Aloe Energy

COUNTRY BRIEF · NOVEMBER 2026

DR Congo: grid and electricity access

Southern African Power Pool · Eastern Africa Power Pool

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

60%
of them live within 15 km of a power line

9,846
km of high-voltage lines, 66 kV and above

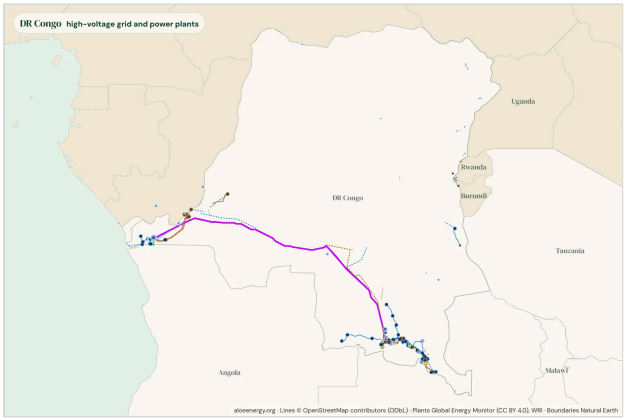
3,884
MW of operating power plants, 10 MW and above

29
power plants and transmission lines planned or under construction

DR Congo has one of the largest populations without power in Africa: about 83 million people live where satellites see no electric light at night. Its grid is not one network but several: one in the west fed by the Inga dams, one in the south and smaller systems in the east fed from Ruzizi. Only 60% of people without light live within 15 km of a line, less than in most of its eastern and southern neighbors, so mini-grids and standalone solar will carry much of the load for years.

WHAT THIS MEANS

To reach 62% electricity access by 2030, DR Congo needs to add about 7 percentage points a year from 2024: from 22% today.



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

NEAR THE GRID, NOT ON IT

About 83 million people in DR Congo, roughly 76% of the population, live where satellites see no electric light at night. Of them, 60% live within 15 km of a mapped or predicted power line: 25 million within 2 km, 24 million 2 to 15 km away, and 33 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. At its 2016-2023 pace, about 0.7 percentage points a year (World Bank), DR Congo would reach the 62% access target in its Mission 300 compact after 2050, not 2030; the target needs about 5.7 points a year.



Within 2 km of a line: **25 million** (30%)
2 to 15 km: **24 million** (30%)
More than 15 km: **33 million** (40%)

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

THE GRID TODAY

DR Congo's mapped high-voltage network runs to about 9,846 km of lines at 66 kV and above, with 142 substations. The highest voltage on the map is 500 kV, and 68% of the line length runs at 220 kV or more. About 1,912 km come from older World Bank (2017) maps, used where OpenStreetMap has gaps. In August 2026, SAPP reported a peak demand of 2,379 MW against 1,650 MW available, with 100 MW of load shed. The latest international tracking report puts access to electricity at 22% of people.

Mapped line length

Voltage	km
500 kV	3,403
400 kV	3
220 kV	1,981
132 kV	1,836
110 kV	66
66 kV	299
Voltage not recorded	345
Gap-fill from older public maps	1,912
Total	**9,846**

PLANTS AND PIPELINE

There are 47 operating power plants of 10 MW and above, adding up to about 3,884 MW, 84% of it hydro. The largest is Inga II hydroelectric plant (1,424 MW, hydro). Another 22 plants totaling about 3,999 MW are under construction or planned, 398 MW of them under construction.

Operating capacity by type



Hydro: **3,260 MW** (84%) Solar: **344 MW** (9%)
Oil: **155 MW** (4%) Storage: **85 MW** (2%)
Other: **40 MW** (1%)

Promised and now expected dates

Project	Type	MW	First promised	Now expected
Rwanda–DR Congo 220 kV (Goma–Gisenyi, Goma–Bukavu)	Line	–	2025	2027
Burundi–DR Congo 220 kV (Kamanyola–Bujumbura)	Line	–	not set	2028
Ruzizi III 220 kV evacuation	Line	–	construction from Dec 2025	2030
Uganda–DR Congo 220 kV (Nkenda–Beni–Bunia)	Line	–	2025	2030

MISSION 300 COMPACT

DR Congo's Mission 300 energy compact commits to raising electricity access from 22% to 62% by 2030. New access is planned as 44% grid, 56% mini-grids and 0% standalone solar.

Electricity access



Now: **22%** (2024) Target: **62%** (2030)

Mission 300 energy compact

Commitment	Value
Planned split of new access	grid 44%, mini-grids 56%, standalone solar 0%
Clean cooking target	from 1% to 30% by 2030
Private investment sought	US$20 billion
Rules for mini-grids when the grid arrives	Yes
E-waste commitment	No

SECOND LIFE

Between 2026 and 2040, about 10,400 tonnes of solar equipment and stationary batteries are expected to retire in DR Congo, most of it off-grid solar kits and mini-grids. That is 2.5% 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 DR Congo came with about 0.06 tonnes of CO2, including imports. The table also gives the combined margin used for carbon projects.

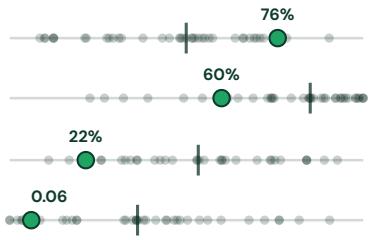
Grid emission factor, 2024 (tCO2/MWh)

Measure	tCO2/MWh
Generated in country	0.000
Electricity used, with imports	0.061
Combined margin (for carbon projects)	0.004

CLEAN ENERGY CERTIFICATES

I-REC status: issuing. 4 registered plants, 3 MW (solar 2, hydro 1). Issued so far: 11 GWh, of which 315 MWh 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; supply and demand: SAPP monthly report; 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/dr-congo. 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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