



On December 13th 2019, the conference on “China-Africa energy cooperation under the Belt and Road Initiative presented an opportunity to forge durable partnerships that can stimulate investments, transfer of knowledge, skills and technology required to promote access to renewable energy in Africa.

DEBT TRAP HOAX ASIDE, CHINA’S TECHNOLOGY WILL CLOSE AFRICA’S ENERGY GAP

PETER KAGWANJA

On December 13, 2019, President Uhuru Kenyatta launched the new Garissa Solar Power Plant, Africa’s largest solar energy plants consisting of 206,232 solar photovoltaic panels sitting on 85 hectares of land and raising Kenya’s energy production capacity by 54 megawatts. Concurrently, the conference on “China-Africa energy cooperation under the Belt and Road Initiative” co-hosted by the Africa Policy Institute and the Chinese energy giant, the China National Petroleum Corporation (CNPC) and its think tank, the Economics & Technology Research Institute (CNPC-ETRI) was held in Nairobi. The two events, reflected the continents needs of a broad-based strategic partnership to secure investments and technology to close the energy gap, exit the squalor of energy have-nots and join the league of rich energy haves.

The internationally acclaimed Nigerian writer Chinua Achebe persuaded us that the trouble with Africa “is simply and squarely a failure of leadership.” But leadership failure is as ubiquitous across nations and civilizations as the oxygen we breathe. In the 21st century, the trouble with Africa is simply and squarely the failure of its leadership to invest in energy. The result is a frightfully widening energy gap, responsible for poverty, joblessness and underdevelopment.

Beyond the sino-phobic debate on debt trap, China’s colonization or the new scramble for Africa, the continent direly needs new a broad-based strategic partnership with China to secure investments and technology to close the energy gap, exit the squalor of energy have-nots and join the league of rich energy haves.

For too long, African leaders and their economic advisers have walked on their heads, and must re-read and re-write Adam Smith’s *Wealth of Nations* if Africa is truly to claim the 21st century.

Truth be told, it is not raising the Gross Domestic Product (GDP)—the total value of goods produced and services provided in a country during one year—is not the universal measure of wealth and progress of nations. Rather, it is the per-capita energy use. Africa is not just poor, its Kilowatt hour per capita is extremely low, and urgent action is needed to break the vicious cycle.

This was the observation of a conference on “China-Africa energy cooperation under the Belt and Road Initiative” co-hosted by the Africa Policy Institute and the Chinese energy giant, the China National Petroleum Corporation (CNPC) and its think tank, the Economics & Technology Research Institute (CNPC-ETRI) in Nairobi on December 13, 2019.

Manifestly, Africa is on the extreme lower end of the global energy divide between the energy-haves and energy have-nots.

More than half of about 1.2 billion people without access to modern energy services globally, are in Africa. The continent has 16% of the world’s population, but consumes only 3.3% of global primary energy. Africa produces only 9.1% of total global oil production, but accounts for 4.2% of total global oil consumption. And the gap is widening. By 2050, Africa will be the world’s most populous continent, but its demand of electricity will grow at a minimal rate of 4 percent per year through to 2040. At this rate, the International Energy Agency (IEA) estimates that about 600 million people in Sub-Saharan Africa will be already be without electricity by 2030. By the middle of the 21st century, Africa’s demand for cooling will surpass the demand for heating if its plans for value-addition and to get products to the market while still fresh work.

Weak access to electricity is one reason why Africa has been left behind by other emerging economies in the global South. Today, China has managed to give 100 percent of China’s 1.4 billion people have access to electricity. 97 percent and 82 percent of Brazilians and Indians, respectively, are connected to the electric grid.

Only countries in North Africa have managed to give 97 percent of their people access to electric power. The rest of Africa is largely below 50% access rate: West Africa (47%), Southern Africa (43%), Central Africa (25 percent) and East Africa (23 percent).

The rare exception in Kenya is an exception. Kenya has raised the rate of access to electricity from 25% in 2010 to 76 percent by 2019, and plans to provide 95 percent of its people access by 2020. On December 13, President Uhuru Kenyatta launched the new Garissa Solar Power Plant, one of Africa’s the largest solar energy plants consisting of 206,232 solar photovoltaic panels sitting on 85 hectares of land and raising Kenya’s energy

production capacity by 54 megawatts. But with the country's power generation capacity standing at less than 3,000 megawatts, its ambition to industrialize will remain a pipedream. Low power supply has led to higher cost of governance and doing business in Kenya as elsewhere in Africa.

Worse still, Africa continues to be the leading consumer of 'dirty energy'. In much of Africa, 47% of overall power generation is from coal, a non-renewable resource. Three quarters of Africa energy requirements are met by fossil fuels and it is expected this will triple by 2040. Of all energy sources, Africa largely consumes oil (42% of total energy consumption) compared to gas (28%), coal (22%), hydro (6%), renewable energy 1% and nuclear energy (1%).

Africa needs China's technology to tap into its fabulous and diverse sources of renewable energy and boost its clean energy production capacity. Africa is one of the largest sources of clean energy (hydro, solar, wind, geothermal, tidal, and solid biomass). But this is completely under-developed. Africa has tapped only 1% of its geothermal and 10% of hydro-electric potential. The geothermal energy potential of East Africa's Rift Valley alone is estimated at 15,000 megawatts.

China's technology and development assistance is transforming Africa's energy market.

So far, China's technology and investment in energy in Africa has triggered Africa's growth, with the oriental civilization becoming an integral part of the "Africa Rising" narrative. China's \$13 billion infrastructural investment in energy between 2010 and 2015 led to a 30 percent increase in power generation capacity of Africa, from 95 gigawatts (GW) to 115GW.

The policy and investment framework upon which China and Africa are partnering in the energy sector rests on two planks. First is the Forum for China-Africa Cooperation (FOCAC), formed in

2000. FOCAC's 2015 summit in Johannesburg resolved to close Africa's energy gap and to align China-Africa relations to Africa's power demand for clean and green alternatives. The 2018 Summit in Beijing dedicated the lion's share of the \$60 billion pledge of Chinese financial support to Africa to energy infrastructure projects.

Second is the Belt and Road Initiative (BRI), China's global development strategy adopted in 2013. In April 2019, the official report on BRI energy interconnection highlighted that energy investments in BRI countries will reach \$27 trillion by 2050, with \$7 trillion alone going to power grid construction and the rest distributed across other energy sectors including oil and gas, geothermal and nuclear. This will create over 200 million new jobs created in the process.

Under the BRI, Africa has signed win-win agreements and contracts that will make energy work for Africa while providing Chinese investors with attractive and rewarding opportunities on the continent. In September 2019, the African Energy Chamber secured over \$1.4 billion in intentions to invest in Africa's bankable projects in mining, oil and gas, power and renewable energy.

Within Africa, Agenda 2063 is the ultimate blueprint guiding China-Africa cooperation in the energy frontier. Specifically, its Africa Power Vision (APV) provides the framework to bridge Africa's vast infrastructure gap across transport, energy and water sectors as well as information and communication technologies.

Related to this is the Africa Renewable Energy Initiative (AREI) aimed at accelerating the explorations of the continent's huge renewable energy potential to achieve at least 10 gigawatts (GW) of new renewable energy generation capacity by 2020 and to realize the continent's potential to generate at least 300 GW by 2030.

Obviously, China is not a newcomer in Africa's energy market. However, its pivot to Africa as a source of its energy and a market for its energy technology has increased in the 21st century.

The September 11, 2001 terrorist attack in the United States of America that triggered China's policy-makers to reduce its reliance on the Middle-East supplies, which at the time supplied nearly 60 percent of its oil imports. This uncertainty fuelled Chinese's "go out and buy" policy as Chinese oil and resource companies moved into Africa, South America, and Central Asia to secure additional raw materials to avoid an energy lockdown.

The rise of China as the world's second—and perhaps the first—largest economy by 2014 has increased its energy use per capita per kilogram of oil equivalent from 465 by 2000 to 2,237 by 2014. China's energy use hit the 3,273.5 million metric tons of oil equivalent by 2018, making it the largest consumer of primary energy in the world.

Global insecurity, and uncertainty in the traditional oil markets in the Middle East has transformed Africa into the world's newest energy frontier.

Today, Africa possesses 7.5% and 7.1% of global oil and gas reserves, respectively. Before 2000, China's footprint in the energy sector in Africa was in gas and oil, limited to Sudan. It has since moved to offshore oil production in Angola and Nigeria, ventured into conflict prone and high risk countries such as Chad, Niger, Equatorial Guinea and Mauritania and is making inroads

into new oil producers such as Kenya, Uganda, Ethiopia, and Madagascar. Today, Chinese oil companies are operating in nearly 20 African countries.

Despite vexed debates on nuclear energy and technology, access to nuclear power, which is generated using plutonium or uranium, is Africa's best hope to accelerate the closing of its energy gap. The continent is rich in uranium with Nigeria, South Africa and Namibia ranking among the world's ten largest uranium resource-holders in the world.

Currently, South Africa is the only African country producing electricity from nuclear sources, contributing 5% to its electric grid. Egypt and Nigeria have small nuclear reactors, and Kenya and Namibia have explored possibilities of tapping into nuclear power for their domestic consumption.

Facing the future, the newly established Center for China-Africa Studies (CCAS) has to sustain the dialogue, generate and share cutting-edge research knowledge on China-Africa cooperation on energy to close Africa's energy gap.

Professor Peter Kagwanja is former Government Adviser and currently the Chief Executive of the Africa Policy Institute (API). This article is an excerpt of the keynote speech deliver during the Conference on "China-Africa Energy Cooperation Under the Belt and Road Initiative" convened by API and China National Petroleum Corporation (CNPC) and its research think tank Economics and Technology Research Institute (CNPC-ETRI) on December 13, 2019.

API Africa Research Notes Series publishes scientifically valid research outputs that cannot be considered as full research or methodology articles. Its aim is to provide a forum for sharing data, useful information and perspectives on topical issues of concern to the policy and research communities. Articles published under this series cut across disciplines, and include some short articles or opinion pieces that have already been published by the experts of the Africa Policy Institute. Some are brief publications, updates to previous work, abridged versions of research agendas or concept notes or brief reports of policy forums.



*<https://www.africapi.org/africa-research-notes/>
NHIF Parking Tower 5th Floor, Ragati Road
P. O. Box 34791 - 00100, Nairobi, Kenya*