EMISSIONS

In 2024, each megawatt-hour used in Ethiopia came with close to zero 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	0.000
Electricity used, with imports	0.000
Combined margin (for carbon projects)	0.000

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/ethiopia. 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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