

Energy Sub-Saharan Africa Programme in Uganda

Africa's **13th largest economy** in 2022 with **6.3% real GDP growth**

Ambitious plan for **universal access to energy**

Abundant **hydro resources**



Uganda's energy mix is characterised by a high supply of bioenergy. Around 90% of the country's energy needs are still met by **solid biomass** which is largely used in the **residential** and **industrial** sectors. Oil is the second largest fuel supplied to the system and is used mostly in **transport**. The **residential** sector has the largest share in final consumption. Uganda relies **mostly on hydro** for **electricity** generation followed by bioenergy. **Electricity** accounts for 2% of total final consumption.

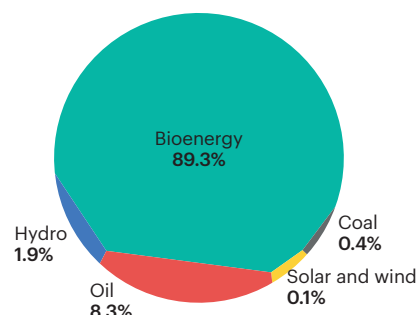
KEY POLICIES

- **Vision 2040** aspires to transform Uganda into a competitive upper-middle-income country within 30 years and is implemented through five-year **National Development Plans (NDP)**. The current plan, **NDP III** (2020/2021-2024/2025), focuses on enhancing value addition in key growth areas such as minerals, oil, and gas.
- The **Revised Energy Policy for Uganda 2023** provides a detailed list of challenges and policy priorities in most energy subsectors, including electricity, renewable energy, energy efficiency, rural electrification, clean cooking and nuclear power.
- The **Uganda Energy Transition Plan (ETP)** (2023), developed in collaboration with the IEA, is a strategic roadmap for the development and modernisation of Uganda's energy sector to 2050. It charts an ambitious yet feasible pathway to universal access to modern energy, power the country's economic transformation sustainably and securely and achieve net zero emissions in the energy sector by 2065. The plan has five key objectives, namely providing universal energy access by 2030, mitigating energy emissions, modernising and growing energy systems, improving energy security and affordability, and establishing Uganda as a regional energy hub.
- Uganda enacted the **Statistics Act No. 2 in 1998**, which mandates the publication of energy data regularly. The National Energy Policy calls for energy-related statistics to be entered into an **Energy Information Management System**, which includes data on energy resources and exploitation opportunities, feasibility studies, and funding.

ENERGY MIX

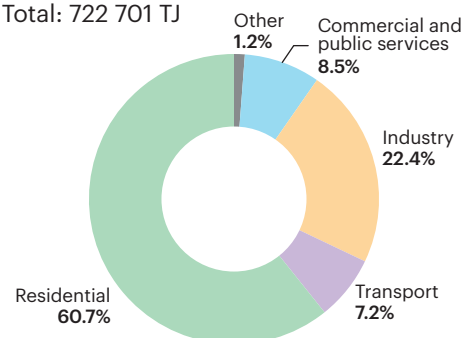
Total energy supply, 2022

Total: 957 882 TJ



Total final consumption, 2022

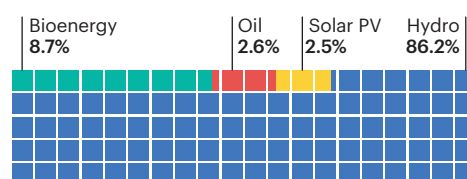
Total: 722 701 TJ



ELECTRICITY MIX

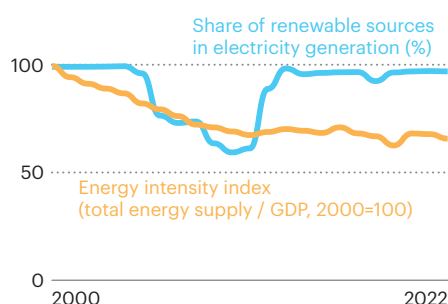
Electricity generation by source, 2022

Total: 5 776 GWh



KEY DATA

Data refer to year 2022 ▲▼ indicate the evolution of the indicator compared to 2021



Population ▲

47.3 million



CO₂ emissions per capita ▼

0.13 tCO₂ per capita



Energy intensity ▼

23 567 MJ per thousand 2015 USD



Gross Domestic Product ▲

40.6 billion USD (2015 prices and ex rates)



Net imports ▲

196.0 PJ



Share of renewables in electricity generation ▼

97.4 %



ACCESS TO CLEAN COOKING AND ELECTRICITY

47 million

people rely on traditional biomass for cooking



<5%

of population has access to clean cooking



31%

of population has access to electricity



Universal energy access remains a challenge in Uganda, with the country in the bottom third of countries in sub-Saharan Africa for electricity and clean cooking access. Current policies see off-grid and mini-grid solutions driving near term improvements, while the longer-term priority is grid expansion, with support from programmes like the World Bank Energy Access Scale-up Project.

With 95% of households relying on wood or charcoal for cooking, the government aims to provide universal access to cleaner stoves by 2030, largely driven by LPG and improved biomass cookstoves, with a longer-term focus on electric solutions. In 2024, the country endorsed the Clean Cooking Declaration to make 2024 a pivotal year for clean cooking.

Electricity access breakdown

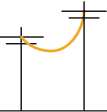
79%

of the population in urban areas has access to electricity



14%

of the population in rural areas has access to electricity



33 million

people are without access to electricity



TRACKING SECURE ENERGY TRANSITION

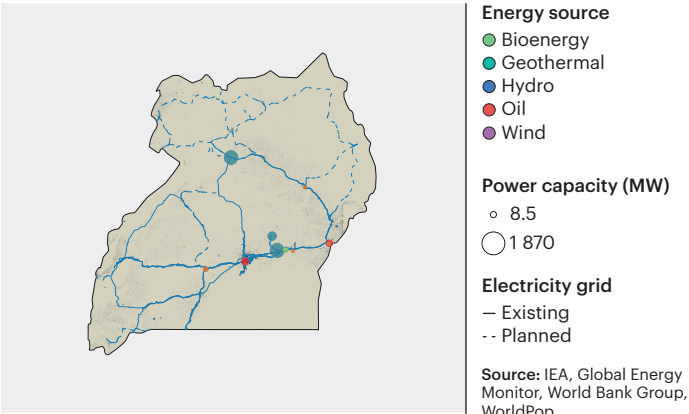
- Uganda relies heavily on hydropower, which is vulnerable to climate impacts and poses a risk to energy security. Interconnections through the Eastern Africa Power Pool help to offset these risks, but some connections only enable exports. There are plans to develop further interconnections with neighbouring countries.
- As a landlocked country, Uganda faces an energy security challenge of importing oil via third countries, with about 80% coming through Kenya and the rest from the United Republic of Tanzania. The country is aiming to develop its oil industry as a way to diversify energy supplies, improve energy security, build technical competencies, and provide revenue for economic and social development.
- Uganda is scheduled to begin commercial oil production in 2025 from the Tilenga and Kingfisher oil fields, and a pipeline is being developed to transport oil to the Port of Tanga in Tanzania for export. A 60 000 barrels per day refinery in Hoima is also planned.
- The country is renewing efforts to use its endowment of critical minerals, with new graphite and rare earth projects in Orom-Cross and Makuutu mines.

Nationally determined contribution targets for energy

Base year (2015)	Unconditional (2030)	Conditional (2030)
9.9 Mt CO ₂ -eq	22.0 Mt CO ₂ -eq	16.9 Mt CO ₂ -eq

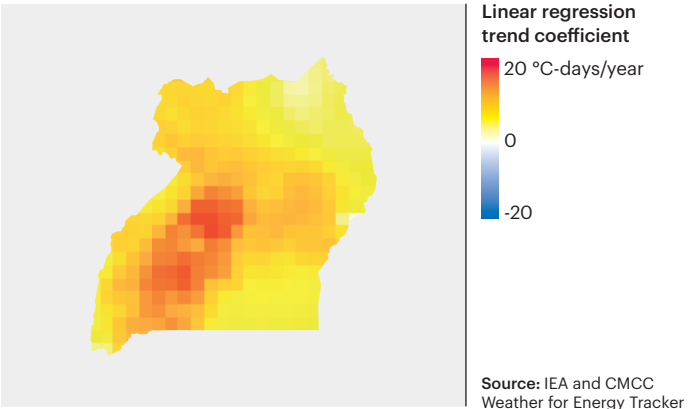
Power infrastructure map

The map below shows the types and capacities of power plants in the country as well as the electricity grid.



Weather trend map

The map below shows the annual trend of cooling degree days (indicator for space cooling needs) at grid level for 1979-2023.



These maps are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Uganda imports and exports (energy security)

TJ	Exports	Imports
Bioenergy		109 192
Oil products		84 087
Electricity	-1 549	84
Coal		4 152
Total	-1 549	197 515

--- Net trade

Note: Positive net value indicates that the country is dependent on imports of the energy source. Negative net value indicates that the country is a net exporter of the energy source.

