

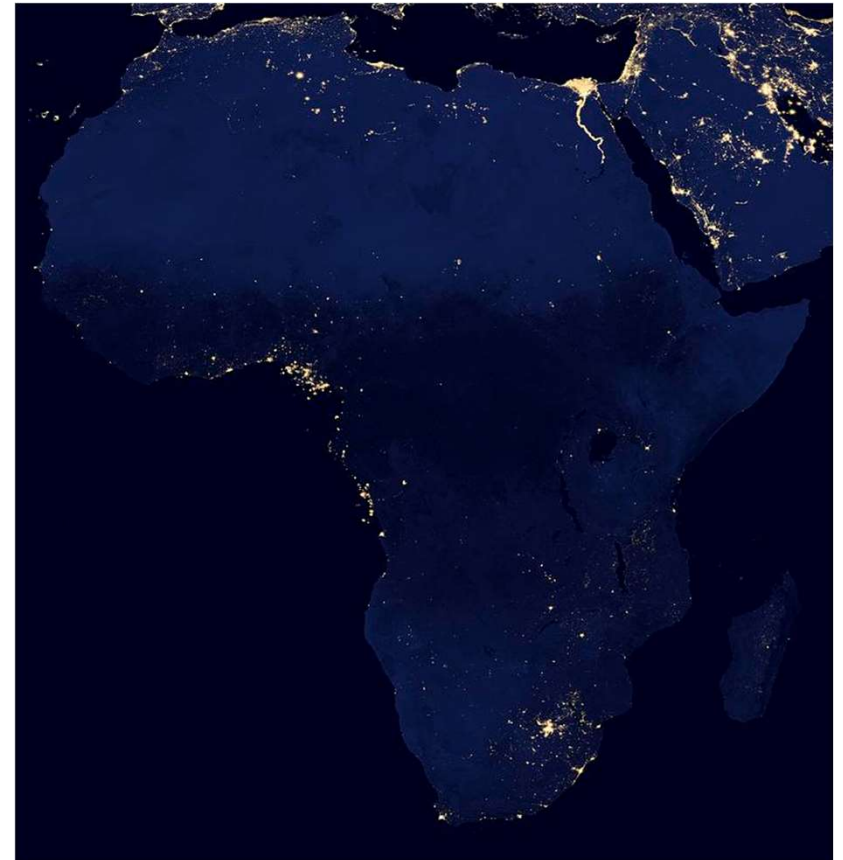
# Electricity Supply in Africa – is the situation improving?

U3AC

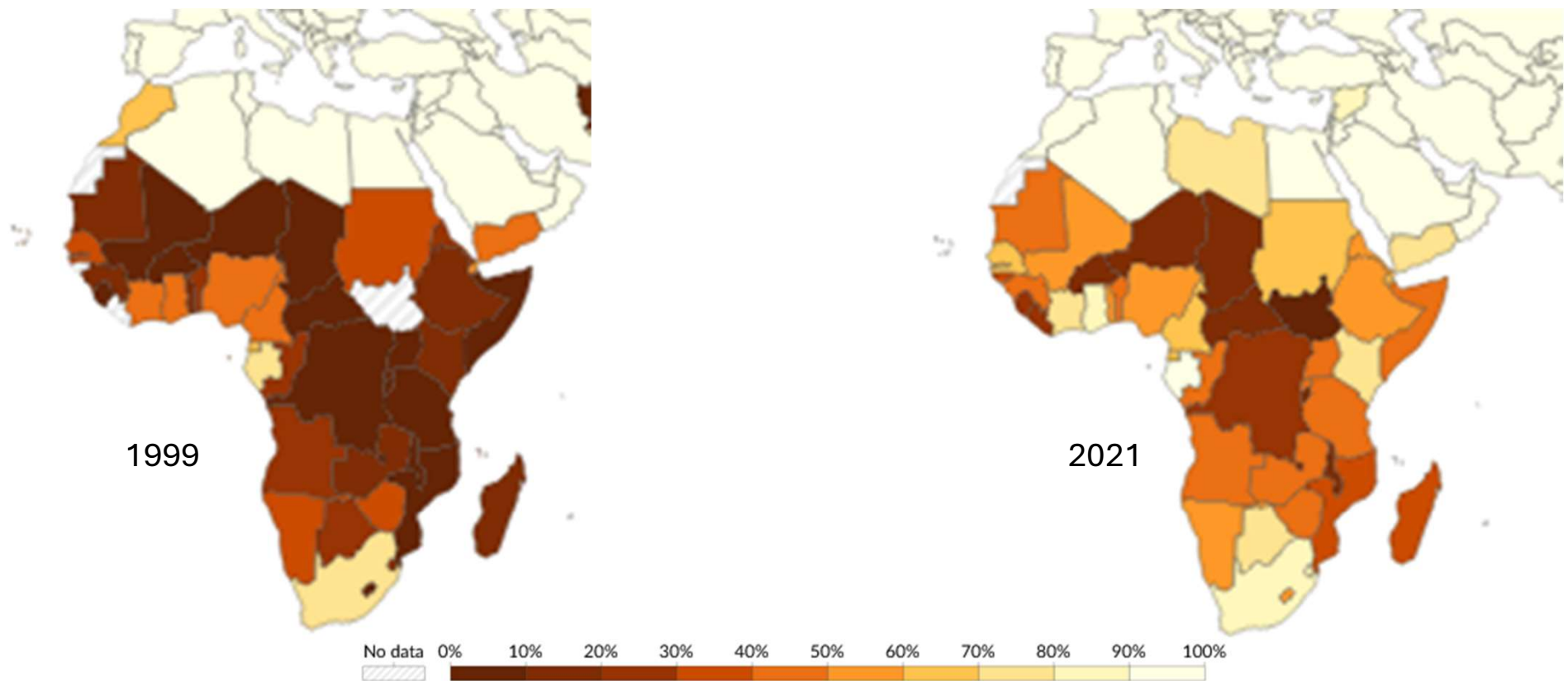
Neil Pinto

15 November 2024

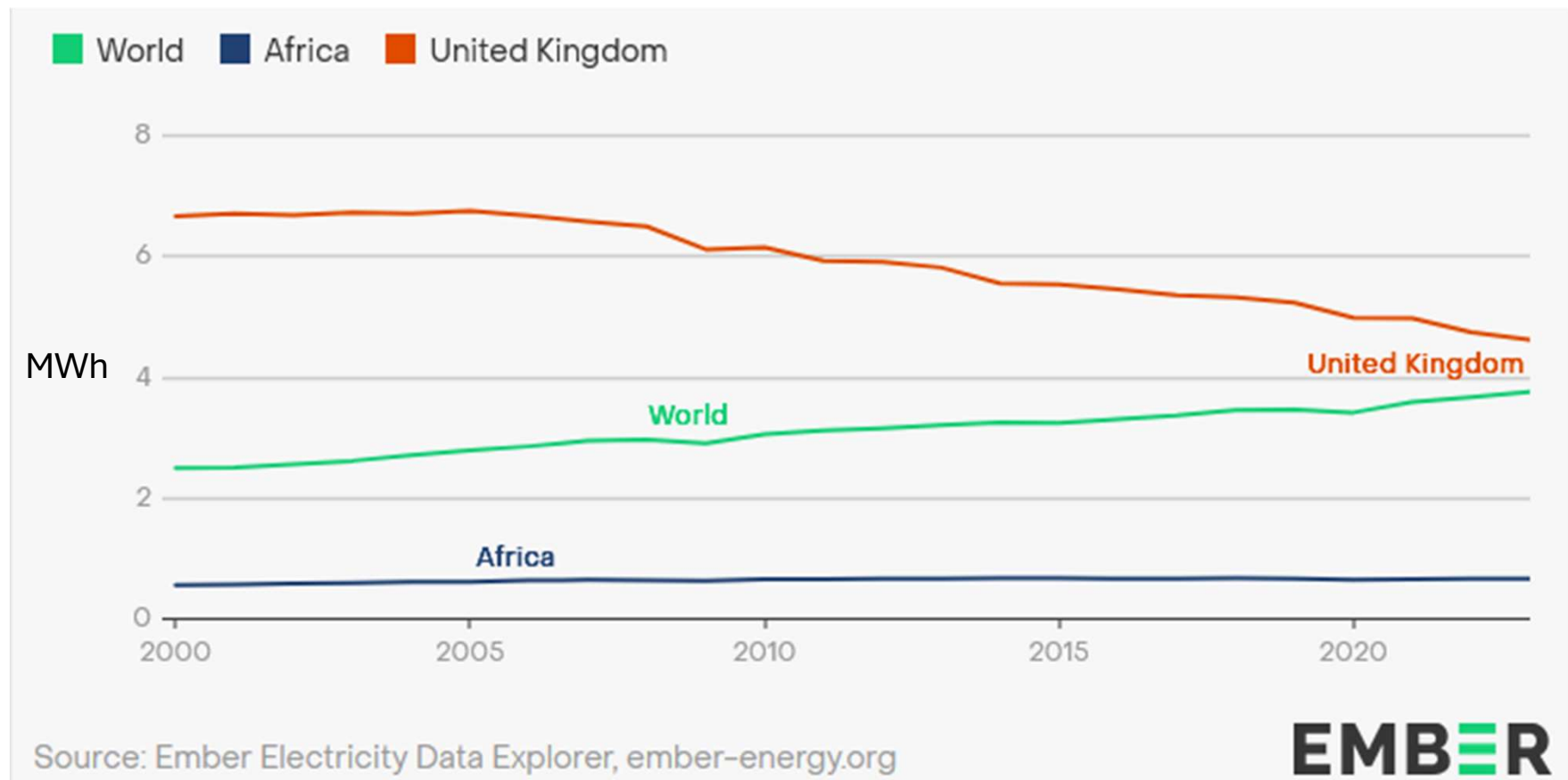
# The Dark Continent



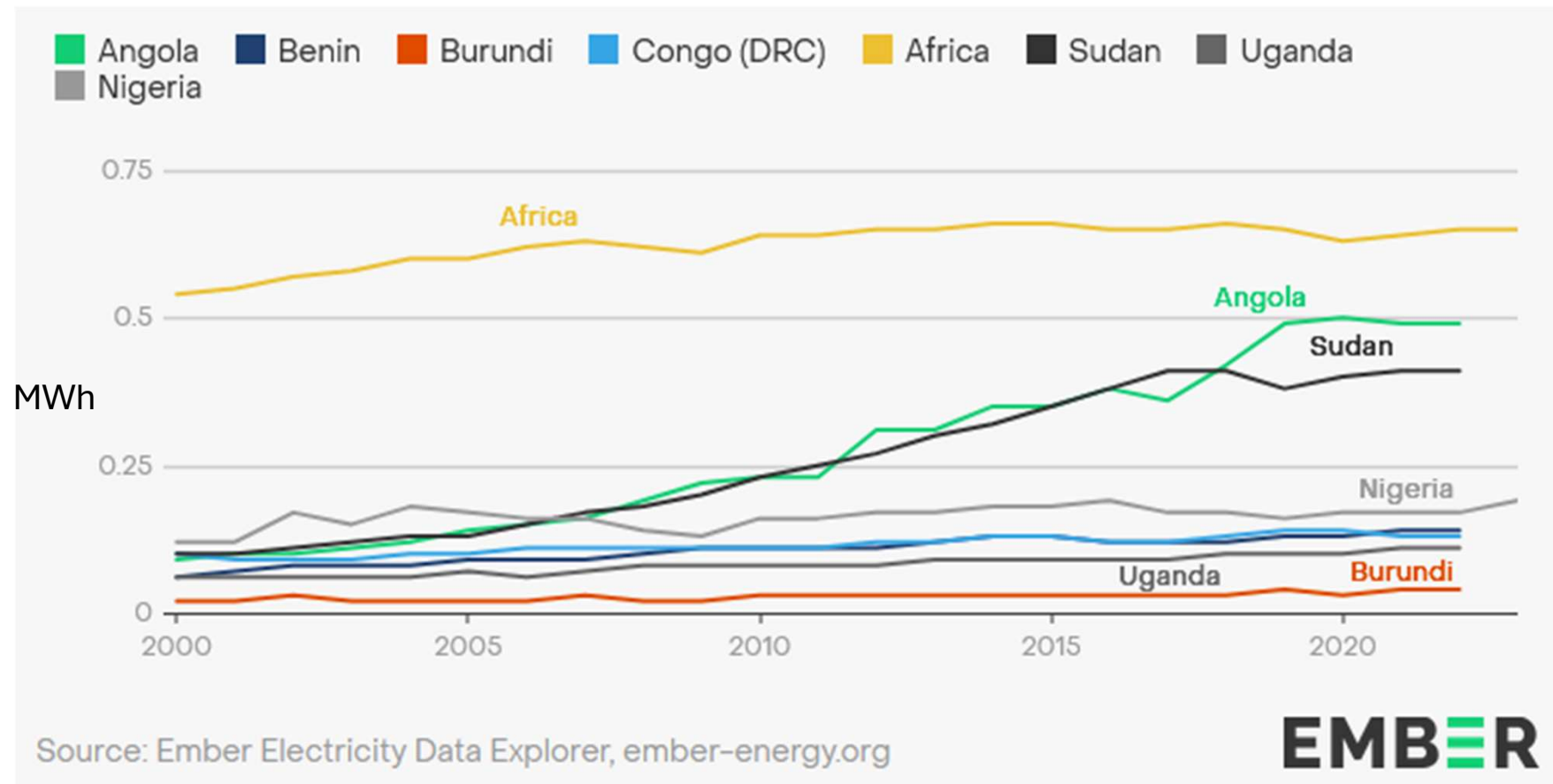
# Share of Population with access to electricity



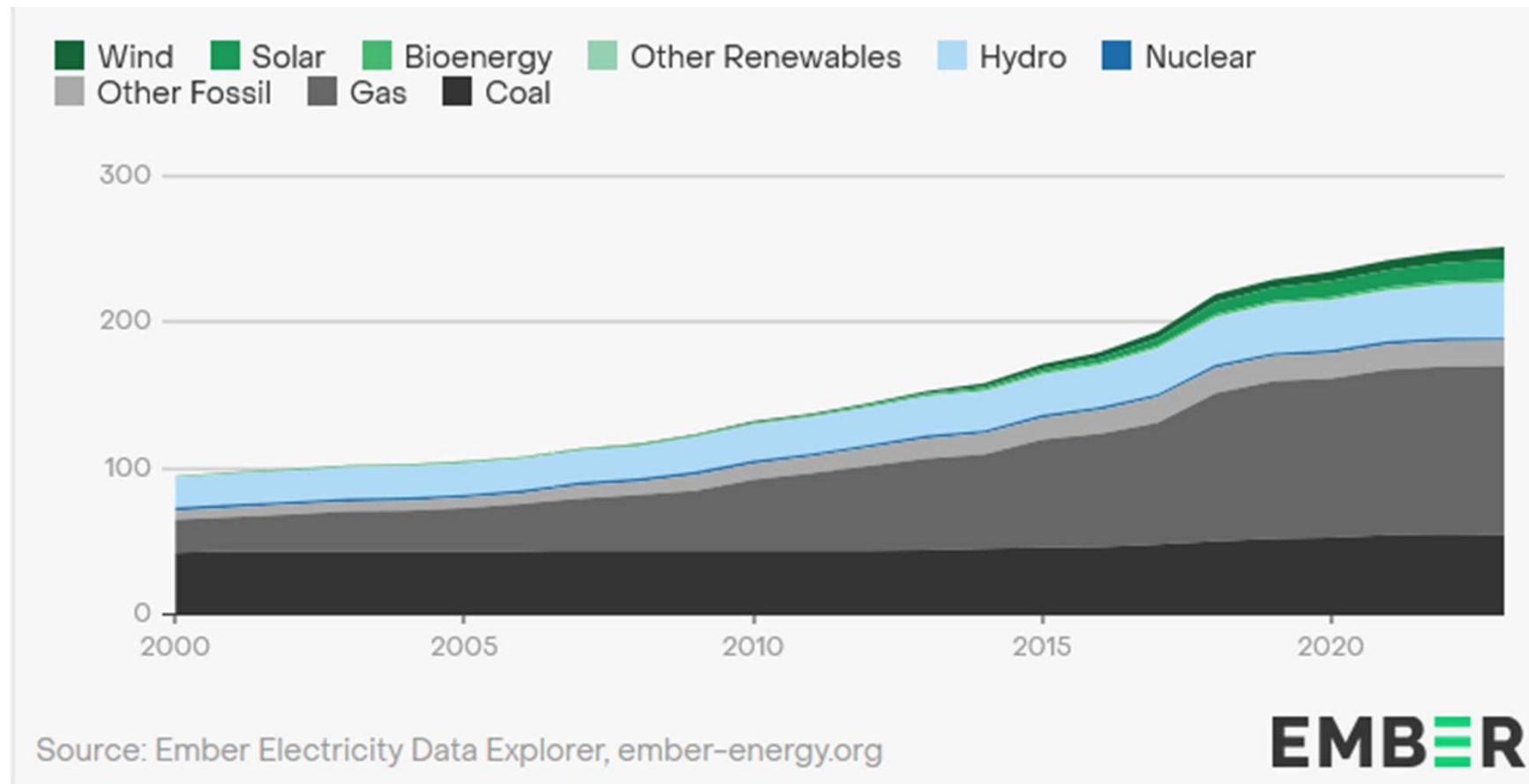
# Per Capita Consumption



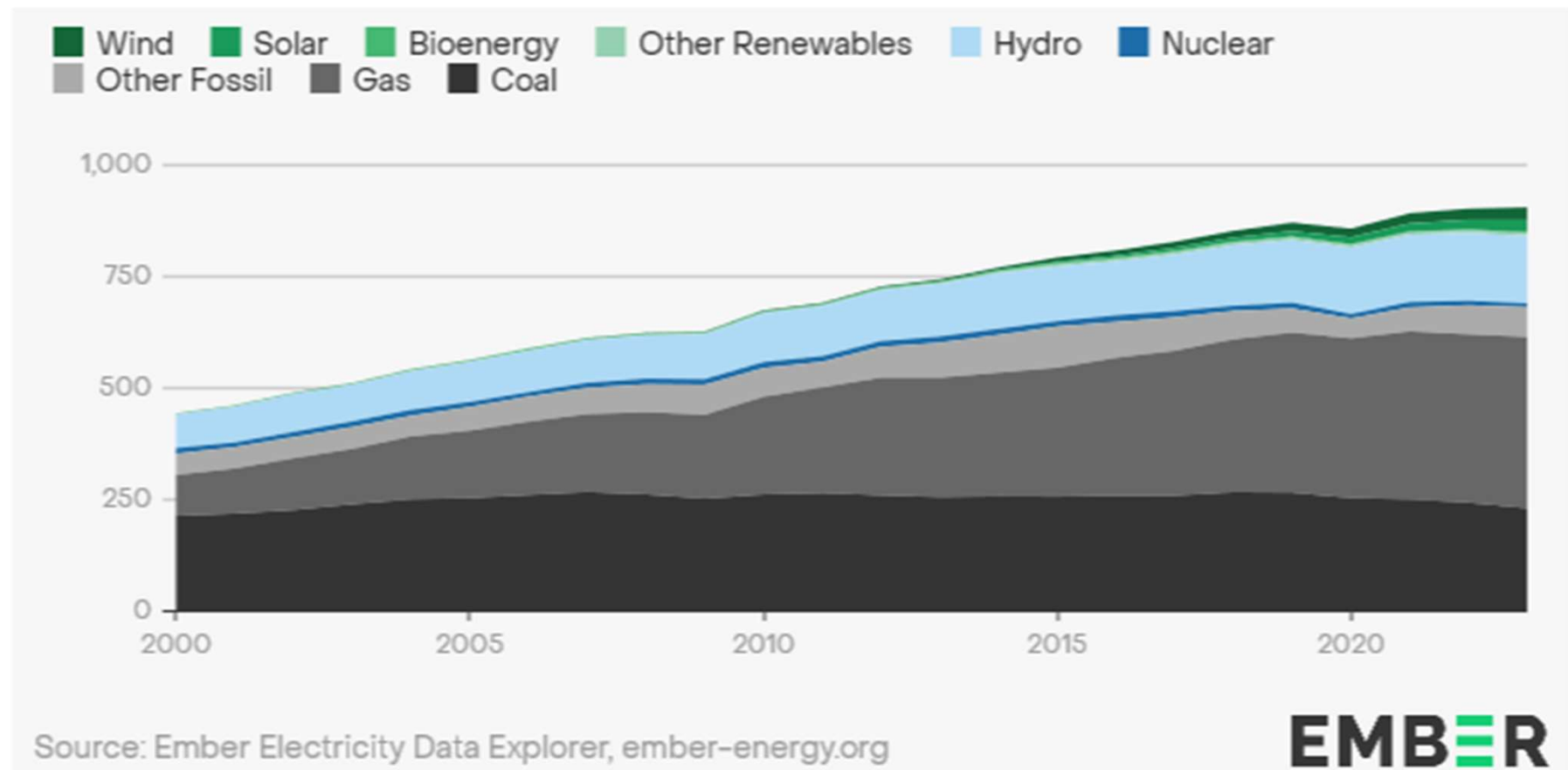
# But some countries are a lot more electricity poor



# Installed Capacity (GW)



# Electricity Generation by source (TWh)





# Grid supply or local systems?



© Renewable World

Typically 0.006 MW



# Medupi Coal Fired Power Plant, South Africa



4 800MW Eighth largest coal fired plant in world

# Gas Fired Power Plants



200 MW Amandi Energy Power Plant, Ghana



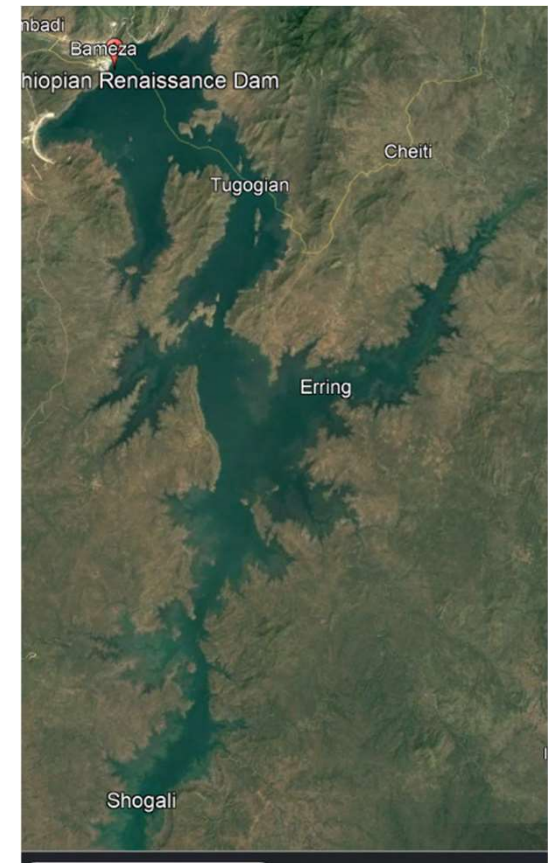
130 MW Malicounda Power Plant, Senegal



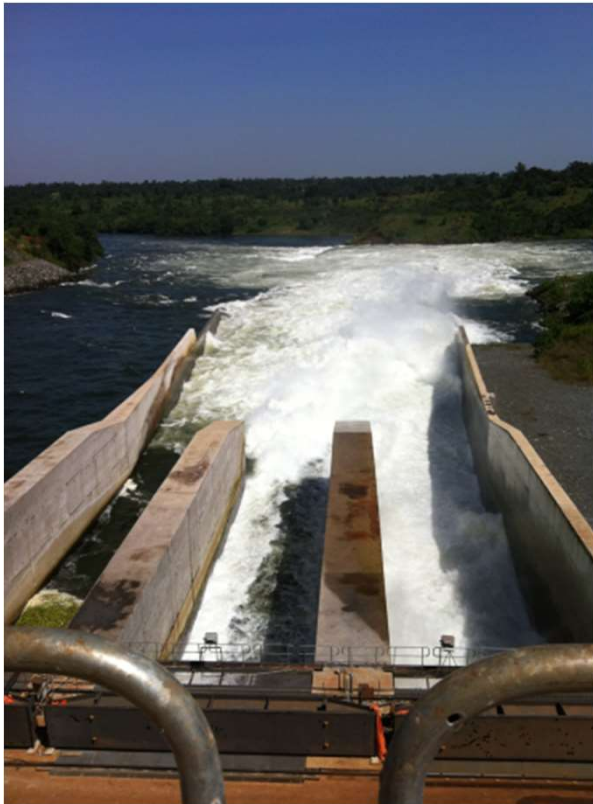
# Grand Renaissance Dam, Ethiopia



5100 MW – Now Operational



# Bujagali, Uganda



250 MW

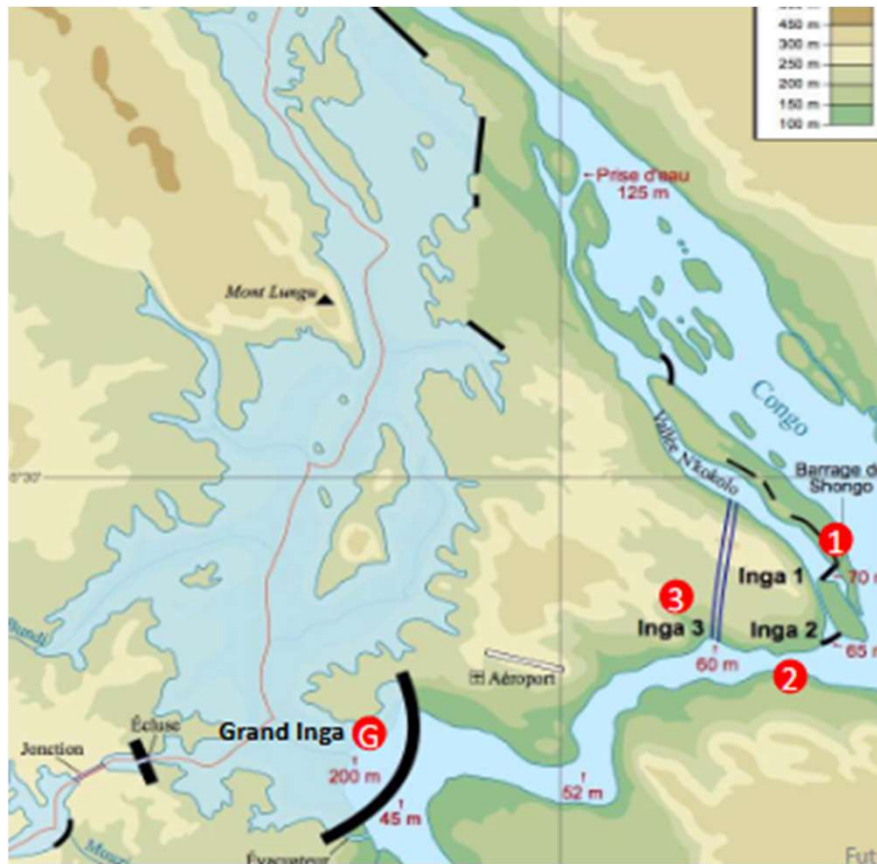


# Julius Nyerere Hydropower Plant, Tanzania



2115 MW

# Grand Inga, DRC



Between 40 000 and 70 000 MW?



# Geothermal Power Station – Olkaria, Kenya



Total Geothermal Capacity 900 MW

# Wind Power – Lake Turkana, Kenya



365 turbines each with 0.85MW capacity totalling 310 MW

# Solar Generation – Kenhardt, South Africa



540 MW



# Nuclear – Koeberg, South Africa



1 840 MW

# Kingtom Power Station, Sierra Leone

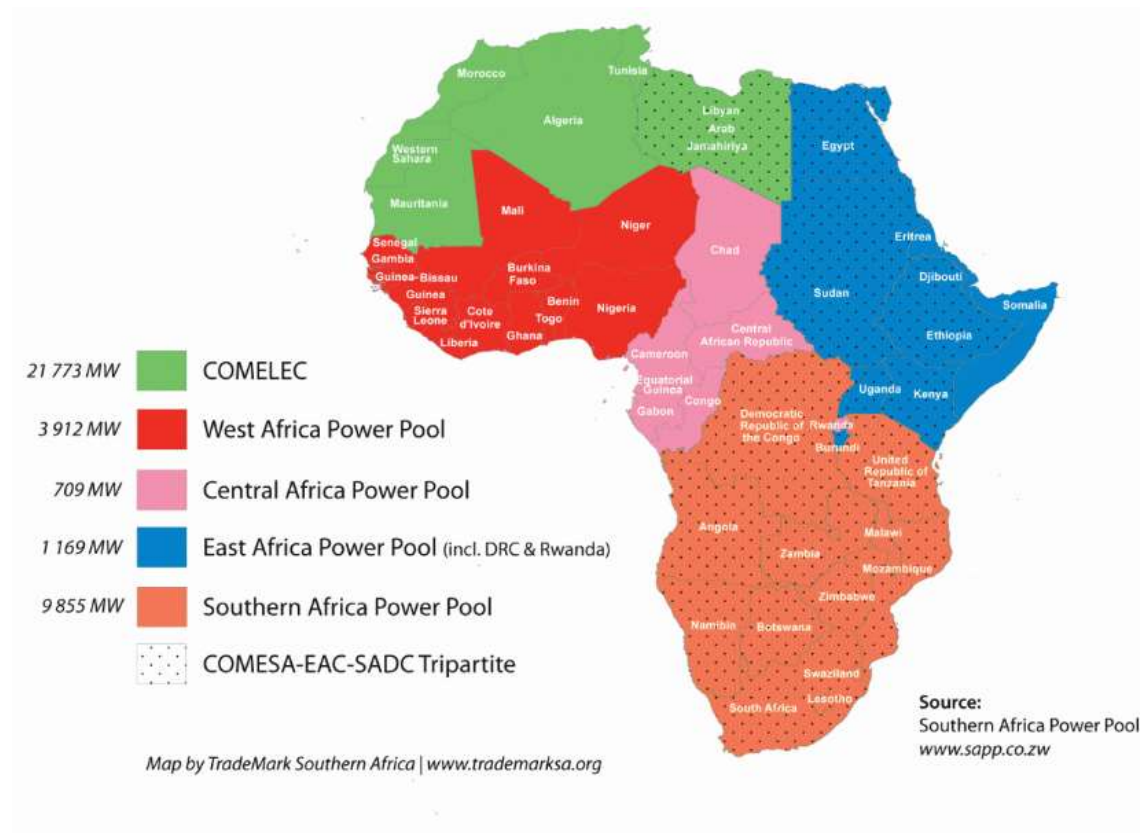


# Emergency Generation – Sierra Leone

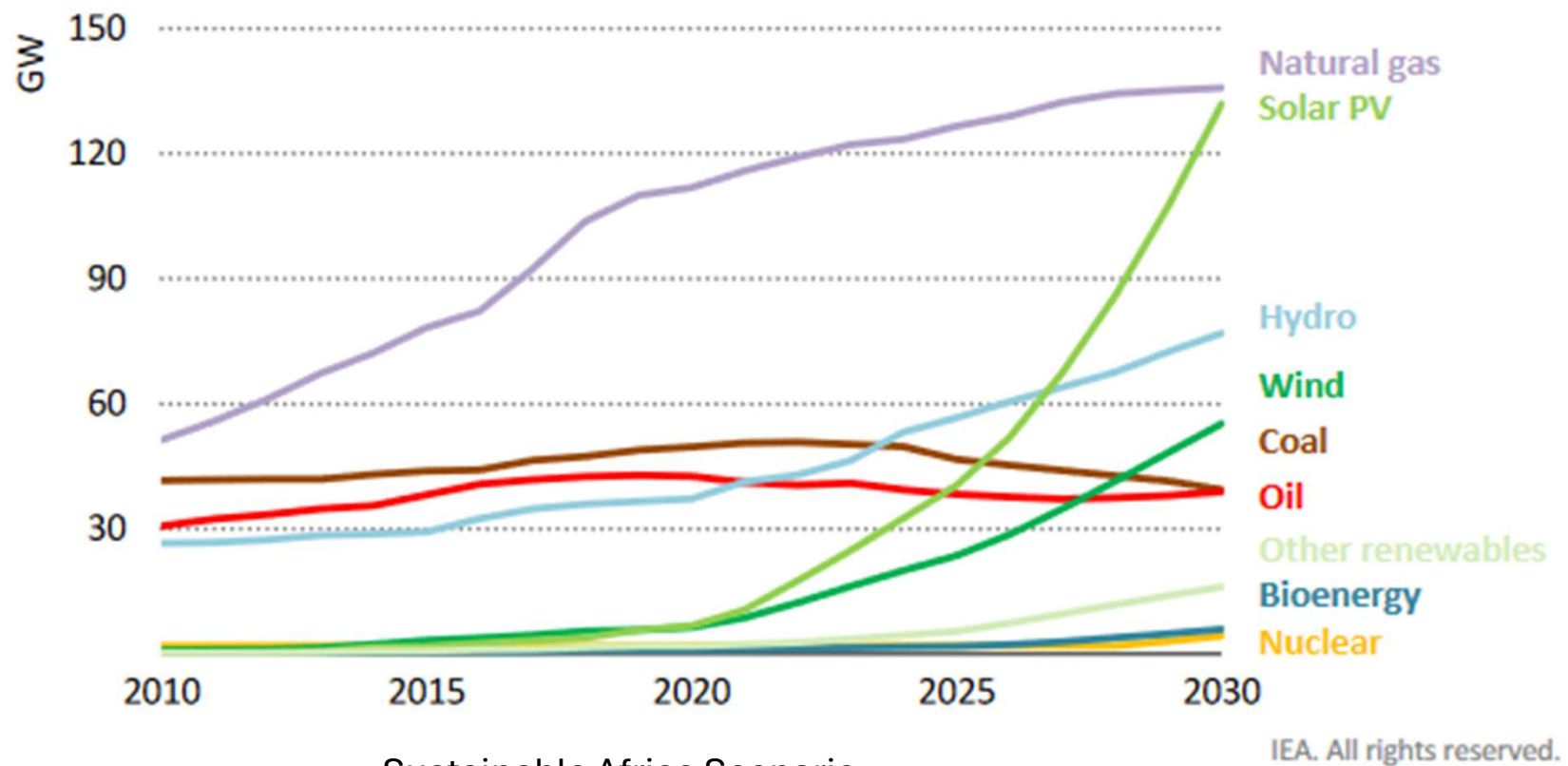




# African Power Pools



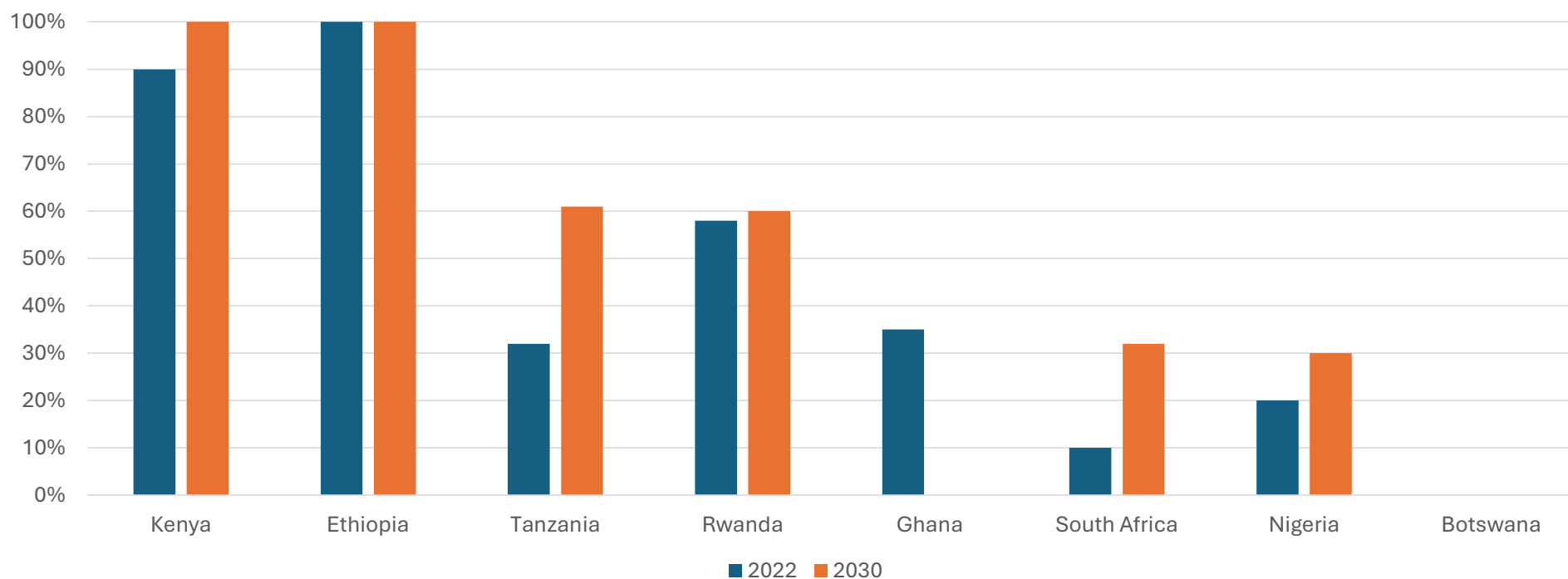
# Growth in renewable generation?



Sustainable Africa Scenario  
Africa Energy Outlook 2002

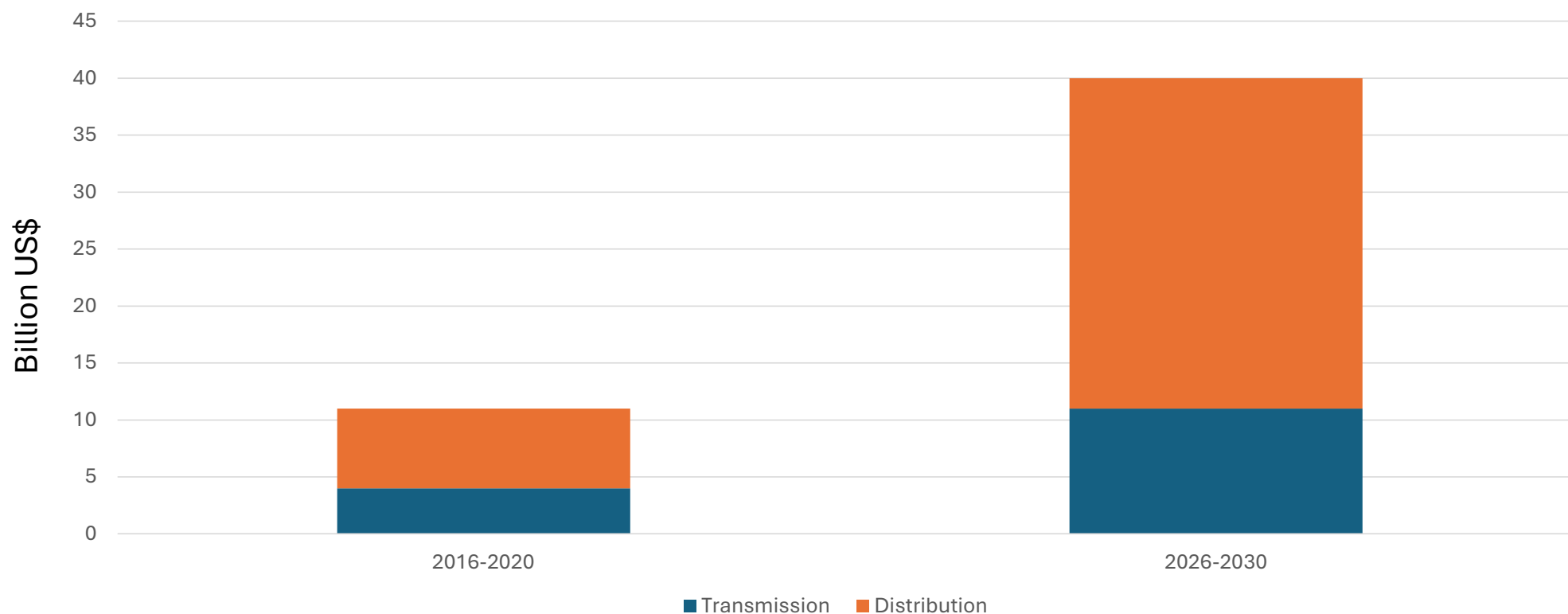
# But national renewable targets for 2030 are more modest

Share of Renewable Generation as % of total



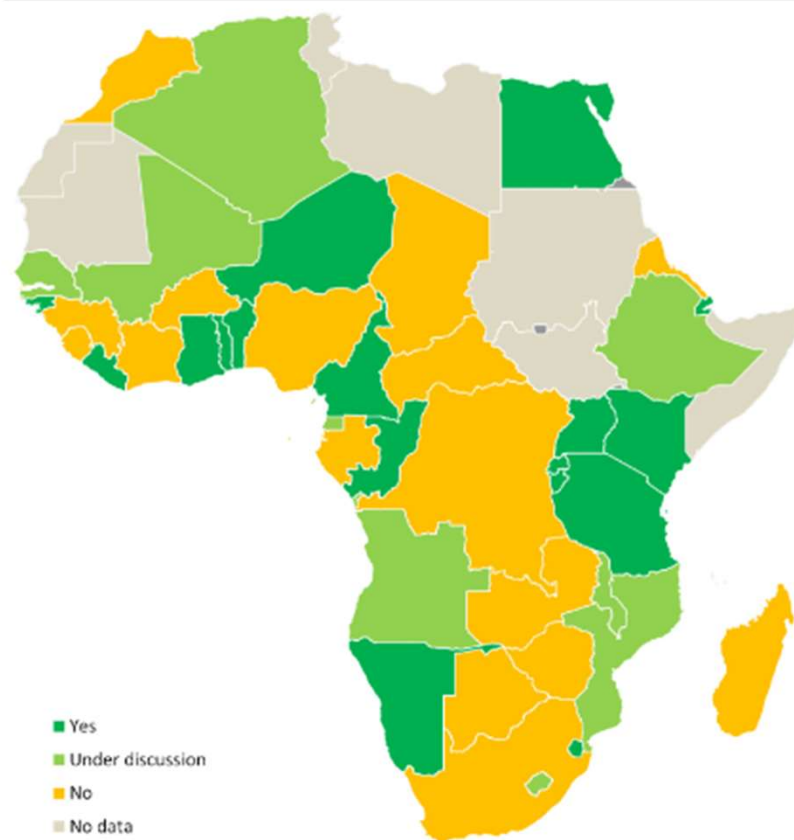


# Electricity Supply is not cheap



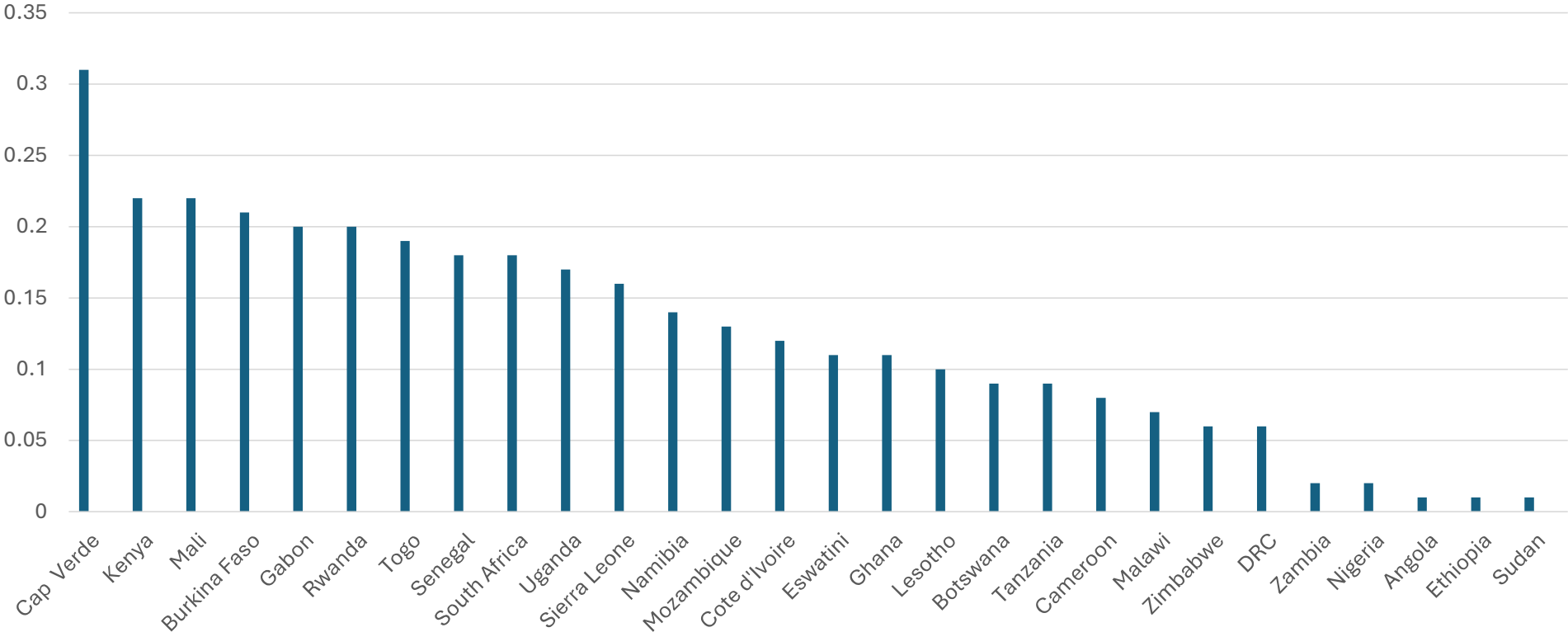
Source IEA, based on sustainable scenario

# Status of cost reflective tariffs in 2021



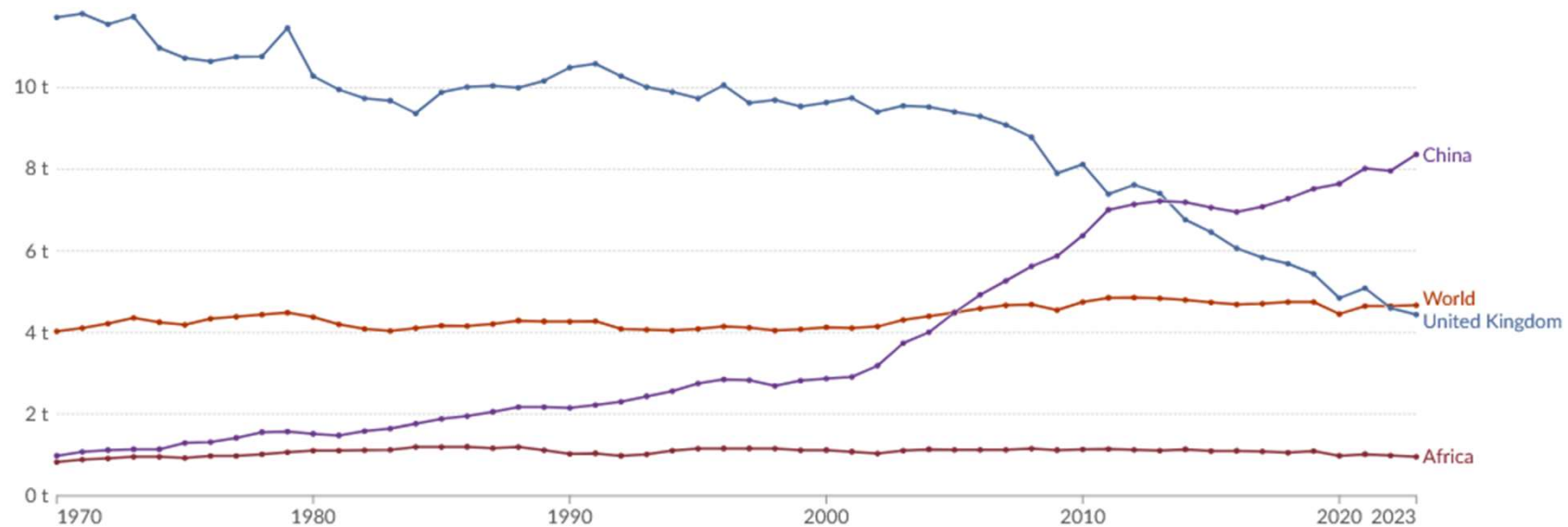
IEA. All rights reserved.

# Average Electricity Prices (US\$/kWh)



Source - Statista

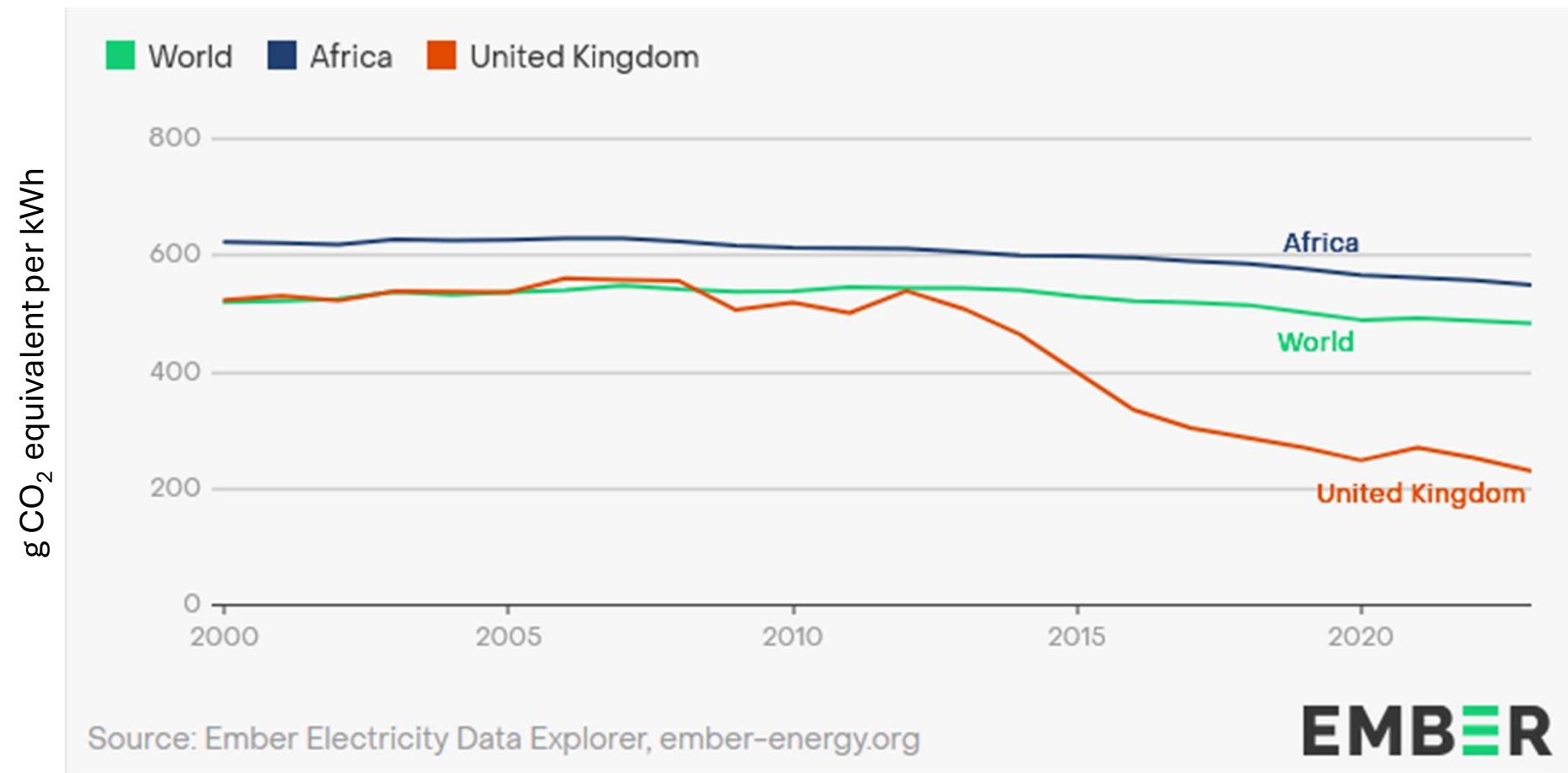
# Per capita CO<sub>2</sub> emissions



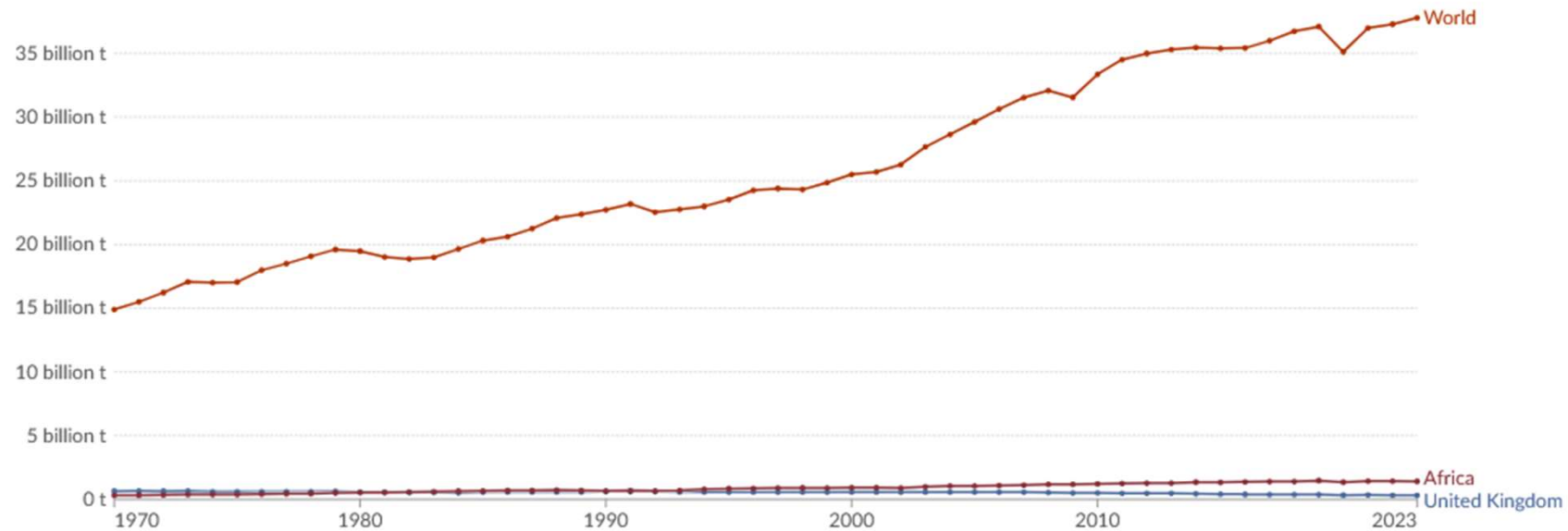
Source Global Carbon Budget (2024) - Emissions only from fossil fuels and industry excluding land use



# But is Africa green?



# But it contributes only a negligible amount to global CO<sub>2</sub> emissions



# Conclusions

- Access to electricity in Africa is improving
- But per capita consumption is not
- And the costs of supply are increasing
- Is Renewable Energy a solution?