Aloe Energy

REGIONAL REPORT · NOVEMBER 2026

Eastern Africa Power Pool (EAPP)

Every country side by side, from public data

11	313 M	78%	28,998	7
countries in our data	people live without night-time light, a proxy for no power	of them live within 15 km of a power line	MW of operating power plants, 10 MW and above	countries with a Mission 300 compact in our data

The Eastern Africa Power Pool (EAPP) side by side: power plants and lines, the generation mix, Mission 300 compacts, prices, carbon, access, drought risk, storage and waste for each country, with a pool total. About 527 million people live in the 11 countries in our data; our atlases map about 28,998 MW of operating plants and 68,051 MW more planned or under construction.

Formed in 2005, it has thirteen member countries. Our data covers eleven of them; Egypt and Libya are not in it yet. Eritrea is not a member but is on our EAPP atlas, so it is shown for reference.

GRID AND GENERATION

GRID AND GENERATION

Power plants, lines and the generation mix

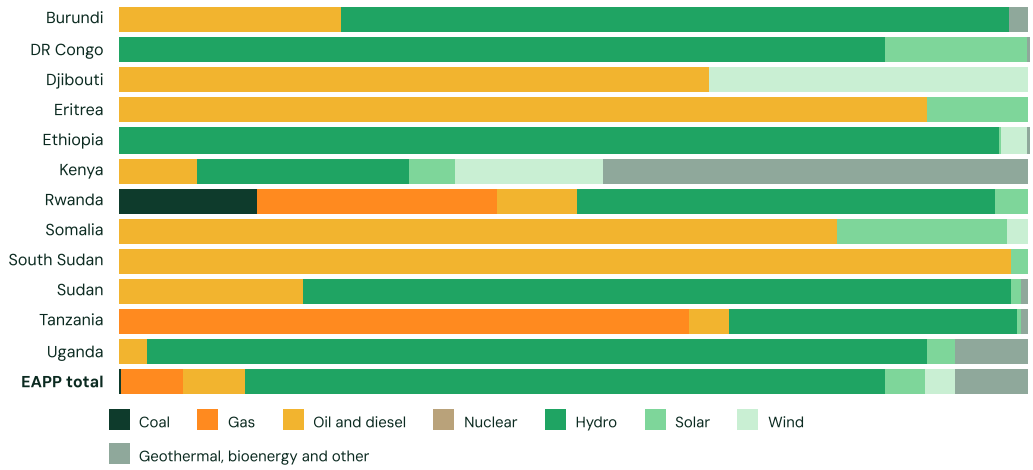
Across the 11 EAPP countries in our data, our atlases map about 28,998 MW of operating power plants of 10 MW and above (hydro 72%, oil and diesel 11%, wind 4%), about 3,071 MW under construction and about 64,980 MW more planned. Hydro is the largest source in 7 of the 11 countries.

The mapped high-voltage network runs to about 58,508 km of lines.

Power plants and lines by country

Country	Operating (MW)	Largest source	Under construction (MW)	Planned (MW)	Lines (km)	Top voltage	Substations
Burundi	224	Hydro (51%)	0	0	480	220 kV	9
DR Congo	3,884	Hydro (84%)	398	3,601	9,846	500 kV	142
Djibouti	327	Solar (49%)	0	10,240	276	220 kV	6
Eritrea (not a member)	268	Oil and diesel (100%)	0	42	324	132 kV	3
Ethiopia	10,855	Hydro (92%)	1,920	9,906	19,130	500 kV	184
Kenya	3,381	Oil and diesel (25%)	113	9,476	7,477	500 kV	65
Rwanda	429	Hydro (56%)	44	605	1,296	220 kV	28
Somalia	125	Oil and diesel (100%)	0	132	6	-	0
South Sudan	164	Oil and diesel (72%)	0	1,080	227	220 kV	1
Sudan	3,760	Hydro (50%)	170	1,200	7,162	500 kV	65
Tanzania	3,870	Hydro (75%)	402	8,148	9,206	400 kV	64
Uganda	1,980	Hydro (80%)	24	20,593	3,401	400 kV	22
EAPP total	**28,998**	**Hydro (72%)**	**3,071**	**64,980**	**58,508**		**586**

Generation mix by country



Electricity generation by source, 2024

Country	Generation (TWh)	Coal	Gas	Oil and diesel	Nuclear	Hydro	Solar	Wind	Geothermal, bioenergy and other
Burundi	0.5	–	–	24%	–	73%	–	–	2%
DR Congo	15.9	–	–	–	–	84%	16%	–	–
Djibouti	0.2	–	–	65%	–	–	–	35%	–
Eritrea (not a member)	0.5	–	–	89%	–	–	11%	–	–
Ethiopia	25.2	–	–	–	–	97%	–	3%	–
Kenya	13.3	–	–	9%	–	23%	5%	16%	47%
Rwanda	1.1	15%	27%	9%	–	46%	4%	–	–
Somalia	0.4	–	–	79%	–	–	19%	2%	–
South Sudan	0.6	–	–	98%	–	–	2%	–	–
Sudan	14.8	–	–	20%	–	78%	1%	–	1%
Tanzania	8.8	–	63%	4%	–	32%	–	–	1%
Uganda	5.8	–	–	3%	–	86%	3%	–	8%
EAPP total	**86.6**	**–**	**7%**	**7%**	**–**	**71%**	**4%**	**3%**	**8%**

Capacity and peak demand, latest published

Country	Capacity (MW)	Peak demand (MW)	As of
Burundi	166	–	2025
DR Congo	1,650	2,379	August 2026
Djibouti	200	–	2024
Eritrea (not a member)	230	–	2024
Ethiopia	9,752	–	May 2026
Kenya	3,869	2,439	Dec 2025
Rwanda	467	234	Q2 2024
Somalia	110	–	2024
South Sudan	230	–	2024
Sudan	4,020	–	2024
Tanzania	3,092	1,944	2025
Uganda	2,048	1,351	2025

Cross-border line projects we track: 5 completed, 5 under construction, 11 in preparation

Countries	Voltage	Status	Year
Ethiopia-Kenya	500 kV	Completed	2022
Uganda-Rwanda	220 kV	Completed	2023
Kenya-Tanzania	400 kV	Completed	2024
Rwanda-Burundi-Tanzania	220 kV	Completed	2024
Republic of the Congo-DR Congo	220 kV	Completed	–
Ethiopia-Djibouti	230 kV	Under construction	2026 (expected)
Kenya-Uganda	400 kV	Under construction	2027 (expected)

Countries	Voltage	Status	Year
Rwanda–Burundi	220 kV	Under construction	2027 (expected)
Rwanda–DR Congo	220 kV	Under construction	2027 (expected)
Burundi–DR Congo	220 kV	Under construction	2028 (expected)
Uganda–South Sudan	400 kV	In preparation	2028 (expected)
Uganda–Tanzania	400 kV	In preparation	2029 (expected)
DR Congo–Rwanda–Burundi	220 kV	In preparation	2030 (expected)
Ethiopia–Somalia	400 kV	In preparation	2030 (expected)
Ethiopia–South Sudan	230 kV	In preparation	2030 (expected)
Uganda–DR Congo	220 kV	In preparation	2030 (expected)
Ethiopia–Sudan	500 kV	In preparation	2032 (expected)
Angola–DR Congo	–	In preparation	–
DR Congo–Angola	–	In preparation	–
Mozambique–Tanzania	–	In preparation	–
Zambia–DR Congo	330 kV	In preparation	–

Capacity is what the country or EAPP reports (available capacity in the SAPP monthly report, installed capacity elsewhere); it is not the same as our mapped plants. GEM marks the plant total from Global Energy Monitor where no national figure is published. The project table lists lines in our project tracker; older interconnectors are on the atlas and the interconnector limits (aloeenergy.org/research/interconnector-limits) page. Every plant and line: the EAPP grid atlas (aloeenergy.org/research/eapp-grid).

MISSION 300 COMPACTS

MISSION 300 COMPACTS COMPARED

What the compacts say, side by side

7 of the 11 EAPP countries in our data have published a Mission 300 national energy compact. Together they seek about US$44.2 billion of private investment by 2030. 2 set out how to handle e-waste from solar kits and batteries, and 3 say what happens to mini-grids when the main grid arrives.

No compact in our data: Djibouti, Somalia, South Sudan, Sudan.

Set the split beside the access section below, which shows where the people without power live by distance to a mapped line: a compact that relies on the grid fits a country where most of them live within 2 km.

Access targets and how they are split

Country	Access now	Target	Grid	Mini-grid	Standalone	What the split measures
Burundi	25.9% in 2025	70% by 2030	60%	13%	27%	Share of new connections
DR Congo	21.5% in 2024	62% by 2030	44%	56%	0%	Share of new connections
Ethiopia	44% in 2025	75% by 2030	–	–	–	Not split
Kenya	75% in 2024	100% by 2030	96%	4%	0%	Share of new connections
Rwanda	84% in 2025	100% by 2030	–	–	–	Not split
Tanzania	46% in 2022	75% by 2030	–	–	–	Not split
Uganda	60% in 2025	85% by 2030	–	–	–	Not split

What each compact commits to

Country	Productive use	E-waste	Least-cost or GIS plan	Mini-grid rules when the grid arrives	Cost-reflective tariff	Private investment sought (US$ billion)
Burundi	Mentioned	Yes	Exists	Yes	Committed	1.5
DR Congo	Mentioned	No	Exists	Yes	Committed	20
Ethiopia	Yes	No	Exists	Mentioned	Committed	3.1
Kenya	Yes	Yes	Exists	Mentioned	Committed	5.1
Rwanda	Yes	No	Exists	Mentioned	Committed	1.0
Tanzania	Mentioned	No	Exists	Mentioned	Committed	4.0
Uganda	Mentioned	No	Exists	Yes	Committed	9.4

Read from each compact document, with page numbers and quotes for every value: Mission 300 compacts compared (aloeenergy.org/research/m300-compacts). "Not stated" means the compact does not say.

PRICES

What power costs across the pool

Household tariffs are the energy charge at the central bank exchange rate; check on the tariffs page what each includes. Our power price data holds 17 deals in EAPP countries, from auctions, signed power purchase agreements and published bids.

Household tariffs and load shedding

Country	Utility	Household (US$/kWh)	Lifeline or first block (US$/kWh)	Load shedding
Burundi	REGIDESO	0.046	0.023	Cuts reported
DR Congo	SNEL	0.089	0.039	Cuts reported
Djibouti	–	–	–	None reported
Eritrea (not a member)	–	–	–	None reported
Ethiopia	–	–	–	No data
Kenya	Kenya Power	0.127	0.093	None reported
Rwanda	REG (EUCL)	0.210	0.060	None reported
Somalia	BECO (Mogadishu)	0.460	–	None reported
South Sudan	Juba Electricity Distribution Company (JEDCO)	0.273	–	None reported
Sudan	–	–	–	Cuts reported
Tanzania	TANESCO	0.111	0.038	None reported
Uganda	UEDCL	0.179	0.058	Cuts reported

Power deals signed or bid in the pool, US$/MWh as signed

Source	Deals	Median	Lowest	Highest
Hydro	5	50	13	84
Geothermal	3	88	64	134
Imports across a border	3	65	65	155
Gas	2	109	98	120
Coal	1	75	–	–
Diesel and fuel oil	1	230	–	–
Solar PV	1	25	–	–
Wind	1	105	–	–

Every tariff and status with its source: utilities, tariffs and load shedding (aloeenergy.org/research/utilities-and-tariffs). Every deal with its source: power prices and deals (aloeenergy.org/research/power-prices). Load shedding is grouped from the status we last read for each country.

CARBON

Grid carbon and carbon markets

6 of the 11 EAPP countries in our data issue I-REC renewable energy certificates, about 1.4 TWh to date. The grid factor is the average CO2 per MWh of electricity used; a low factor means grid power, electric transport and new grid connections add little CO2.

Grid carbon, certificates and carbon markets

Country	Grid factor (tCO2/MWh)	Year	I-REC certificates	Issued to date (GWh)	Article 6 deals and activities	Net CO2 avoided by new connections (t a year)
Burundi	0.161	2024	Approved, none issued	–	0	-19,931
DR Congo	0.061	2024	Issuing	11	0	174,106
Djibouti	0.127	2024	Not approved	–	0	-6,383
Eritrea (not a member)	0.677	2024	Not approved	–	0	-43,443
Ethiopia	0.000	2024	Issuing	1	2	164,111
Kenya	0.059	2024	Issuing	676	12	176,684
Rwanda	0.323	2024	Not approved	–	17	-47,883
Somalia	0.603	2024	Issuing	1	0	-19,987
South Sudan	0.749	2024	Issuing	2	0	–
Sudan	0.147	2024	Not approved	–	0	-49,693

Country	Grid factor (tCO2/MWh)	Year	I-REC certificates	Issued to date (GWh)	Article 6 deals and activities	Net CO2 avoided by new connections (t a year)
Tanzania	0.358	2024	Not approved	-	4	-441,814
Uganda	0.022	2024	Issuing	747	0	138,101

Methods: grid emission factors (aloeenergy.org/research/grid-emission-factors), clean energy certificates (aloeenergy.org/research/clean-energy-certificates) and carbon per connection (aloeenergy.org/research/carbon-per-connection) (central case, new connections to 2030 under each compact or national target). A negative value means the new connections add CO2 on net, because the grid power they use emits more than the kerosene and diesel they replace.

ACCESS, RISK, STORAGE AND WASTE

ACCESS

Who lives near the grid but not on it

About 313 million people in the EAPP countries in our data live where satellites see no electric light at night, out of about 527 million. 78% of them live within 15 km of a mapped power line, and 29% within 2 km, close enough for a grid connection to be the obvious first step.

Satellites also see 4,105 lit places 2 km or more from any mapped line: missing lines, mines and plants with their own power, or mini-grids.

People without power and how far they live from the grid

Country	People (million)	Without night light (million)	Within 2 km of a line	2 to 15 km	Beyond 15 km	Median distance (km)	Lit places off the map
Burundi	14	10	33%	66%	1%	3.5	45
DR Congo	109	83	30%	30%	40%	7.7	160
Djibouti	1.2	0.1	47%	38%	14%	2.3	15
Eritrea (not a member)	3.5	2.7	33%	40%	27%	5.5	26
Ethiopia	132	93	32%	62%	7%	3.9	472
Kenya	56	17	41%	54%	5%	2.4	90
Rwanda	14	7.3	35%	64%	0%	2.8	113
Somalia	19	8.2	2%	5%	93%	496.1	155
South Sudan	12	8.1	5%	11%	84%	81.8	83
Sudan	50	16	15%	35%	50%	14.5	1,195
Tanzania	69	35	26%	59%	15%	4.6	1,756
Uganda	50	34	34%	60%	6%	3.3	21
EAPP total	**527**	**313**	**29%**	**48%**	**22%**		**4,105**

Night-time light is a proxy for no power, not a household survey. Map and method: the grid-edge atlas (aloeenergy.org/research/grid-edge).

RISK, STORAGE AND WASTE

Drought, battery sites, waste and second life

A dry year that takes a fifth of hydro output would cost the EAPP countries about 1,201 MW on average over the year, and a severe drought (two fifths) about 2,404 MW. 29 coal, gas and oil plant sites with about 4,087 MW of grid connection could host batteries as they close. Waste could fuel about 923 MW of power, and about 61,864 t of solar panels, kits and batteries will reach end of life from 2026 to 2040.

Drought risk, storage sites, waste and second life

Country	Hydro in operating plants	Dry year, MW lost	Severe drought, MW lost	Thermal plant sites for batteries (MW)	Power from waste (MW)	Solar and battery waste 2026-2040 (t)	Second-life panel demand (MWp)
Burundi	51%	7	14	-	10	1,214	656
DR Congo	84%	302	605	-	124	10,405	5,416
Djibouti	-	-	-	108	2	3,397	110
Eritrea (not a member)	-	-	-	134	1	831	88
Ethiopia	92%	371	743	-	170	1,479	5,007
Kenya	26%	71	143	714	167	25,712	5,640
Rwanda	55%	12	25	56	12	2,658	578
Somalia	-	-	-	65	1	1,945	1,337

Country	Hydro in operating plants	Dry year, MW lost	Severe drought, MW lost	Thermal plant sites for batteries (MW)	Power from waste (MW)	Solar and battery waste 2026–2040 (t)	Second-life panel demand (MWp)
South Sudan	–	–	–	–	4	1,063	694
Sudan	50%	261	521	2,151	114	712	4,500
Tanzania	68%	66	131	804	177	6,358	3,562
Uganda	81%	111	222	189	142	6,921	2,200
EAPP total		**1,201**	**2,404**	**4,087**	**923**	**61,864**	**29,698**

Methods: hydro and drought (aloeenergy.org/research/hydro-exposure), power plant to battery site (aloeenergy.org/research/thermal-to-storage), power from waste (aloeenergy.org/research/waste-to-energy) and the second-life atlas (aloeenergy.org/research/second-life). Central cases throughout.

SOURCES AND METHOD

- Plants and lines: our grid atlases (Global Energy Monitor, WRI, OpenStreetMap, World Bank and national sources). Generation mix: Ember. Capacity and peak demand: SAPP monthly report and national regulators and utilities.
- Compacts: the published Mission 300 national energy compacts and World Bank compact progress reports. Distances: our grid-edge atlas.
- Tariffs and load shedding: utility tariff books, regulators and news reports (Utilities and Tariffs data). Deals: auction results, regulators, utilities and trade press (power prices data).
- Grid factors: Ember and national data, in our grid emission factors. Certificates: the I-REC registry (Evident). Article 6: UNEP-CCC Article 6 pipeline.
- Access: WorldPop population, NASA Black Marble night lights, Google Open Buildings and our mapped lines (grid-edge atlas).
- Hydro: our grid atlases and Ember. Thermal sites: Global Energy Monitor (September 2026). Waste: FAOSTAT, Global Energy Monitor and OpenStreetMap. Second life: IRENA, compact targets and our second-life atlas.

Rows run in alphabetical order. These are side-by-side facts, not scores or rankings. A dash means we hold no data for that country. Pool totals count member countries only.

Aloe Energy

Country detail, maps and the data behind every table: aloeenergy.org/regions/eapp. Aloe Energy is a nonprofit that publishes open energy maps and data for Africa. Free to share under CC BY 4.0.