Aloe Energy

COUNTRY REPORT · NOVEMBER 2026

Somalia: grid and electricity access

Eastern Africa Power Pool

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

7%
of them live within 15 km of a power line

6
km of high-voltage lines, 66 kV and above

125
MW of operating power plants, 10 MW and above

5
power plants and transmission lines planned or under construction

About 8.2 million people in Somalia live where satellites see no electric light at night, and 7% of them live within 15 km of a power line. This page brings together what our open atlases show for Somalia: about 6 km of high-voltage lines, 125 MW of power plants and the projects still to come.

WHAT THIS MEANS

425,000 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 EAPP grid atlas. Lines © OpenStreetMap contributors (ODbL).

NEAR THE GRID, NOT ON IT

About 8.2 million people in Somalia, roughly 43% of the population, live where satellites see no electric light at night. Of them, 7% live within 15 km of a mapped or predicted power line: 154,000 within 2 km, 425,000 2 to 15 km away, and 7.7 million farther out. The largest group lives more than 15 km from any line, where standalone solar and mini-grids are the realistic first step for years to come.



Within 2 km of a line: **154,000** (2%)
2 to 15 km: **425,000** (5%)
More than 15 km: **7.7 million** (93%)

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

THE GRID TODAY

Somalia's mapped high-voltage network runs to about 6 km of lines at 66 kV and above. Installed capacity was about 110 MW (2024). The latest international tracking report puts access to electricity at 54% of people.

Mapped line length

Voltage	km
Voltage not recorded	6
Total	**6**

PLANTS AND PIPELINE

Two operating power plants of 10 MW and above add up to about 125 MW, 100% of it oil. The largest is UN power station (65 MW, oil). Another 4 plants totaling about 132 MW are under construction or planned.

Operating capacity by type

Oil: **125 MW** (100%)

Promised and now expected dates

Project	Type	MW	First promised	Now expected
Ethiopia–Somaliland interconnector (Jigjiga–Hargeisa–Berbera)	Line	–	not set	2030

EMISSIONS

In 2024, each megawatt-hour used in Somalia came with about 0.60 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	0.603
Electricity used, with imports	0.603
Combined margin (for carbon projects)	0.381

SECOND LIFE

Between 2026 and 2040, about 1,900 tonnes of solar equipment and stationary batteries are expected to retire in Somalia, most of it off-grid solar kits and mini-grids. That is 0.4% of the total for the 49 countries in our second-life atlas.

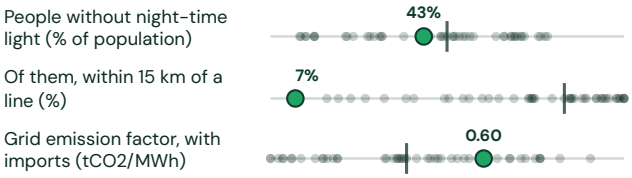
Solar and batteries retiring each year (tonnes)



CLEAN ENERGY CERTIFICATES

I-REC status: issuing. 2 registered plants, 0.7 MW. Issued so far: 967 MWh, of which – in 2026.

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/somalia. 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). Somalia country report, November 2026. aloeenergy.org/countries/somalia. Free to share under CC BY 4.0.

FULL DATA

More about Somalia

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 158 lit places in Somalia at night. 3 are within 2 km of a mapped line, 7 are 2 to 10 km away and 148 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 1,274 km² and are home to about 5,997,365 people.

Lit places by distance to a mapped line

Distance	Lit places	Newly lit
Within 2 km of a mapped line	3	
2 to 10 km away	7	6
10 km or more	148	117

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

CLIMATE AND CARBON

Carbon per new connection

The Mission 300 compact for Somalia adds about 172,800 new connections by 2030: 107,800 to the grid, 25,100 on mini-grids and 39,900 with solar home systems.

Counted with what household surveys show people use for light now (kerosene is the main light in 5% of homes without power), they avoid about 3,449 t of CO2 a year and add about 23,436 t from the power they use, a net addition of 19,987 t a year.

New connections and CO2, central case

Measure	Value
New connections by 2030	172,810
CO2 avoided (t a year)	3,449
CO2 added (t a year)	23,436
Net CO2 avoided (t a year)	-19,987
Net per 1,000 connections (t a year)	-115.7

The default methodology view and every source: carbon per connection (aloeenergy.org/research/carbon-per-connection).

FROM POWER PLANT TO BATTERY SITE

When the thermal plants close

Somalia has 1 coal, gas or oil plant site of 50 MW or more, with 65 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 0.8 Mt of CO2 between 2026 and 2050, worth about 3.7 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)
UN power station	Oil	65	2035	0.8

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

WASTE TO WEALTH

Power from waste

Somalia's sugar mills, landfills, sewage works, factories and crop residues could make about 1 MW of power that is not built yet (central case), avoiding about 12,743 t of CO2e a year.

Power from waste by source (MW, central case)

Source	MW
City waste	0.5
Crop and sawmill residues	0.7

Largest sites

Site	What	MW
Mogadishu	Food and garden waste biogas	0.5

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 Somalia that could use a second-life solar panel add up to about 1,337 MWp (range 597 to 3,016): 1,271 MWp to cut generator use in towns, 41 MWp for mini-grids, 20 MWp for household systems and 3.9 MWp for 538 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 Somalia's grid, an electric motorbike emits about 42 g of CO2 per km from the power it charges with, against 48 g for a petrol one (13% less).

CO2 per km from use (g)

Vehicle	Electric	Petrol or diesel	Difference
Motorbike	42	48	-13%
Bus	780	1,673	-53%
Small car (newer petrol car)	125	125	0%

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). Carbon per connection: compact targets, household lighting surveys (census, MICS, DHS, MTF) and our grid emission factors. 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.