Africa Business forum 2020

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On Sustainable Development Goal 7

The "SDG7 Initiative for Africa": Accelerating clean energy investments for access and climate ambition in Africa

United Nations
Economic Commission for Africa

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Summary

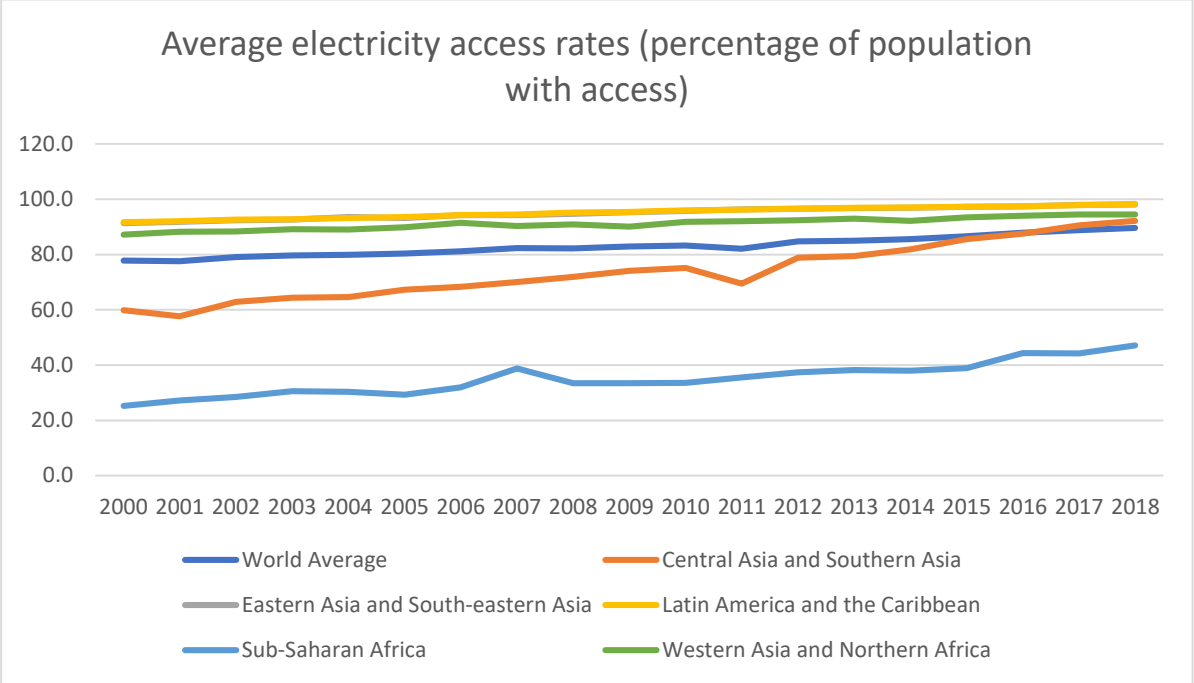
Climate change is causing unprecedented variations in the frequency and magnitude of extreme weather events: floods, droughts and heatwaves. How African countries prepare for and manage these extreme events will be fundamental to the performance of their economies and realization of their development aspirations as embodied in various national development plans, the United Nations 2030 Agenda for Sustainable Development and the African Union's Agenda 2063. Another key factor that will determine the attainment of Africa's development objectives is how the continent responds to its increasing need for access to adequate, secure and reliable energy services to industrialize, trade, provide better health and education services, reduce poverty and increase inclusion, boost economic growth and cater for population growth, a growing middle class, increasing urbanization and climate change.

To address these challenges and spur inclusive and resilient economies in Africa requires new and innovative approaches to leverage limited public resources against a background of competing demands for resources to mobilize the needed investments, particularly from the private sector. The Economic Commission for Africa (ECA) conceived the "SDG7 Initiative for Africa" to achieve this. The initiative is a mechanism built on three pillars - sustainability, governance and finance – to bring together countries, financiers and developers of clean-energy projects to align interests and combine scale and speed to fast-track financing from the private sector for deployment of clean energy in Africa. The initiative provides the mechanism through which the private sector can play a key role in supporting countries to close their energy-access deficits, meet increasing energy demands and contribute to climate action and ambition through enhanced nationally determined contributions to climate action (NDCs) in terms of the Paris Agreement. The initiative aims to crowd in financing from the private sector for over 10,000 megawatts (MW) of renewable electricity capacity in Africa by 2025.

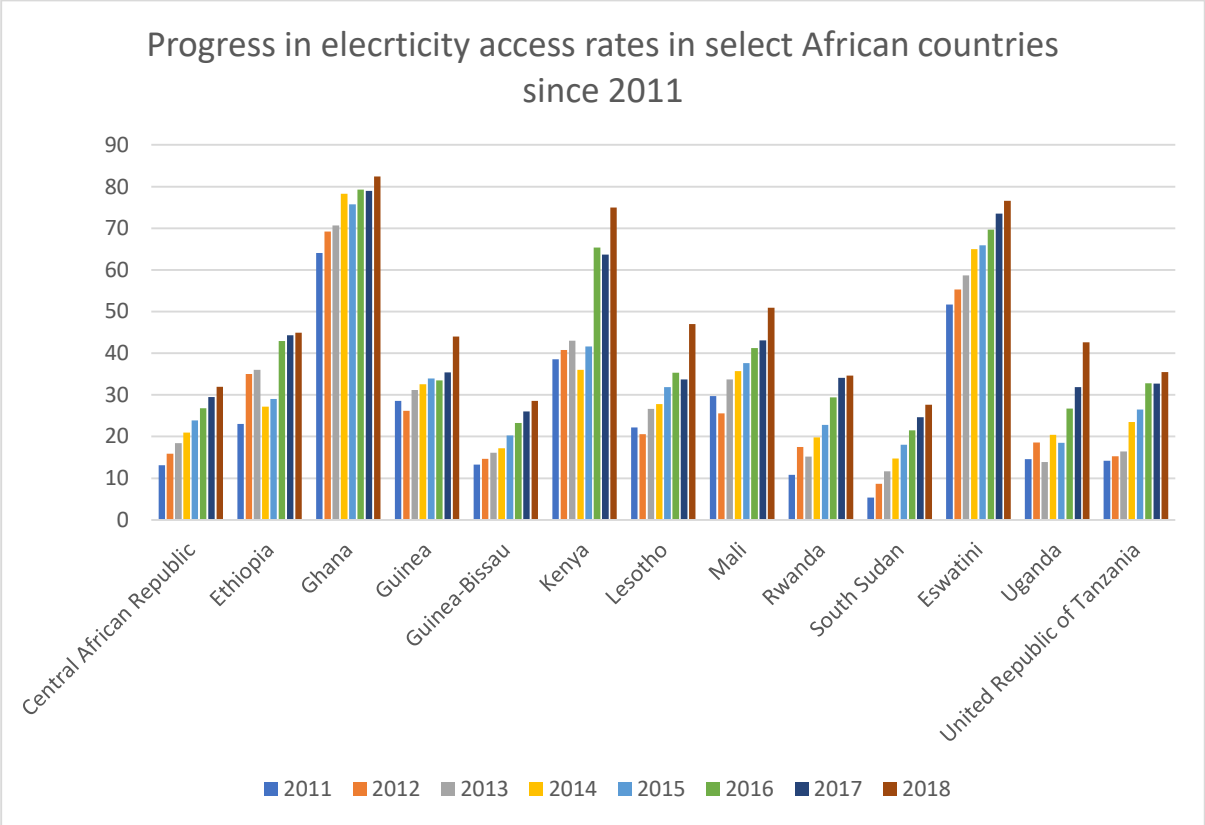
Africa's energy paradox

Africa's energy situation is a paradox of abundant energy resources (including hydro, solar, wind and geothermal energy) and a very high deficit in access to modern energy, with about 590 million people still lacking access to electricity. This makes Africa the least electrified region in the world (figure 1a) although significant progress is being made in some countries such as Ethiopia, Ghana and Kenya in recent years (figure 1b).

Figure 1
Energy access in Africa



(a)

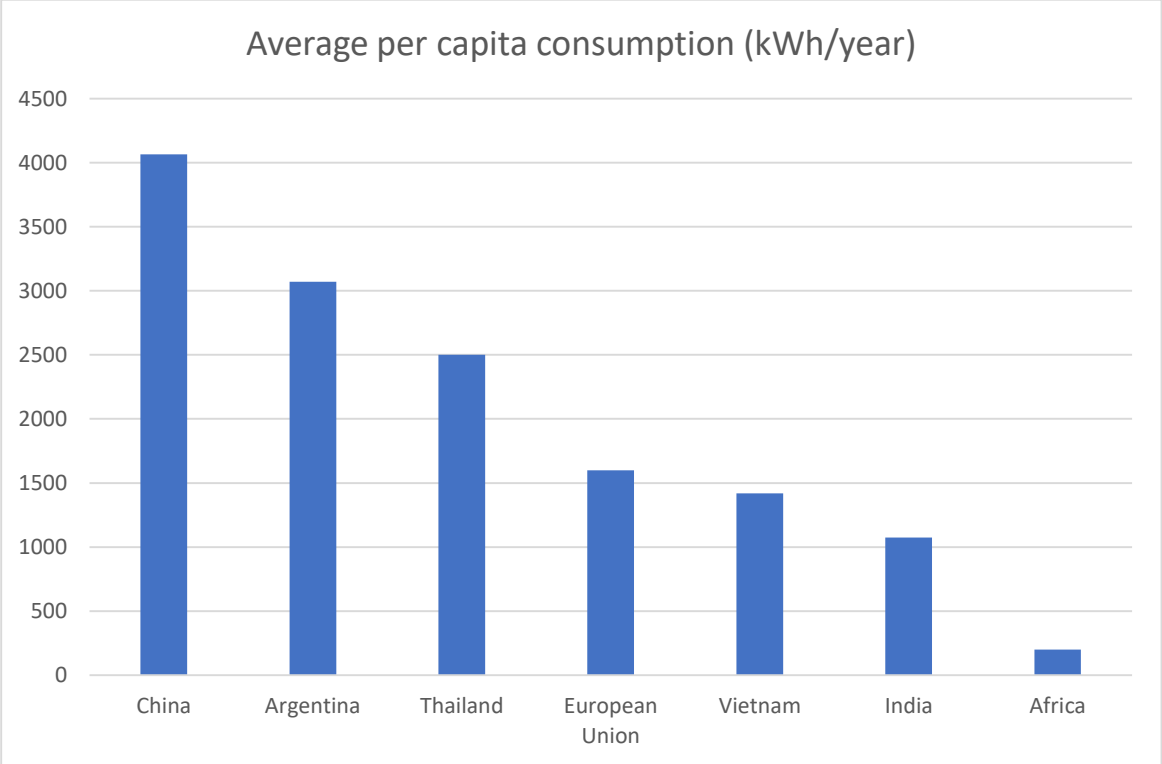


Compiled from Tracking SDG7 2019 (IEA, IRENA, UNSD, World Bank, WHO)

(b)

For those who have access to electricity, the quality and reliability are generally poor and the average per capita consumption of about 200 kilowatt-hours (kWh) per year is unacceptably low compared to other regions of the world (figure 2).[1] This ranges from per capita consumption of less than 100 kWh a year in countries such as Benin, Ethiopia and South Sudan and over 1,500 kWh a year in only a few countries such as Botswana, Egypt, Libya, Mauritius, Namibia and South Africa[2]. Access to reliable, secure and affordable energy services has huge development implications in key areas, such as education, health, agriculture and industry, needed for Africa's long-term development. For example, access to electricity enhances the opportunity for children to study, particularly in the evenings. This in turn increases the level of educational attainment and ensures the building of human capital at national levels in the long run. Ensuring access to energy for the provision of health services contributes towards a healthy and productive population. In agriculture, access to electricity can significantly enhance productivity, create productive uses of energy that empower women in particular, extend the value chain and enhance global competitiveness, inter alia.

Figure 2
Electricity consumption in Africa compared to select regions and countries



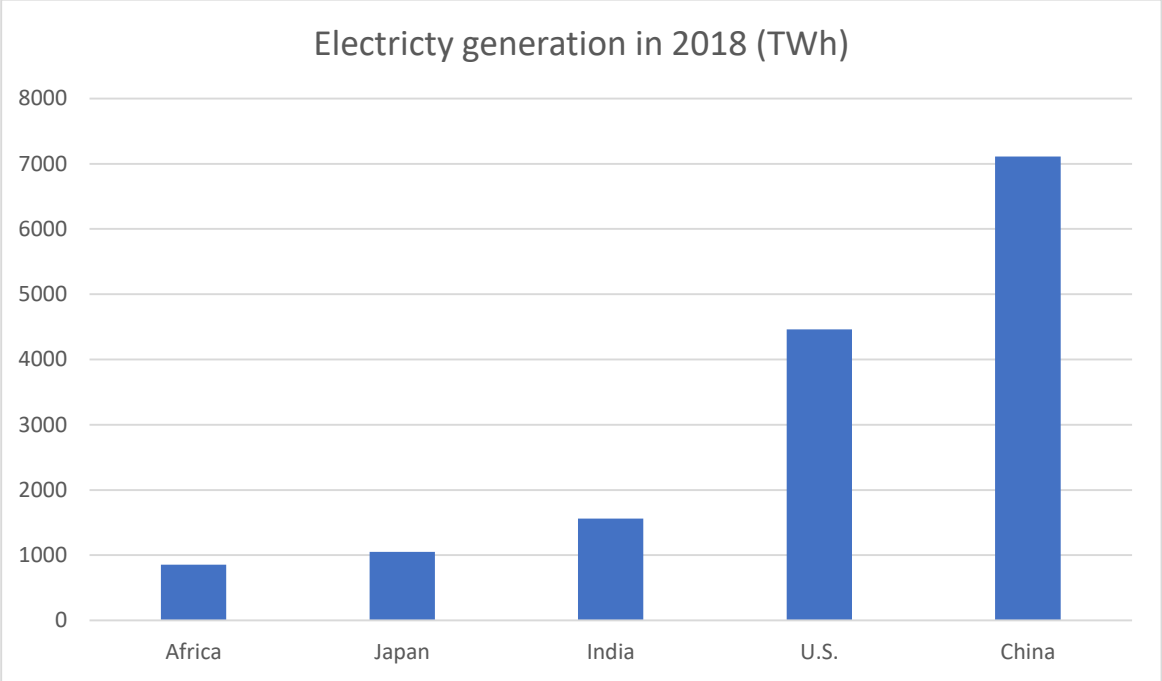
From World Bank Development Indicators

Tapping Africa's resources of renewable energy to power industrialization on the continent has so much potential for growth, employment and trade, especially in view of the Africa Continental Free Trade Area. However, the present situation is that unreliable, low-quality and expensive power supplies are hampering the competitiveness of the continent's

[1] This compares unfavourably to 1,600 kWh in the European Union, 1,075 kWh in India, 2,500 kWh in Thailand, 1,420 kWh in Vietnam, 3,070 kWh in Argentina and 4,066 kWh in China, for example.
[2] See, for example, World Development Indicators data, available from-https://datacatalog.worldbank.org/dataset/world-development-indicators.

tradable goods industries. Although the potential for all forms of renewable energy resources[3] is very high, the current total installed capacity for electricity is only about 230 GW, which is far less that India's capacity of 338 GW or Japan's 297 GW.[4] South Africa's installed capacity of 54.2 GW[5] is approximately equal to the installed capacity in the rest of Africa, excluding North African countries. This compares to the new solar PV capacity that China added in 2017 alone.[6] This is just under the installed capacity of Indonesia, 3% of China's capacity and 6% of that of India. In terms of generation, the BP *Annual Statistical Review 2019* shows that Africa generated only 854 terawatt-hours (TWh) of electricity from all sources. This compares to Japan's generation of 1,052 TWh, India's of 1,561 TWh, the United States of America with 4,461 TWh and China which generated 7,111 TWh in the year (figure 3).

Figure 3
Electricity generation in Africa compared to select countries



From BP Annual Statistical Review 2019

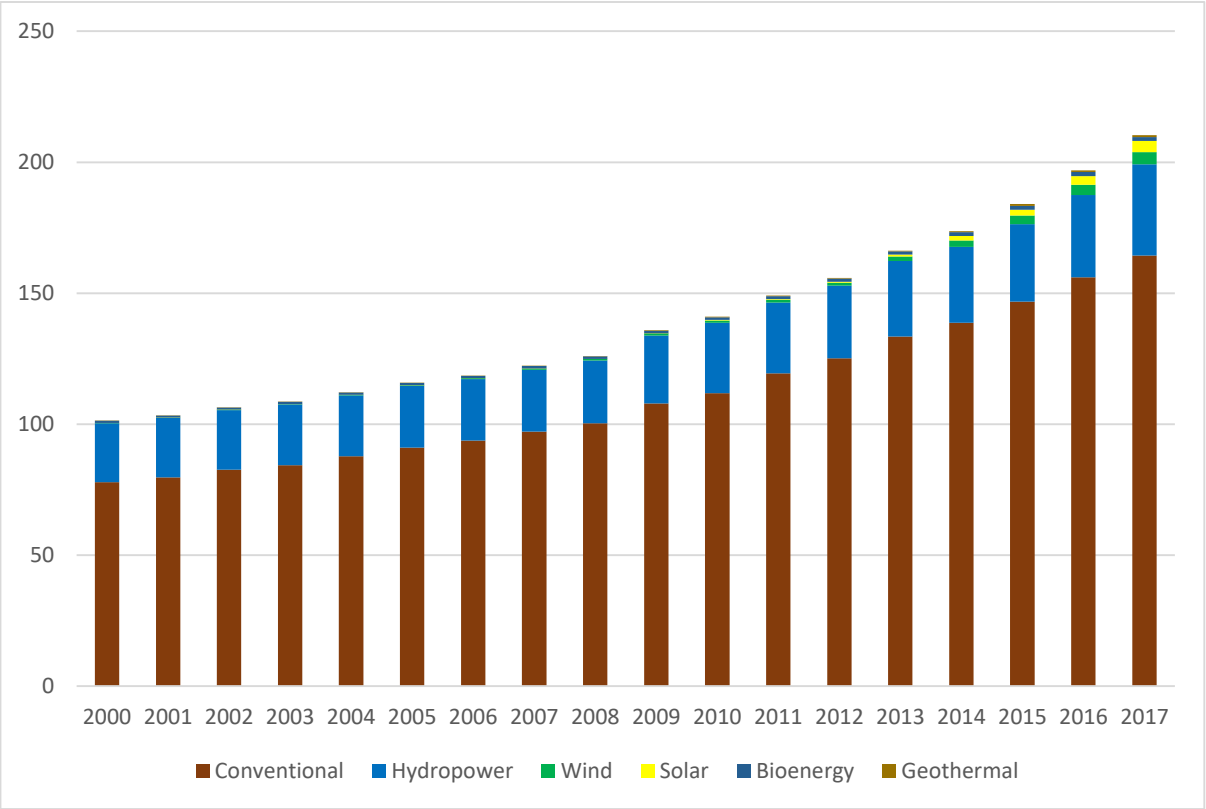
[3] Some estimates indicate power capacity potentials of 10 TW of solar, 350 GW of hydropower, 110 GW of wind and over 15 GW of geothermal (https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Brochure_New_Deal_2_red.pdf)
[4] See, for example, https://www.eia.gov/beta/international/data/browser
[5] Department of Mineral Resources and Energy, Republic of South Africa, 2019. Integrated Resource Plan 2019.
[6] See, for example, https://www.researchandmarkets.com/reports/4855772/solar-photovoltaic-pv-market-update-2019

A compelling case for clean energy investments in Africa

There is a compelling case for private-sector investments in clean energy in Africa, which would help achieve the climate ambition of countries while attaining secure, reliable and clean and affordable energy goals with reduced stress on public resources:

- Energy demand in Africa is increasing and will increase even more dramatically owing to various factors such as population growth, a growing middle class, industrialization, trade, urbanization and climate change.
- There is an urgent need to close the energy deficit on the continent rapidly. There is realistic potential to increase the installed capacity (presently 230 GW- see figure 4) by adding between 110 GW and 200 GW of renewable power by 2030 (figure 5), representing an investment opportunity of close to $400 billion.
- Africa has an abundance of various forms of renewable energy resources, particularly solar, hydro, wind and bioenergy. These are competitive on costs compared to non-renewable sources because the technology costs for producing clean energy worldwide continue to decline and recent independent power producer tenders on the continent have resulted in some of the cheapest tariffs in the world – e.g. $0.06 per kWh for the 72 MW World Bank/IFC Scaling Solar programme project in Zambia.
- Notwithstanding the dramatic increase in the deployment of non-hydro renewable power in Africa over the last five years (figure 6), the share of renewables in the power mix of many African countries remains well below the potential (figure 7).
- Africa is thus the key global opportunity for transformative deployment of clean energy. If the enabling policy and regulatory environments are supportive, the investment case for the private sector is compelling. This is particularly important at a time when public resources are becoming increasingly constrained with competing demands from other sectors such as health and education. The investment case is further strengthened by low interest rates globally, availability of capital, a history of good returns on investment from projects in Africa, and the high potential for energy trading through the existing power pools and interconnections under development.

Figure 4
Cumulative installed electricity capacity in Africa by source (MW)



Compiled from various sources, including the databases of GlobalData, Enerdata and the International Renewable Energy Agency (IRENA).