

Background note on Africa's Current Path Energy Future to 2043

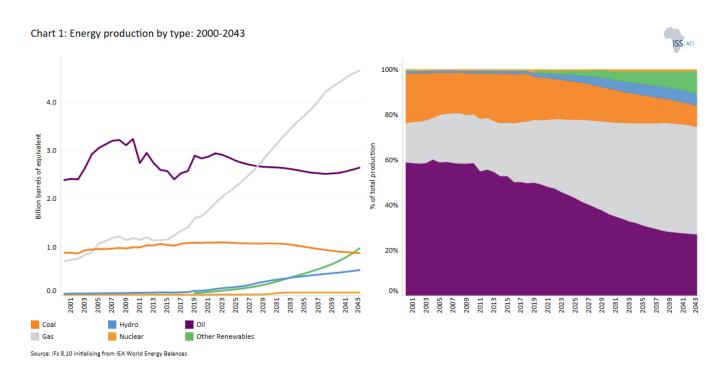
History and forecast of global energy demand and production Jakkie Cilliers

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History and forecast of global energy demand and production

Energy demand and production (at the global level, they are essentially the same) continue to increase more rapidly than the global population even as the demand relative to GDP (energy intensity) declines slowly, reflecting greater energy efficiencies.

The historical picture since 2000 is presented in Chart 1, with a forecast to 2043. The trend of increased energy demand is evident when considering a world population that is set to increase from 8 billion in 2023 to 9.2 billion in 2043 (i.e. by 15%), while energy demand will increase from 94.8 BBOE, to 124.1 BBOE in 2043 (i.e. by more than double the population increase at 31%), reaffirming the strong relationship between energy availability and development. The data is available for various global groups, key countries, African regions and all African countries.



In 2023, only about 4.8% of global energy production came from 'other renewables', mostly sun and wind (equivalent to 4.6 BBOE). The share from oil was at 31%, gas at 27%, coal at 29%, and the remainder from nuclear (5.4%) and hydro (2.9%). The share of oil, coal and gas production, the three components of fossil energy in the global energy mix, has remained above 80% for the last two decades and is declining much more slowly than required to avoid rapid climate change.

Globally, the following important energy production transition points to 2043 are evident from Chart 1:

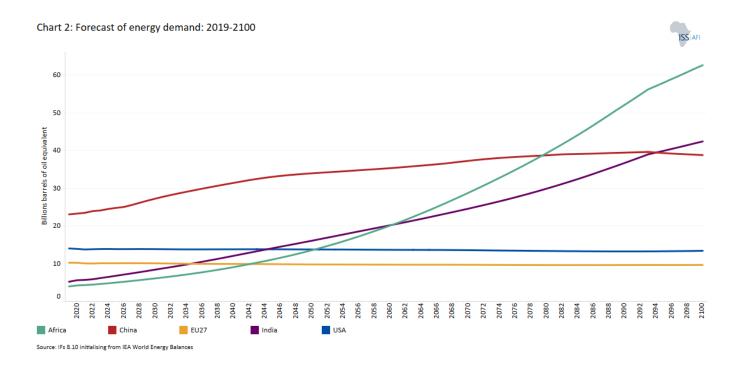
- Global gas production overtakes coal in 2026 and oil in 2031.
- The share from other renewables in global energy production overtakes nuclear in 2024, coal in 2040, oil in 2044, and gas in 2049.

In 2023, only about 1.6% of Africa's energy production came from 'other renewables' equivalent to 0.1 BBOE. The share from oil is 45.8%, gas at 32.3%, coal at 17.3%, hydro at 2.5% and other renewables at 1.6%

In Africa, the following important energy production transition points to 2043 are evident from Chart 1:

- Gas overtakes oil in 2028
- Other renewables overtake hydro in 2033 and coal in 2042

Because of a growing population and economy, Africa's portion of the world energy demand will increase from 4.35% in 2019 to 14.82% by 2063. On the Current Path forecast, Africa's energy demand will overtake the EU27 in 2043, the USA in 2050, India in 2050, and China in 2079.



The main reason for Africa's increase in its energy demand is its growing population. In 2023, Africa's population surpassed that of India and China. It will continue increasing rapidly after that.

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About the authors

Dr Jakkie Cilliers is the ISS's founder and former executive director of the ISS. He currently serves as chair of the ISS Board of Trustees and head of the African Futures and Innovation (AFI) programme at the Pretoria oce of the ISS. His 2017 best-seller Fate of the Nation addresses South Africa's futures from political, economic and social perspectives. His three most recent books, Africa First! Igniting a Growth Revolution (March 2020), The Future of Africa: Challenges and Opportunities (April 2021), and Africa Tomorrow: Pathways to Prosperity (June 2022) take a rigorous look at the continent as a whole.

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Scenarios and forecasting can help Africa identify and respond to opportunities and threats. The work of the African Futures & Innovation (AFI) program at the Institute for Security Studies aims to understand and address a widening gap between indices of wellbeing in Africa and elsewhere in the world. The AFI helps stakeholders understand likely future developments. Research findings and their policy implications are widely disseminated, often in collaboration with in-country partners. Forecasting tools inspire debate and provide insights into possible trajectories that inform planning, prioritisation and effective resource allocation. Africa's future depends on today's choices and actions by governments and their non-governmental and international partners. The AFI provides empirical data that informs short- and medium-term decisions with long-term implications. The AFI enhances Africa's capacity to prepare for and respond to future challenges. The program is headed by Dr Jakkie Cilliers.

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