

Energy Sub-Saharan Africa Programme in Ethiopia

Africa's **7th largest economy** in 2022 with **6.4% real GDP growth**

Second largest hydro potential in Africa

High geothermal potential



Ethiopia's energy mix is dominated by **bioenergy**, primarily used by the **residential** sector. Oil, which is all imported, is the second largest fuel in energy supply and is mainly used in the **industry** and **transport** sectors. Ethiopia has the **second largest hydro potential in Africa**, estimated at up to 45 000 MW. Hydro is the main source of electricity however, it makes up only 2% of total final consumption.

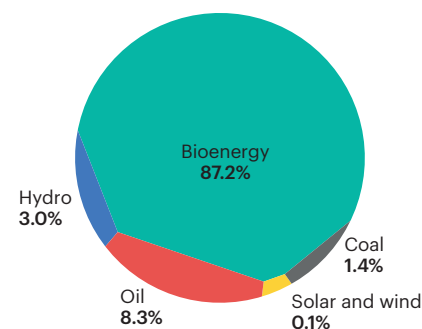
KEY POLICIES

- The **10-Year Development Plan of Ethiopia (2021-2030)** aims to improve living standards and transform the economy through inclusive growth. It prioritises reliable, accessible, and affordable energy services. Key targets include increasing power capacity from 4 478 MW to 19 900 MW, expanding transmission lines, growing the number of electricity customers from 5.8 million to 24.3 million and increasing grid and off-grid access.
- This plan is supported by the **Climate-Resilient Green Economy - Climate Resilience Strategy: Water and Energy (2015)**, which envisions Ethiopia becoming a middle-income country by 2035 and acknowledges the critical link between climate change and development objectives. The country is also part of the **G7 Energy for Growth Initiative**, which will help develop bankable clean energy projects.
- The **National Electrification Plan (NEP 2.0) (2019)** initially targeted universal electrification by 2025, but has since been revised to 2030. This target is supported by the **Power System Expansion Master Plan (2014-2037)** which outlines a massive expansion of grid infrastructure and anticipates significant long-term electricity demand for cooking.
- In 2023, to better inform and track such policies, the government put in place the **Ethiopian Statistical Development Program**, in close collaboration with the **Ethiopian Statistical Services**. The programme aims to improve the quality and raise the profile of official statistics at various administrative levels.

ENERGY MIX

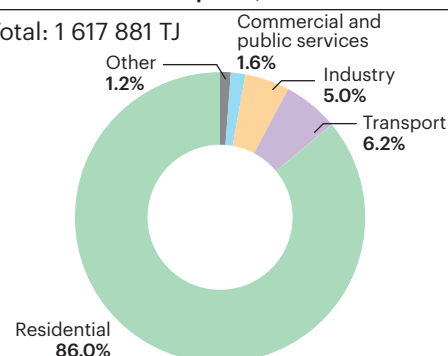
Total energy supply, 2022

Total: 1 990 234 TJ



Total final consumption, 2022

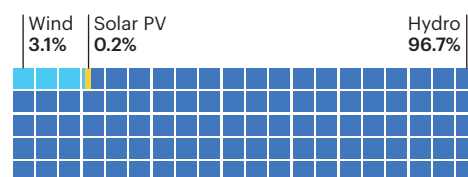
Total: 1 617 881 TJ



ELECTRICITY MIX

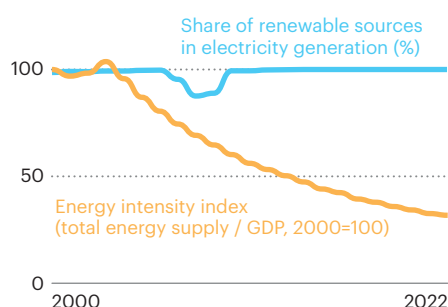
Electricity generation by source, 2022

Total: 17 338 GWh



KEY DATA

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



Population ▲

123.4 million



CO₂ emissions per capita ▼

0.12 tCO₂ per capita



Energy intensity ▼

18 771 MJ per thousand 2015 USD



Gross Domestic Product ▲

105.7 billion USD (2015 prices and ex rates)



Net imports ▲

214.1 PJ



Share of renewables in electricity generation

100 %



ACCESS TO CLEAN COOKING AND ELECTRICITY

111 million

people rely on **traditional biomass** for cooking



9%

of population has access to clean cooking



53%

of population has access to electricity



Ethiopia is in the middle third of African countries regarding access to electricity and clean cooking. While significant strides have been made in electrification, access to clean cooking has lagged, with notable disparities between rural and urban areas. To address these challenges, the government has launched strategic initiatives like the **eCooking Market Assessment (2022)** and the **Biomass Energy Strategy of Ethiopia (BEST) (2013)**, which aim to increase clean cooking access to 33% by 2030 and promote sustainable biomass use. To achieve universal electrification by 2030 and 65% grid connectivity, the government is focusing on **fast-paced ambitious grid expansion** while incorporating **off-grid technologies** where needed.

Electricity access breakdown

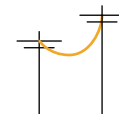
96%

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



40%

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



58 million

people are **without access to electricity**



TRACKING SECURE ENERGY TRANSITION

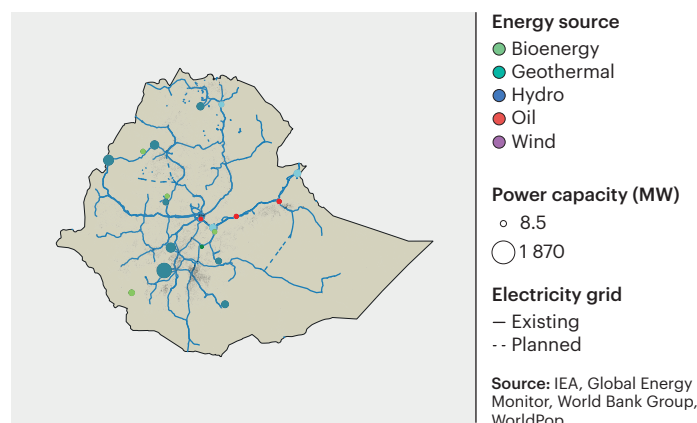
- As a net electricity exporter, Ethiopia is seeking to harness **significant hydroelectric potential** through projects like the Grand Ethiopian Renaissance Dam, while diversifying its energy mix through renewables to ensure security and reliability amidst climate change impacts. Cross-border electricity trading within the Eastern Africa Power Pool also enhances energy security, providing a market for renewable exports and backup during shortfalls, stabilising the national supply and supporting regional integration.
- Currently, Ethiopia has **no crude extraction or refining capabilities**, resulting in the **import of all oil products**. However, the country has **proven crude reserves**, sparking interest in initiating extraction. Large-scale and commercial mining is nascent, with **large untapped mineral resources** such as tantalum and gold. Developing these resources is seen as a key opportunity to boost exports and GDP while creating employment opportunities.

Nationally determined contribution targets for energy

Base year (2010)	Unconditional (2030)	Conditional (2030)
5.0 Mt CO ₂ -eq	14.9 Mt CO ₂	9.5 Mt CO ₂ -eq

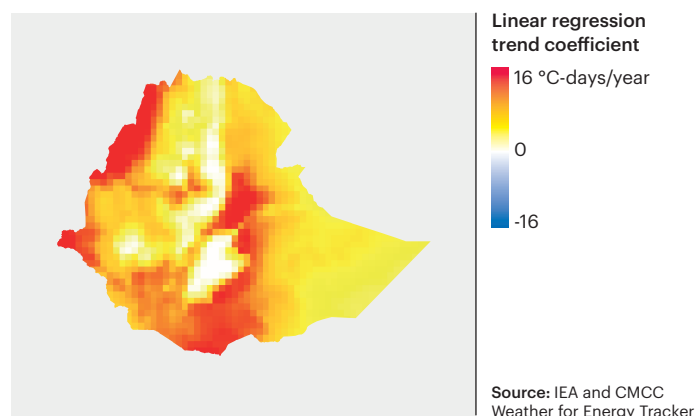
Power infrastructure map

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



Ethiopia imports and exports (energy security)

TJ	Exports	Imports
Oil products		205 051
Electricity	-6 300	
Coal		15 364
Total	-6 300	220 415

--- 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.

