

Energy Sub-Saharan Africa Programme in Kenya

Africa's **8th largest economy** in 2022 with **4.8% real GDP growth**

Largest **geothermal energy producer** in Africa

Large **wind energy producer**



Kenya became an **IEA Association country** in 2023.

Kenya's energy system is dominated by bioenergy followed by oil and geothermal. **Petroleum** products are all **imported** and used primarily in the transport sector. The **residential sector** is the **largest final consumer** with more than 90% of demand met by bioenergy. **Electricity** generation is varied with most coming from **renewable** sources, such as **geothermal** and **hydro**. Electricity makes up 5% of total final consumption.

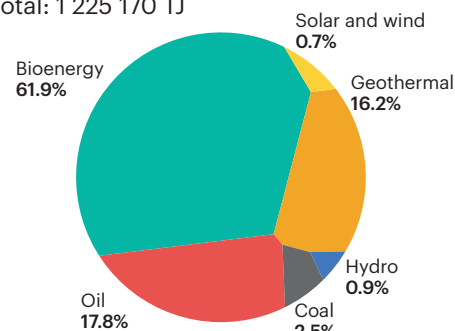
KEY POLICIES

- **Kenya Vision 2030** aims to transform Kenya into a middle-income, industrialised country with improved living standards and a secure, clean environment. Energy plays a crucial role in achieving these goals, and the government is focusing on increasing supply, enhancing efficiency, and reducing costs. The Vision is implemented through five-year Medium-Term Plans. The Ministry of Energy and Petroleum **Strategic Plan (2023-2027)** and the **Fourth Medium-Term Plan (2023-2027)** guide the energy sector and emphasise investing in clean energy infrastructure to drive economic growth and recovery.
- The **National Energy Policy (2018)** focuses on ensuring a reliable, sustainable, and affordable energy supply while promoting competitiveness. The **Kenya Energy Transition and Investment Plan (2023)** aims to provide 100% clean energy by 2030 and Net Zero by 2050, with an estimated USD 600 billion of investments required. The country is also part of the **G7 Energy for Growth Initiative**, which will help develop bankable clean energy projects.
- The **Kenya National Electrification Strategy (KNES) (2018)** provides a roadmap for achieving universal and high-quality electricity access for all households and businesses in the near term. The **Kenya National Cooking Transition Strategy (2024-2028)** aims to facilitate universal clean cooking access by 2028, aligning with **Vision 2030**. The country has a **Bioenergy Strategy (2020)** and is developing a National Electric Cooking Strategy.
- In Kenya, the legal framework for energy data is embedded in the **Energy Act 2019**, and the **Statistics Act, 2006 No. 4** mandates data collection to the **Kenya National Bureau of Statistics**.

ENERGY MIX

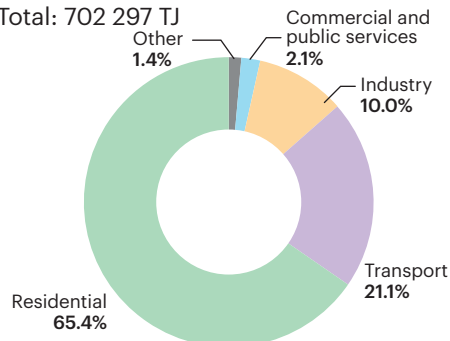
Total energy supply, 2022

Total: 1 225 170 TJ



Total final consumption, 2022

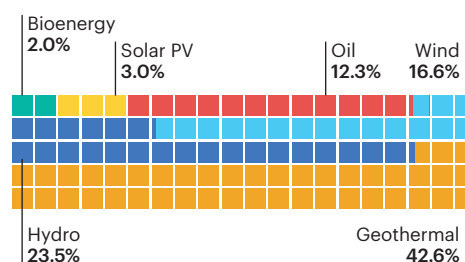
Total: 702 297 TJ



ELECTRICITY MIX

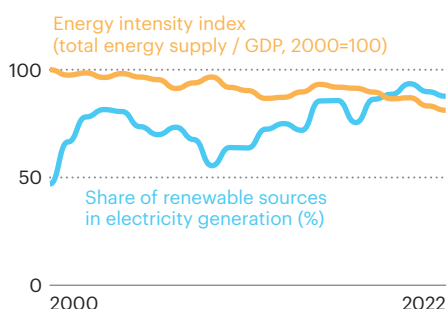
Electricity generation by source, 2022

Total: 12 934 GWh



KEY DATA

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



Population ▲

54.0 million



CO₂ emissions per capita ▼

0.33 tCO₂ per capita



Energy intensity ▼

12 895 MJ per thousand 2015 USD



Gross Domestic Product ▲

95.1 billion USD (2015 prices and ex rates)



Net imports ▲

275.8 PJ



Share of renewables in electricity generation ▼

87.7 %



ACCESS TO CLEAN COOKING AND ELECTRICITY

35 million

people rely on traditional biomass for cooking



25%

of population has access to clean cooking



75%

of population has access to electricity



Kenya has significantly improved electricity access, **doubling the rate over the past decade** and ranking in the top third of countries in the continent. With urban areas nearing 100% electricity access, efforts are now focused on extending grid connectivity and **expanding off-grid solutions** in remote communities. Progress on clean cooking has been slower, with Kenya in the middle third of countries in sub-Saharan Africa, but the access rate has doubled since 2015. Electricity, bioethanol and LPG are poised to play an important role in meeting the country's goal of universal access by 2028. In 2024, the country **endorsed the Clean Cooking Declaration** to make 2024 a pivotal year for clean cooking.

Electricity access breakdown

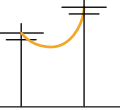
>99%

of the population in **urban areas** has access to electricity



65%

of the population in **rural areas** has access to electricity



14 million

people are **without access to electricity**



TRACKING SECURE ENERGY TRANSITION

- A diverse range of renewable sources, including significant geothermal power, provides a **secure domestic electricity supply**, meeting nearly all of the country's electricity demand. The country is part of the **Eastern Africa Power Pool (EAPP)** and is expanding interconnections with neighbouring countries. Despite improved grid reliability, blackouts remain a challenge.
- The country has prioritised **diversifying its energy generation** to achieve 100% clean power by 2030, while improving reliability and ensuring energy security in the face of a changing climate. This includes planning for the effects of climate change on energy infrastructure, particularly hydropower.
- Kenya does not have any **oil production** or active oil refineries (but did formerly have a refinery at Mombasa). Close to 90% of **energy imports** are oil products. The country has established several oil storage depots and distribution infrastructure to boost energy security.

Kenya imports and exports (energy security)

TJ	Exports	Imports
Bioenergy		478
Oil products		244 111
Electricity	-77	1 138
Coal		30 140
Total	-77	275 866

--- Net trade

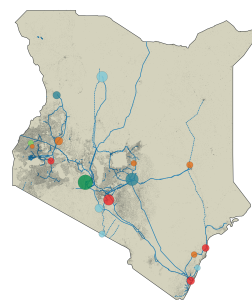
Note: Positive net value indicates that the country is dependent on imports of the energy source. Negative net value indicates that the country is a net exporter of the energy source.

Nationally determined contributions CO₂ targets

Base year (2010)	Unconditional (2030)	Conditional (2030)
11.6 Mt CO ₂	21.7 Mt CO ₂	15.4 Mt CO ₂

Power infrastructure map

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



Energy source

- Bioenergy
- Geothermal
- Hydro
- Oil
- Wind

Power capacity (MW)

- 8.5
- 1 870

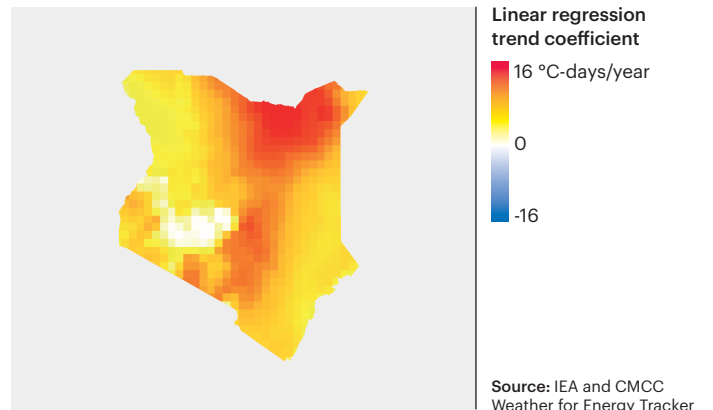
Electricity grid

- Existing
- Planned

Source: IEA, Global Energy Monitor, World Bank Group, WorldPop

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.



Linear regression trend coefficient

16 °C-days/year

0

-16

Source: IEA and CMCC Weather for Energy Tracker

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.

