Aloe Energy

COUNTRY BRIEF · NOVEMBER 2026

Lesotho: grid and electricity access

Southern African Power Pool

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

88%
of them live within 15 km of a power line

636
km of high-voltage lines, 66 kV and above

102
MW of operating power plants, 10 MW and above

5
power plants and transmission lines planned or under construction

About 1.1 million people in Lesotho live where satellites see no electric light at night, and 88% of them live within 15 km of a power line. This page brings together what our open atlases show for Lesotho: about 636 km of high-voltage lines, 102 MW of power plants and the projects still to come.

WHAT THIS MEANS

To reach 100% electricity access by 2030, Lesotho needs to add about 8 percentage points a year from 2024: from 53% today.



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

NEAR THE GRID, NOT ON IT

About 1.1 million people in Lesotho, roughly 48% of the population, live where satellites see no electric light at night. Of them, 88% live within 15 km of a mapped or predicted power line: 360,000 within 2 km, 628,000 2 to 15 km away, and 133,000 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. At its 2016-2023 pace, about 3.0 percentage points a year (World Bank), Lesotho would reach the 100% access target in its Mission 300 compact around 2037, not 2030; the target needs about 6.1 points a year.



Within 2 km of a line: **360,000** (32%)
2 to 15 km: **628,000** (56%)
More than 15 km: **133,000** (12%)

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

THE GRID TODAY

Lesotho's mapped high-voltage network runs to about 636 km of lines at 66 kV and above, with 24 substations. The highest voltage on the map is 132 kV. In August 2026, SAPP reported a peak demand of 206 MW against 76 MW available.

Mapped line length

Voltage	km
132 kV	503
88 kV	60
66 kV	59
Voltage not recorded	5
Gap-fill from older public maps	10
Total	**636**

PLANTS AND PIPELINE

Two operating power plants of 10 MW and above add up to about 102 MW, 71% of it hydro. The largest is 'Muela (72 MW, hydro). Another 5 plants totaling about 340 MW are under construction or planned.

Operating capacity by type



Hydro: **72 MW** (71%) Solar: **30 MW** (29%)

MISSION 300 COMPACT

Lesotho's Mission 300 energy compact commits to raising electricity access from 53% to 100% by 2030. New access is planned as 58% grid, 2% mini-grids and 40% standalone solar.

Electricity access



Now: **53%** (2024) Target: **100%** (2030)

Mission 300 energy compact

Commitment	Value
Planned split of new access	grid 58%, mini-grids 2%, standalone solar 40%
Clean cooking target	from 45% to 75% by 2030
Private investment sought	US$1.47 billion
Rules for mini-grids when the grid arrives	Mentioned only
E-waste commitment	No

SECOND LIFE

Between 2026 and 2040, about 510 tonnes of solar equipment and stationary batteries are expected to retire in Lesotho, most of it solar panels. That is 0.1% 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 Lesotho came with about 0.36 tonnes of CO2, including imports. The table also gives the combined margin used for carbon projects.

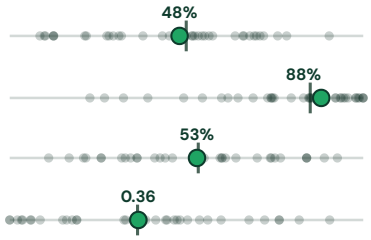
Grid emission factor, 2024 (tCO2/MWh)

Measure	tCO2/MWh
Generated in country	0.000
Electricity used, with imports	0.364
Combined margin (for carbon projects)	0.000

CLEAN ENERGY CERTIFICATES

I-REC status: approved, but no plants registered yet.

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; supply and demand: SAPP monthly report; 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 (World Bank PID P513939); compact: the national Mission 300 energy compact.

Aloe Energy

The full page, with the interactive atlas, is at aloeenergy.org/countries/lesotho. 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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