

Energy Transitions in a COVID-disrupted Africa

Professor Tracy-Lynn Field

University of the Witwatersrand

Energy Transition in a Health-Constrained World

University of Houston Law Center

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Happy Africa Day 2021

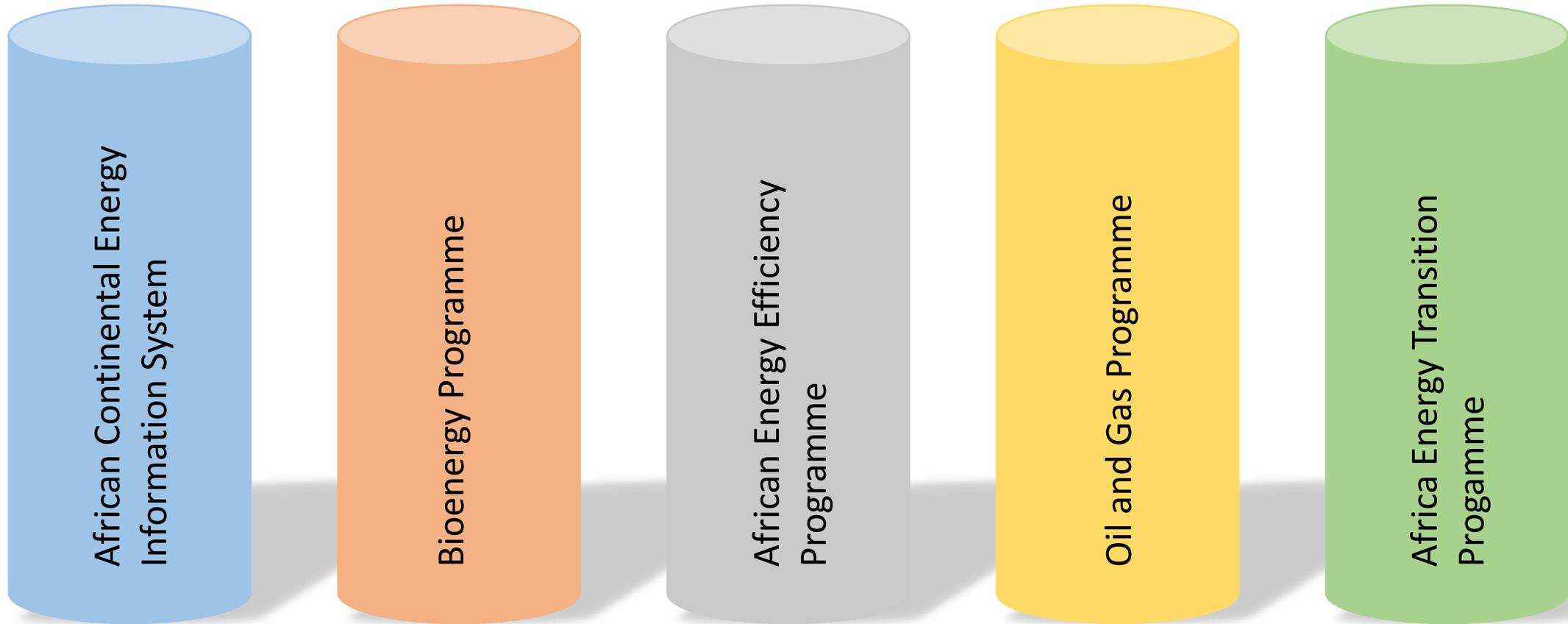


Aspiration: A Pan-African Energy Vision



By 2063 Africa's energy systems will be based on renewable energy sources coupled with a strong and largely localized manufacturing sector; highly qualified human resources; integrated energy infrastructure for centralized and decentralized energy systems; universal access to modern and clean energy services; convergence to address extensive energy inequality within and between countries and regions; and sufficiency and responsible well-being.¹

1. African Energy Commission *Designing the Africa Energy Transition* (African Union, 2019), p.11.



African Energy Commission (AFREC) 2019 Strategy

Africa Energy Transition Programme 2020 - 2025

Strategic Objective 1: Energy infrastructure for economic and social development (aligning energy services with key economic sectors; e.g. agriculture)

Strategic Objective 2: Alignment with the Paris Agreement and a strong manufacturing sector for local production of renewable technologies

Strategic Objective 3: Long-term strategic planning towards smart, people-centred, interconnected and distributed renewable energy systems

Strategic Objective 4: Regional and intercontinental gas pipelines (7% of proven gas reserves, largely untapped)

Strategic Objective 5: Webs of increased electricity integration alongside distributed, decentralized electricity production

Strategic Objective 6: Climate change and decarbonisation of the sector

Strategic Objective 7: Greater African collaboration on R&D for renewable technologies, social innovation as a counterweight to technology-centred paradigm

Guiding Principles



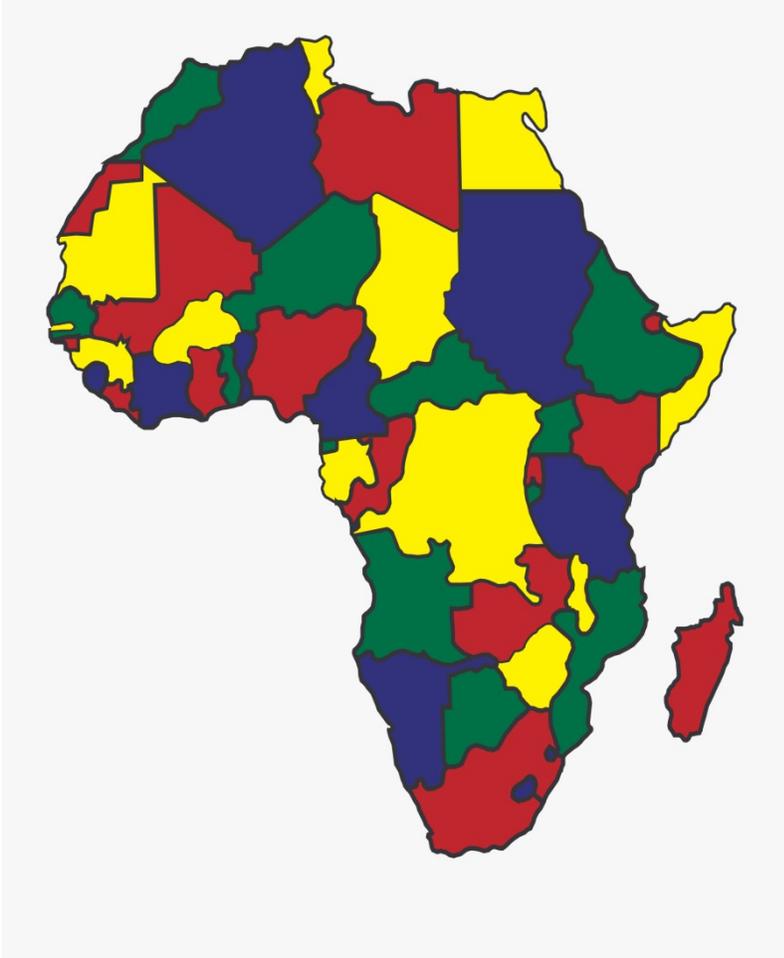
African ownership, leadership and self-reliance

Leapfrogging: Low emissions intensity, many energy systems still to be built, a chance to avoid a lock-in to carbon intensive pathways.

[W]hile industrialized and emerging economies face the challenge of transforming their existing energy infrastructure, African countries have the opportunity to adopt cleaner, flexible, more efficient and adaptable energy systems from the start.²

1. African Energy Commission *Designing the Africa Energy Transition* (African Union, 2019), p. 12.

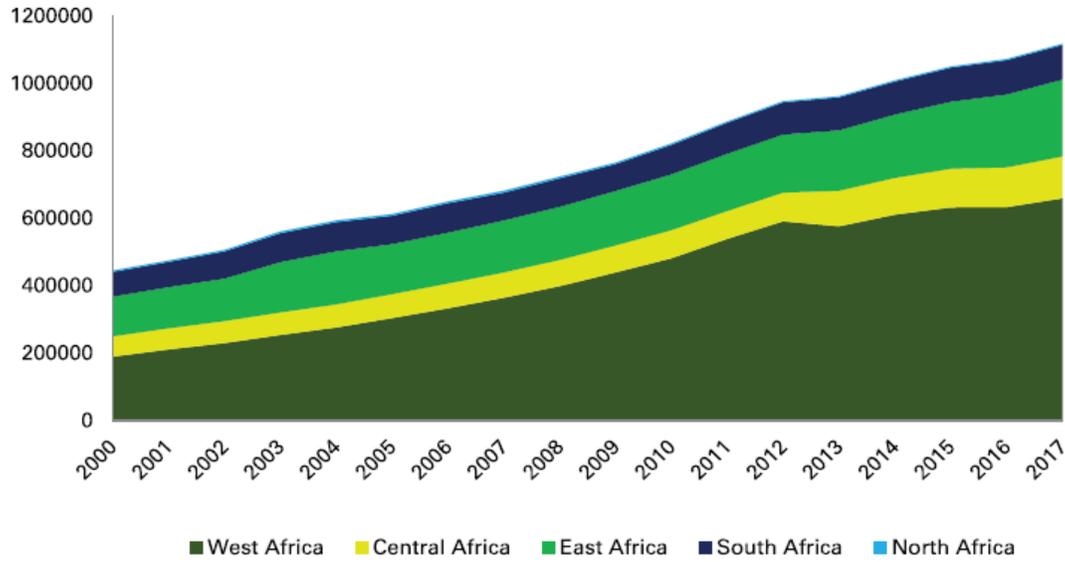
Status Quo: Energy Consumption, Supply and Production in Africa



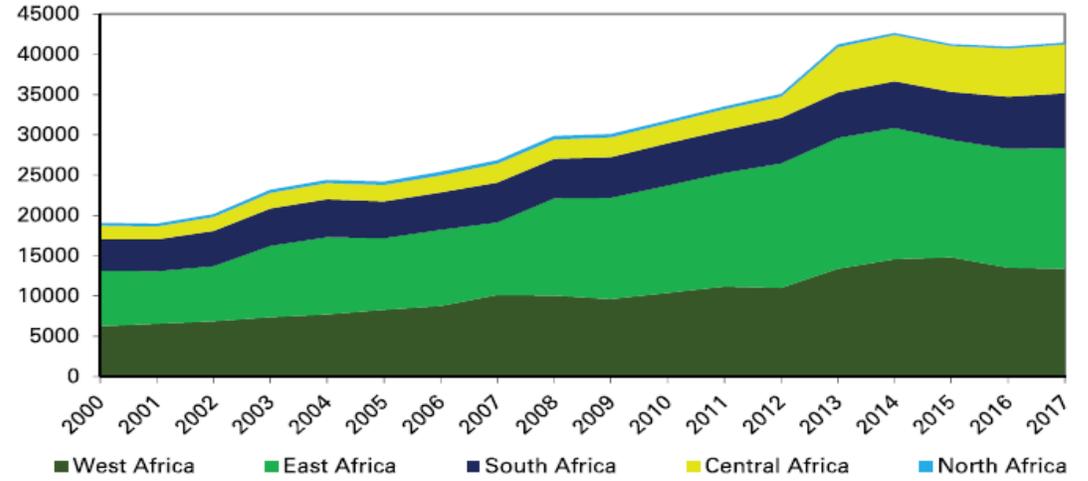
The current energy consumption of the entire 1 billion people in Africa is less than that of 20 million residents of the State of NY.

Energy is a fundamental prerequisite for development and a key requirement for the wellbeing of [African] society.

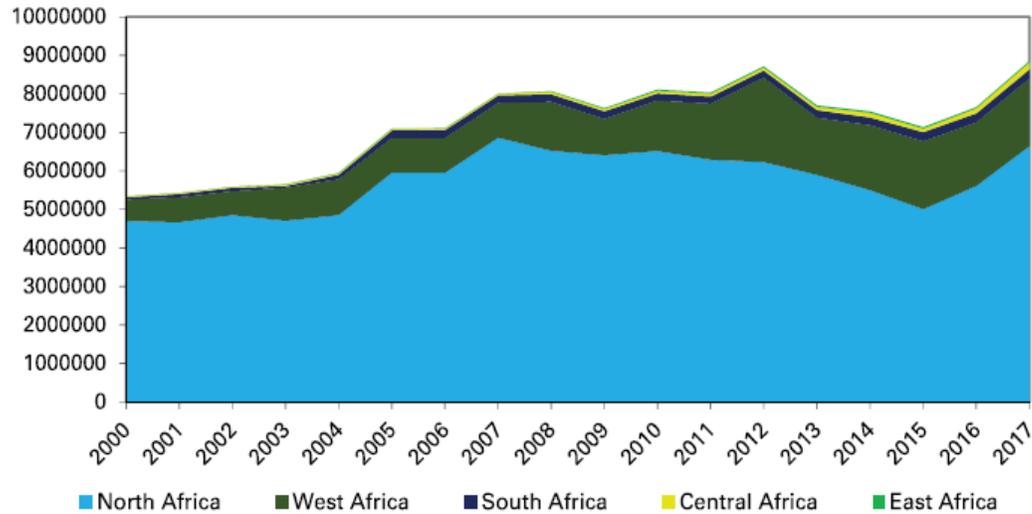
Firewood Production from 2000 to 2017 by region (kt)



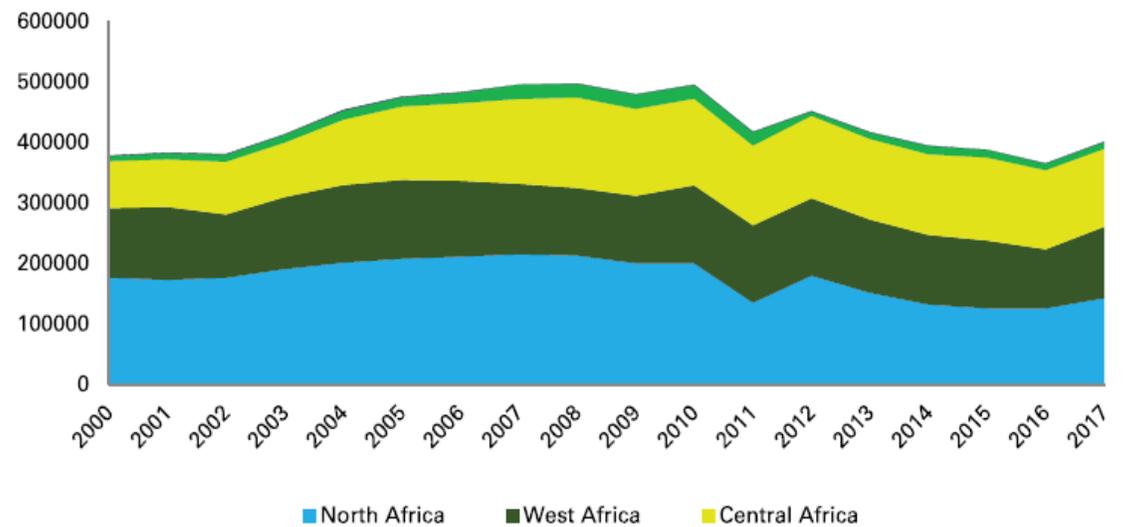
Charcoal production from 2000 to 2017 by region (kt)



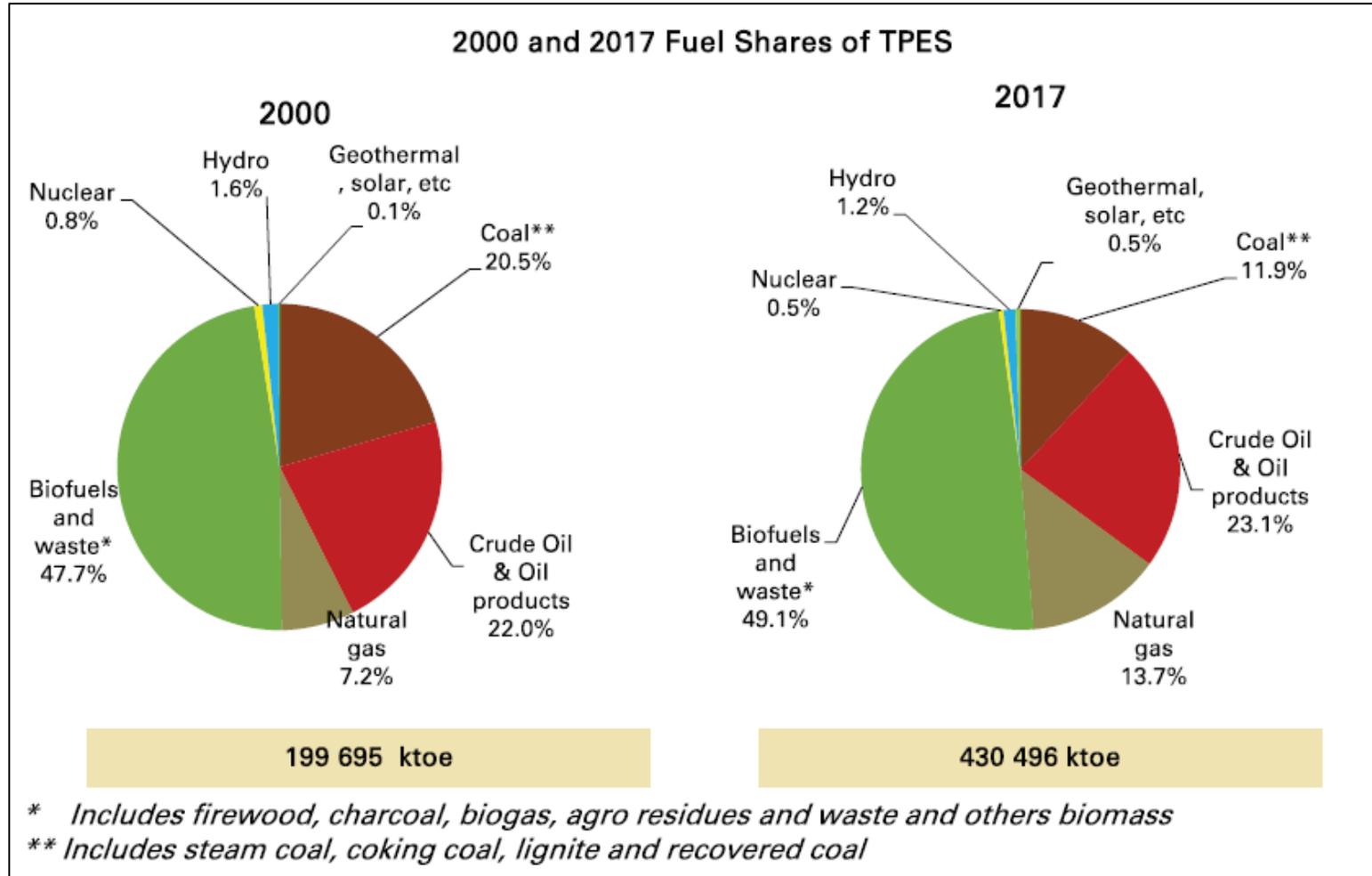
Natural gas production from 2000 to 2017 by region (TJ)



Crude Oil* Production from 2000 to 2017 by region (kt)



Energy Supply in Africa 2000 – 2017

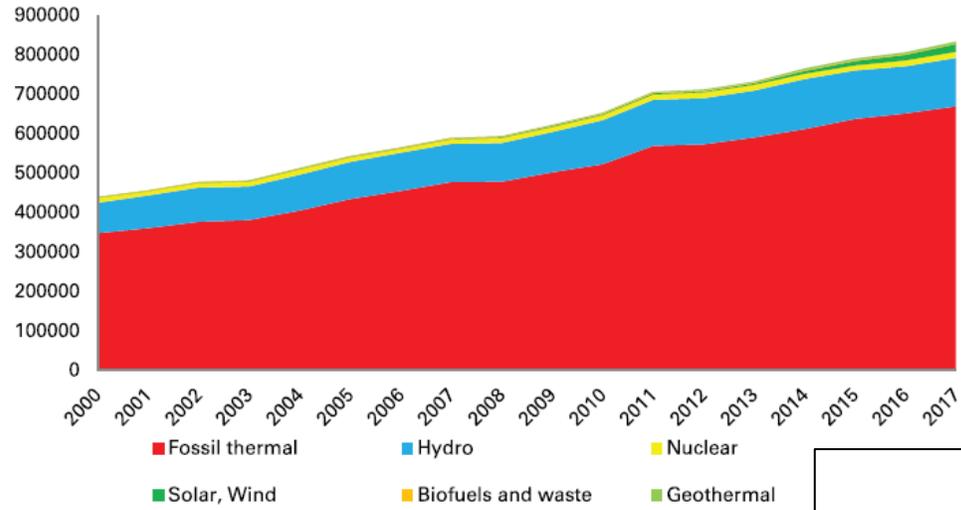


Source: AFREC Key Africa Energy Statistics (African Union, 2019)

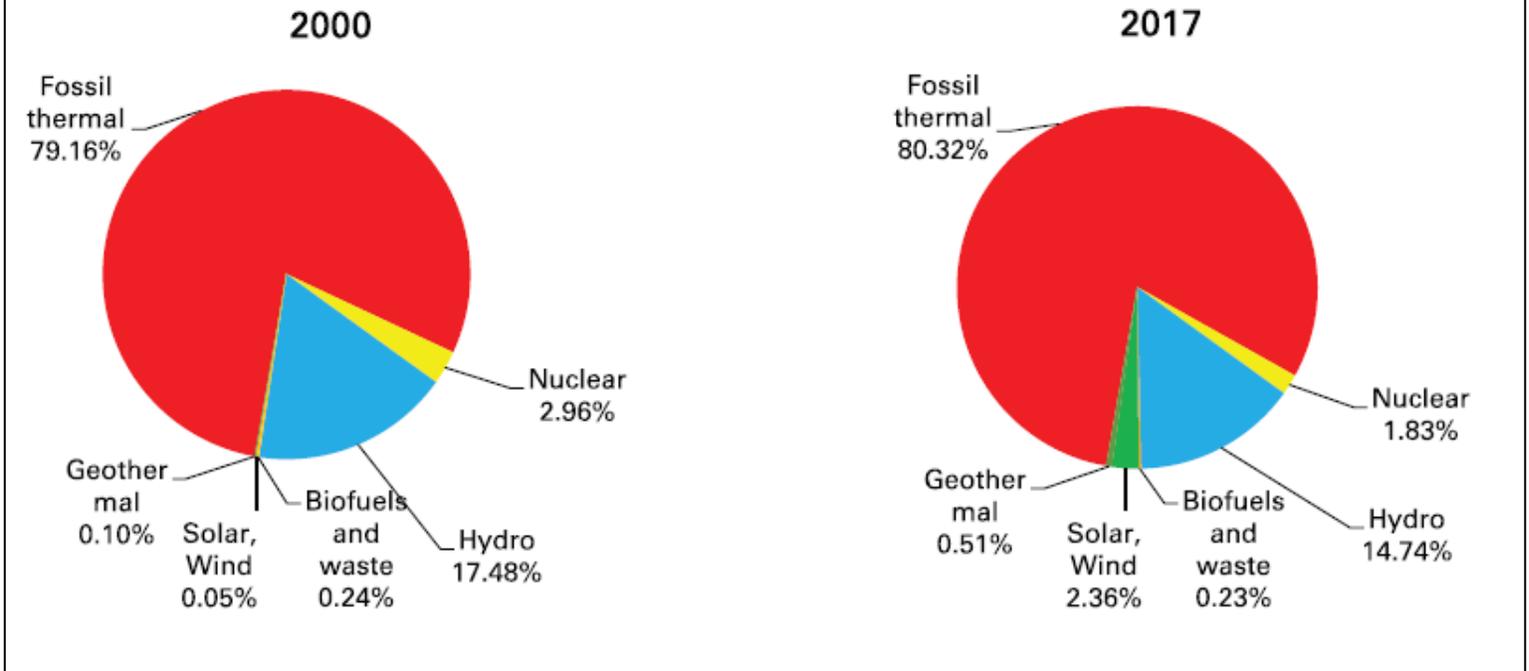


ELECTRICITY GENERATION BY FUEL

Electricity Generation from 2000 to 2017 by fuel (GWh)

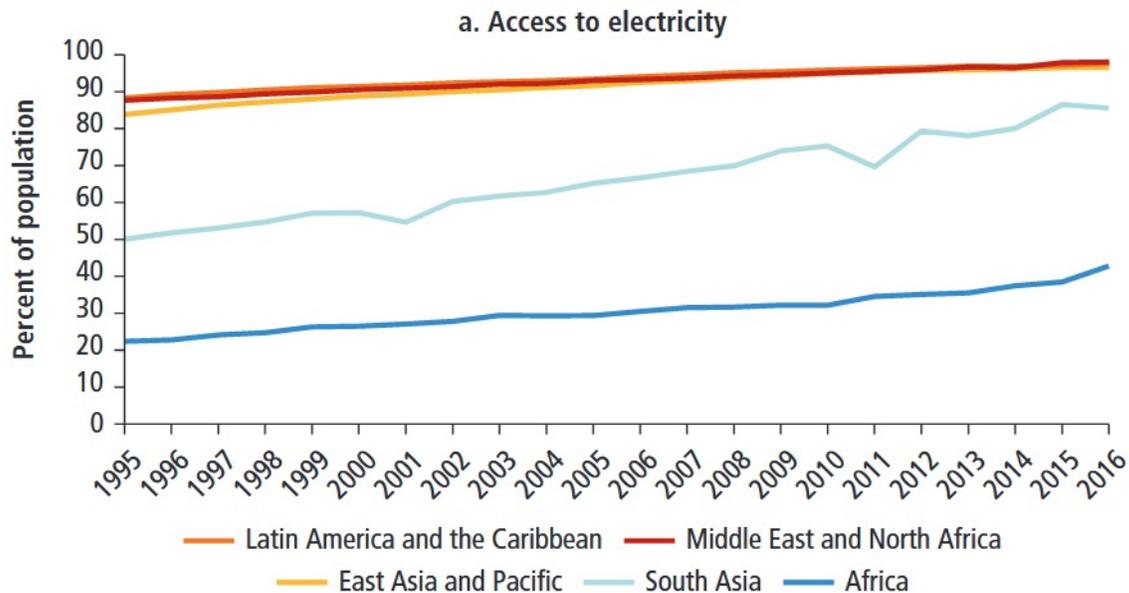


2000 and 2017 Fuel Shares of Electricity Generation

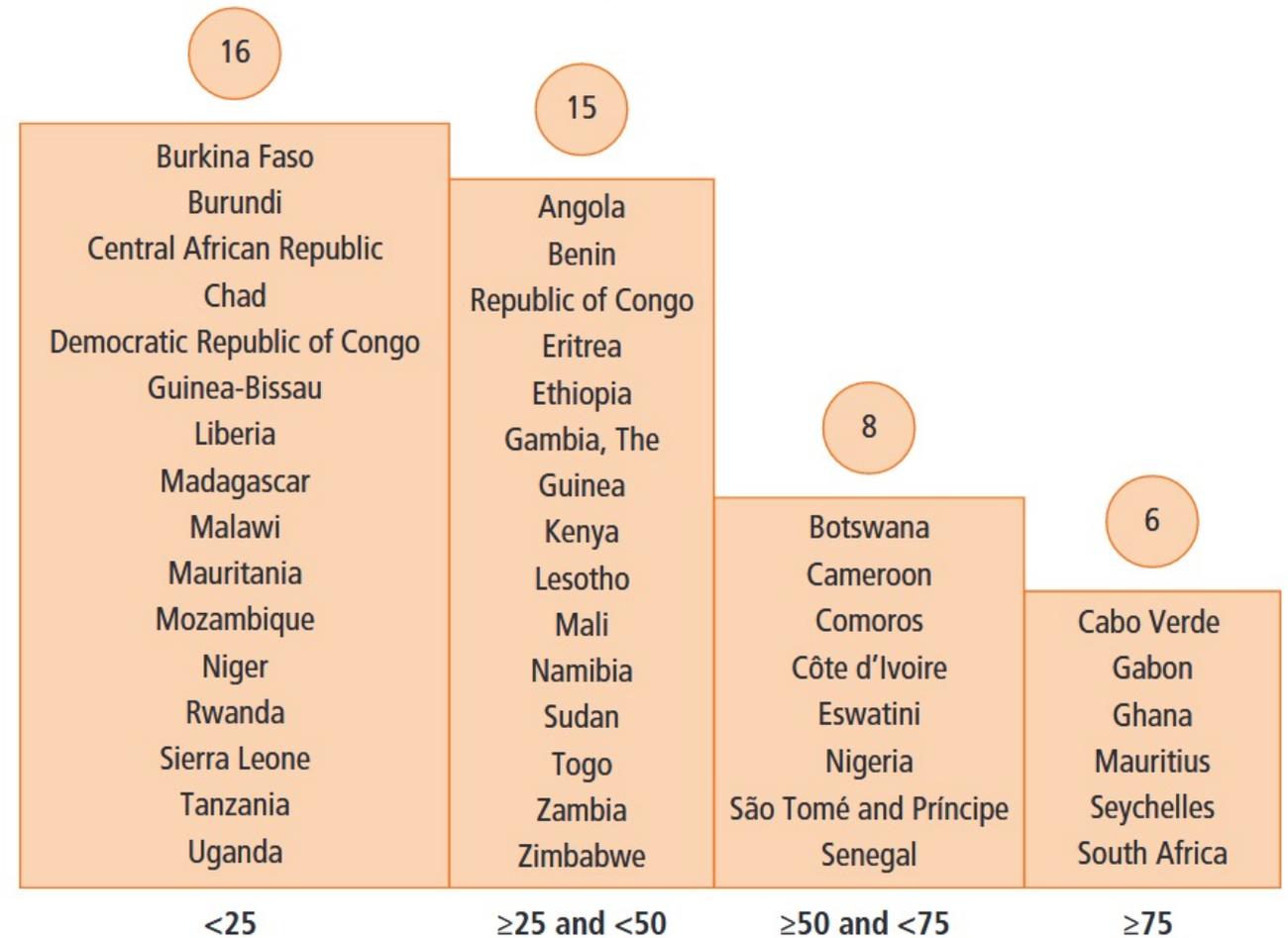


World Bank's *Electricity Access in sub-Saharan Africa* report showed that access in this region is the lowest in the world (43%, half of global average).

*The lack of access to electricity primarily constrains modern economic activities, provision of public services, and quality of life. In addition, it severely limits adoption of emerging technologies in sectors such as banking, education, agriculture, and finance that could otherwise alleviate some of the core challenges facing Africans, such as low productive employment opportunities and limited healthcare.*³



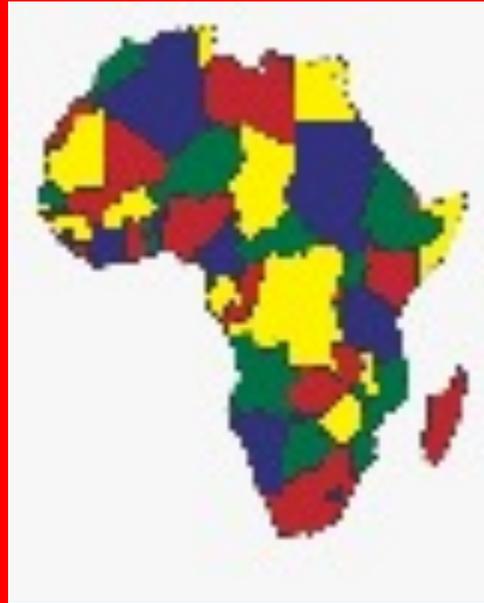
b. Households with electricity, latest available data (percent)



3. Nirav Patel 'Electricity access in Africa' 29 March 2019, available at <https://www.brookings.edu/blog/africa-in-focus/2019/03/29/figure-of-the-week-electricity-access-in-africa/>.

The two key thrusts of the energy transition in Africa

Moving rapidly from plant-based energy sources to modern energy services based on renewables (solar PV, battery, wind, wave, geothermal)



Ensuring that any further development of oil, gas and coal resources on the continent TRULY BENEFITS THE PEOPLE OF AFRICA (financial instruments for keeping oil/gas in the ground; dangers associated with new oil and gas projects.)

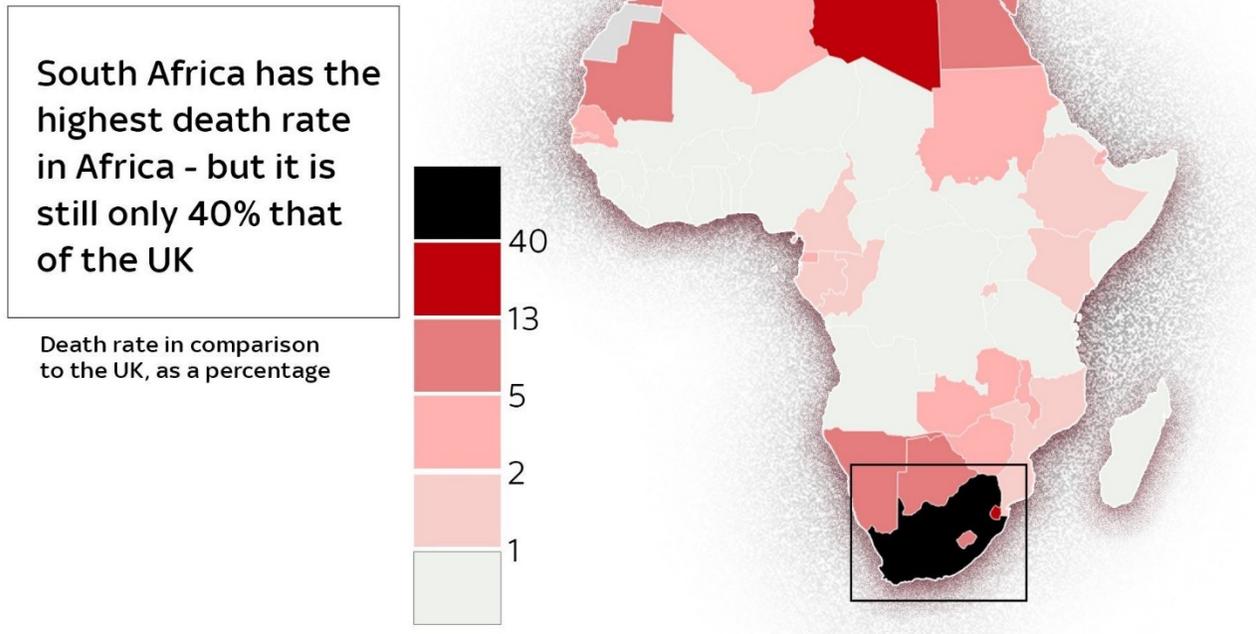
New oil and gas projects in Africa

Project Name	Estimated Reserves	Owners/Investors
Mozambique LNG Project	60 trillion cubic feet	Formerly Anadarko, now Total, Mitsui & Co., ONGC, ENH, Bharat, PetroResources, PTTEP and Oil India Ltd
Rovuma LNG, Mozambique	85 trillion cubic feet	Exxonmobil
Coral South LNG, Mozambique	16 trillion cubic feet	Eni through Eni East Africa (EEA) (70% interest). Partners are Portugal's Galp Energia, South Korea's Kogas and Mozambique's Empresa Nacional de Hidrocarbonetos (ENH) (10% interest each). China National Petroleum Corporation (CNPC) holds a 20% indirect interest through EEA.
Tanzania LNG Liquefaction Plant (Likong'o-Mchinga LNG Project)	57 trillion cubic feet (and an additional 29.5 tcf located offshore)	Equinor, Shell, ExxonMobil, Ophir Energy and Pavilion Energy
Ogidigben Gas Revolution Industrial Park, Nigeria	18 tcf gas reserves + construction of refinery and petrochemical complex	Nigerian National Petroleum Corporation (government-owned)
Etan and Zabaza oil fields, Nigeria off-shore	500 million barrels of oil equivalent	Eni, Shell
Dangote Refinery and Polypropylene Plant, Nigeria	650 000 barrel per day oil refinery and petrochemical complex	Dangote Group

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Kavango Oil Basin, Namibia	Not yet available	ReconAfrica, Namibia Petroleum

A COVID disrupted Africa



Approx. 4.7 million infections and 128 000 deaths. Has Africa been spared?

- Early lockdowns
- Age
- Weather
- Cross-reactivity
- Under-reporting

A COVID disrupted Africa

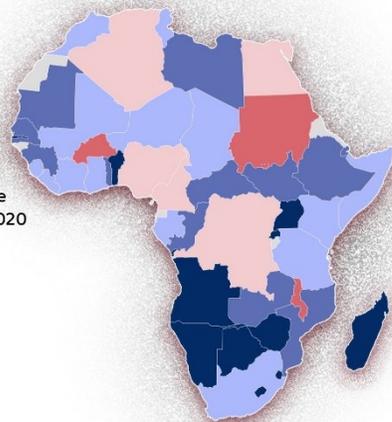


At least 40 African countries entered their highest level restrictions before they saw their 10th death

The UK saw more than 180 deaths before it went into full lockdown on 23 March 2020



Time before or after the 10th death countries entered their highest level restrictions



African Union

AFRICAN UNION ENERGY
African Energy Commission
Commission Africaine de l'Energie

The impact of COVID-19 on African Oil Sector

A special report by AFREC on the implications on African Countries

May 2020

Latest World Economic Outlook Growth Projections

	ESTIMATE	PROJECTIONS	
	2020	2021	2022
<i>(real GDP, annual percent change)</i>			
World Output	-3.5	5.5	4.2
Advanced Economies	-4.9	4.3	3.1
United States	-3.4	5.1	2.5
Euro Area	-7.2	4.2	3.6
Germany	-5.4	3.5	3.1
France	-9.0	5.5	4.1
Italy	-9.2	3.0	3.6
Spain	-11.1	5.9	4.7
Japan	-5.1	3.1	2.4
United Kingdom	-10.0	4.5	5.0
Canada	-5.5	3.6	4.1
Other Advanced Economies	-2.5	3.6	3.1
Emerging Markets and Developing Economies	-2.4	6.3	5.0
Emerging and Developing Asia	-1.1	8.3	5.9
China	2.3	8.1	5.6
India	-8.0	11.5	6.8
ASEAN-5	-3.7	5.2	6.0
Emerging and Developing Europe	-2.8	4.0	3.9
Russia	-3.6	3.0	3.9
Latin America and the Caribbean	-7.4	4.1	2.9
Brazil	-4.5	3.6	2.6
Mexico	-8.5	4.3	2.5
Middle East and Central Asia	-3.2	3.0	4.2
Saudi Arabia	-3.9	2.6	4.0
Sub-Saharan Africa	-2.6	3.2	3.9
Nigeria	-3.2	1.5	2.5
South Africa	-7.5	2.8	1.4
Memorandum			
Low-Income Developing Countries	-0.8	5.1	5.5

Source: IMF, *World Economic Outlook Update*, January 2021

Note: For India, data and forecasts are presented on a fiscal year basis, with FY 2020/2021 starting in April 2020. India's growth projections are -7.6 percent in 2020 and 11.0 percent in 2021 based on calendar year.

The debt crisis and the pandemic's effect on infrastructure spending

SUB-SAHARAN AFRICA

(US\$ billion, unless otherwise indicated)

	2009	2015	2016	2017	2018	2019
Summary external debt data by debtor type						
Total external debt stocks	266	439	474	543	571	625
Use of IMF credit	20	19	19	20	21	23
Long-term external debt	203	359	399	458	484	565
Public and publicly guaranteed sector	149	251	283	336	355	392
Public sector	148	251	283	336	354	392
of which: General government	134	221	248	299	317	356
Private sector guaranteed by public sector	1	0	0	0	0	0
Private sector not guaranteed	54	108	116	122	129	143
Short-term external debt	43	60	57	65	66	68
Disbursements (long-term)	25	55	61	77	79	79
Public and publicly guaranteed sector	18	33	45	55	52	57
Public sector	18	33	45	55	52	57
of which: General government	14	28	34	49	46	54
Private sector guaranteed by public sector	0	0	0	0	0	0
Private sector not guaranteed	7	22	16	22	27	22
Principal repayments (long-term)	11	29	27	30	44	38
Public and publicly guaranteed sector	8	22	14	15	26	20
Public sector	8	22	14	15	26	20
of which: General government	4	18	9	10	22	16
Private sector guaranteed by public sector	0	0	0	0	0	0
Private sector not guaranteed	2	7	13	15	18	18
Interest payments (long-term)	4	11	12	12	16	17
Public and publicly guaranteed sector	3	7	8	8	11	13
Public sector	3	7	8	8	11	13
of which: General government	3	6	7	7	10	11
Private sector guaranteed by public sector	0	0	0	0	0	0
Private sector not guaranteed	1	4	4	4	4	4

"Covid-19 had an impact on both the revenue and expenditure side of public finance and money that governments were going to put forward for investment in infrastructure will no longer be available."

Dr Ashenafi Fanta, University of Stellenbosch Business School

[Implications of Covid-19 on infrastructure finance in Africa \(usb.ac.za\).](https://usb.ac.za/implications-of-covid-19-on-infrastructure-finance-in-africa/)

Conclusion

- COVID-19 has made the need for an African energy transition all the more imperative
- There is a pan-African vision for modern energy services based on renewable sources of energy already on the table with supporting institutions.
- The people of Africa must ensure they are not derailed from achieving this vision by vested interests and policy distractions.

Waiting game

Covid-19, when will widespread vaccination coverage be achieved?

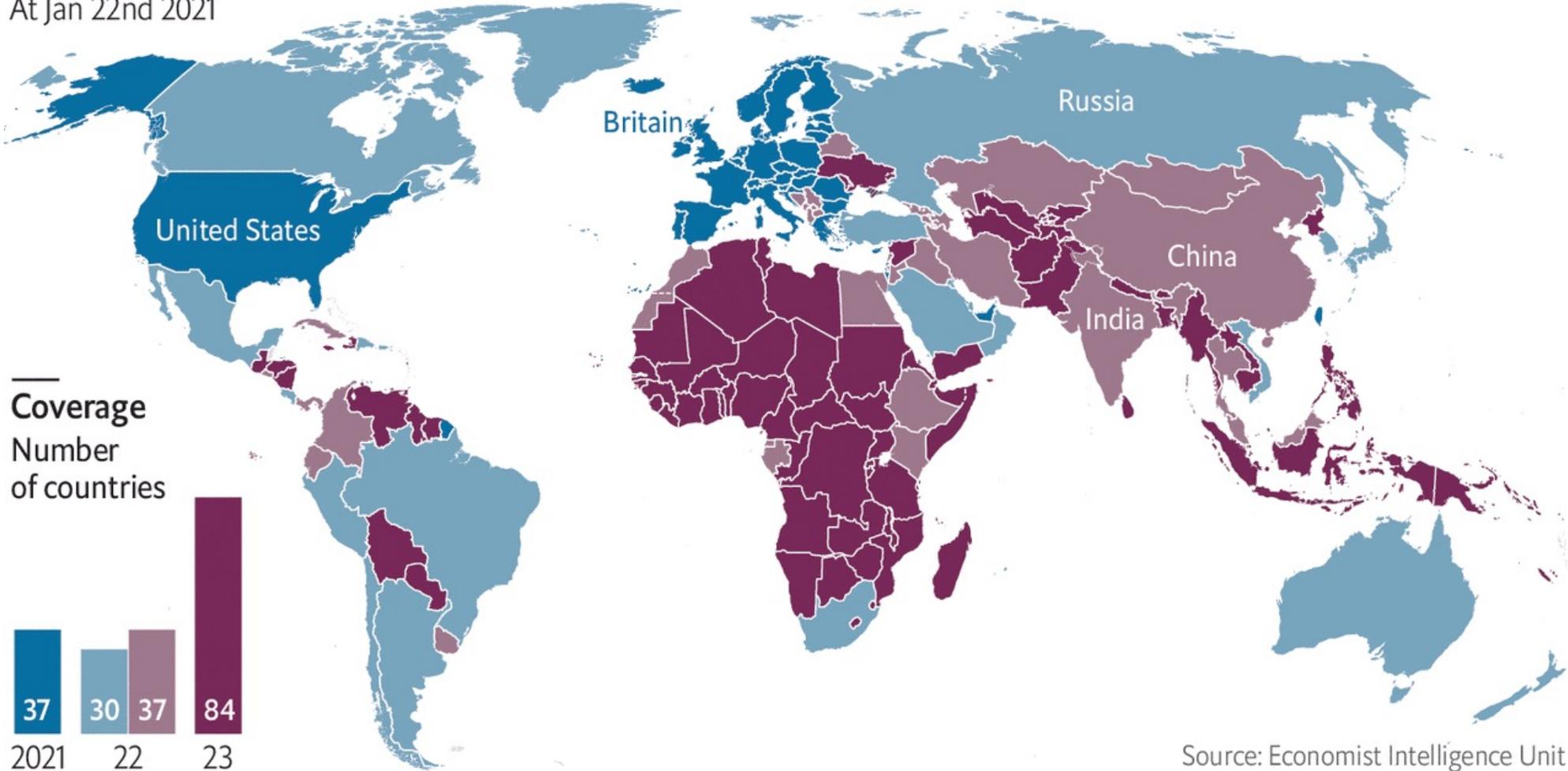
Late 2021

Mid 2022

Late 2022

from early 2023

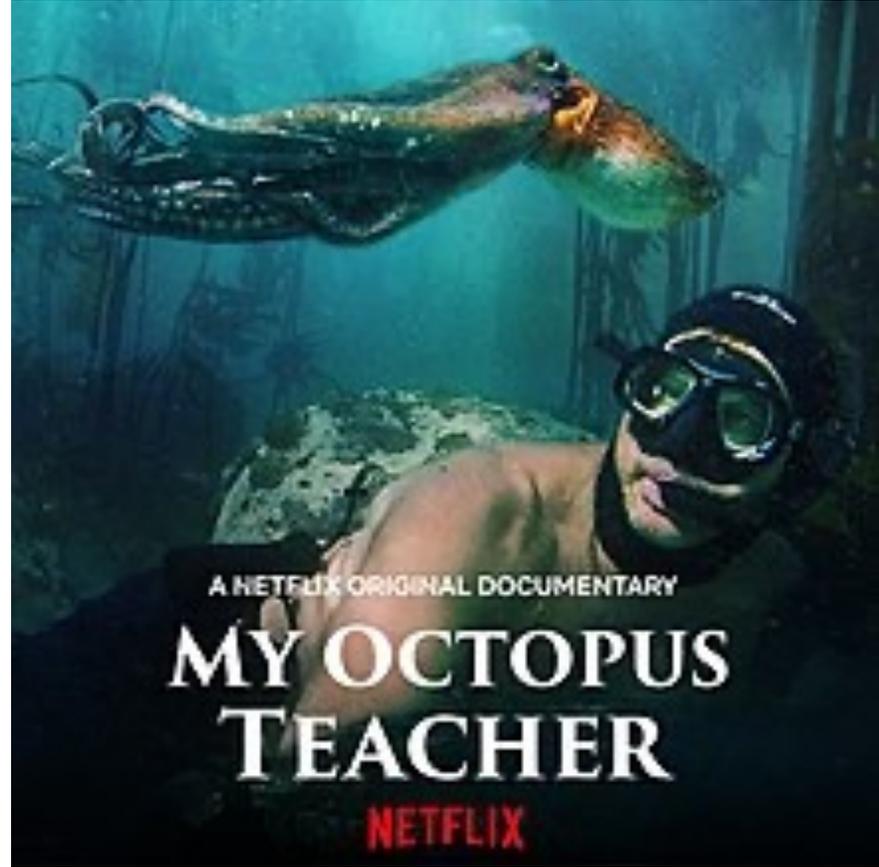
At Jan 22nd 2021



Source: Economist Intelligence Unit

The Economist

Source: The Economist, 'Vaccine nationalism means that poor countries will be left behind', available at <https://www.economist.com/graphic-detail/2021/01/28/vaccine-nationalism-means-that-poor-countries-will-be-left-behind>



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MY OCTOPUS TEACHER

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