



Energy Crisis in Africa

Examining Challenges and Solutions in Energy Development
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Executive Summary

Natasha Louis

The African continent has fallen behind in energy development and is struggling to catch up while facing the impending repercussions of climate change. According to the African Development Bank, at least [640 million](#) Africans have no access to electricity. Less than [40%](#) of African nations will acquire universal electricity access by 2050 due to countries neglecting energy planning and investments into the sector. This is the lowest access rate in the world. “Insufficient energy access manifests itself in hundreds of thousands of deaths annually due to the use of wood-burning stoves for cooking; handicaps the operations of hospitals and emergency services; compromises educational attainment; and drives up the cost of doing business.”

Energy development is critical in order for Africa to provide economic opportunities, education, and health access as the continent is expected to double its population by [2050](#) and reach over [2 billion](#) people by 2070, becoming the world’s most populous region. Africa has significant renewable energy potential, yet little of it is being utilised. In order to achieve energy access goals, investments must be at least [doubled](#) this decade. This is particularly difficult as nations endure rampant corruption and conflicts, which will hinder energy development and exacerbate multitudes of crises.

This report aims to analyse some of the most pertinent drivers of the energy crisis, their impacts, and possible solutions. This collection of analysis examines Africa’s place in the world before the energy crisis, economic factors, ongoing political issues, and future prospects of clean energy transitions. This report attempts to explore the complications of energy access in Africa and provides recommendations that could significantly alter the continent’s trajectory.



Energy Accessibility in Africa: Background & State of Play

Camille Victor

Central to economic development and quality of life; the importance of having access to electricity cannot be overstated. Even before the global energy crisis, Africa had by far the lowest continental electrification rate - 600 million Africans lacked access to power. A 2019 [report](#) from the World Bank points to how far Africa fell behind other regions, indicating that Africa's 43 per cent electrification rate was half of the global average of 87 per cent.

The report also reflected the striking contrast between North Africa and sub-Saharan Africa (SSA). Whereas [North Africa](#), [Mauritius](#), and the Seychelles were almost completely electrified, just 38.5 per cent of people in SSA had access to electricity. In rural regions, only 20.2 per cent of people had electricity. even in metropolitan regions, more than one-in-four individuals did not have access to power. This contrasts with rates of 100 per cent in the [majority](#) of industrialised countries (including the European Union and China) and over 85 per cent in India and developing nations in East Asia.

Sub-Saharan Africa is one of the only regions where, from 1990 to 2010, the amount of electricity consumed per capita fell. This was in sharp contrast to other rising economies, where consumption increased; electrification increased by 476 per cent in China, 115 per cent in the Arab world, 181 per cent in East Asia and the Pacific, and 135 per cent in India. This shows sustained underinvestment in power generation, transmission, and distribution throughout SSA, as well as economic stagnation resulting from low electrification, at a moment when its population was increasing rapidly.

Since 2013 the proportion of individuals without access to electricity has been [declining](#) in Africa. This was made possible by advancements achieved in nations, like Ghana, Kenya, Rwanda, and Senegal, that promoted off-grid projects and enacted strong regulations for access to energy. In 2019, Kenya led all of its East African neighbours in [expanding access](#) to electricity, and sought to attain universal access by 2022 with its ambitious Kenya National



Electrification Strategy. With access to power steadily increasing from 63.8 per cent in 2017 to 75 per cent in 2019, the Kenyan government appeared to be on the right path in achieving two major objectives: Connecting every home to the grid and using off-grid energy as part of a subsidised scheme that allows homeowners to pay 15,000 shillings per year, down from 35,000 shillings. But Kenya's rural, low-income districts continue to be challenging to electrify. Few homes are able and [willing](#) to pay 15,000 shillings annually, even in villages inside grid service regions, which might create a market for less expensive solar home systems. 47 percent of rural Kenyans are still without access to any form of energy. Kenya's population is also regularly cut off from power for days on end. The [fourth national blackout](#) in the past five years started on 4th March, 2023, once again raising questions around Kenya Power Lighting Company's ability to provide a stable power supply.

Beyond national initiatives to improve access to energy across the continent, various international projects and partnerships flourished in the previous decade, aimed at furthering clean energy access in Africa. The [Africa-EU Energy Partnership](#) (AEEP), [World Bank projects](#), and initiatives by the [World Energy Council](#) all reflect a goal shared by African nations and the international community to invest in Africa's energy transition and increase access to safe, sustainable energy sources. Launched in 2007, the AEEP is the [main political framework](#) for cooperation on energy between Africa and the EU. Its principal goal is to increase both continents' access to safe, affordable, and environmentally friendly energy. A particular emphasis is put on expanding investment in energy infrastructure in Africa, as well as fostering collaborative research and innovation efforts in renewable energy and energy efficiency.

The State of Play Since the Crisis

Unfortunately, the Covid-19 pandemic reversed years of steady progress in increasing access to affordable, dependable, and sustainable energy - a goal stated in the [UN Sustainable Development Goal 7](#) (SDG 7). By 2019, Africa was already [behind schedule](#) in achieving the SDG 7 goal of ensuring access to electricity and clean cooking capabilities. Due to the pandemic, project delays and decreased household incomes significantly hindered progress.



The Covid-19 lockdowns and resulting economic crisis caused immense challenges for Africa's energy sector, including that of increasing access to modern energy systems. There was a decline in energy accessibility among the most vulnerable homes and businesses, as well as delays in the completion and launch of crucial infrastructure projects. The health crisis compelled governments to refocus their resources on emergency health measures, leaving less money for developing and enhancing power infrastructure. In Uganda, government subsidies for its electricity access programme were suspended, while in South Africa, money for extending rural electrification had to be diverted to health and welfare facilities and programmes.

The pandemic also presented operational and financial difficulties for private enterprises installing decentralised energy solutions, such as solar household systems and mini-grids. Large countries like Ethiopia experienced a 20% decline in sales during the first half of 2020 compared to the previous year, as reported by the World Off-Grid Lighting Association. This decline can be attributed to the disruption of distribution chains caused by lockdown measures. Imports were hampered in other nations, such as Zambia and Uganda, by breakdowns in upstream supply chains.

Governments were also less able to improve energy access because of the sharp rise in borrowing costs resulting from the crisis. The Democratic Republic of the Congo (DRC), Ethiopia, Nigeria, Tanzania, and Uganda were particularly affected. In 2019, these nations were home to over one-third of all global citizens without access to electricity. In the first half of 2020, the premium investors associated with sovereign risks in these countries - as indicated by data from the International Energy Agency (IEA) - rose by two percentage points, reaching a level 7 per cent higher than at the end of 2019. Some common perceived sovereign risks include political instability, policy unpredictability, economic downturns, high levels of public debt, currency volatility and corruption. Premiums increased in Africa even though borrowing costs decreased in other parts of the world. With higher premiums indicating greater perceived risk and thus higher borrowing costs, it became much harder for African countries to finance energy initiatives.



The states that most urgently require progress in extending energy access have felt the effects of these increased financial costs the most. The DRC, which has the greatest number of residents in Africa without access to electricity, saw premiums rise to over 9 per cent in 2020 due to sovereign risk. In Ethiopia and Nigeria, where 60 and 75 million people reside without electricity respectively, risk rates increased to 6.5 per cent. Additional dangers, including declining currencies, might also deter foreign investors. If nothing is done to address these trends in international investment and borrowing costs, a decline in the number of new electrical connections added each year in SSA will heavily impede the ability of people to grow out of poverty and negatively affect development rates.

Populations that already had access to power were also considerably impacted by the Covid-19 pandemic, as it became impossible for many to pay for basic energy services. Energy consumers were particularly affected in Ethiopia, Kenya, Nigeria, Tanzania, and Cote d'Ivoire. These nations are home to 70 per cent of global citizens that cannot afford, nor often access, even the most basic power services. Simultaneously, over 10 per cent of people with access to basic electricity services in Chad, Niger, Sierra Leone, Burkina Faso, and the DRC were no longer able to afford it by the end of 2020, negatively impacting the progress achieved in these nations, as well as the funds required for future investments.

Approximately two years after the outbreak of Covid-19, Russia's invasion of Ukraine drastically increased energy, food, and commodity prices globally, further straining African economies that had already been significantly affected by the pandemic. In certain nations, like Nigeria, the cost of liquefied petroleum gas (LPG) jumped by more than 60 per cent, while the cost of diesel doubled. Retail pricing regulations have stopped the increase of natural gas and electricity wholesale costs from being passed on to customers; however, they have made utilities' financial struggles worse, increasing risks of blackouts and rationing. The price of natural gas based fertilisers are costing producers more, which poses a further danger to food security in nations that rely heavily on imports.

The majority of African countries, particularly those in SSA, have not had much budgetary leeway to absorb the economic shock brought on by the Covid-19 pandemic and the war in Ukraine. Even though development banks and other international financial organisations have



offered some short-term assistance to African nations through expanded lending facilities, debt relief, and reimbursement relief instruments, their assistance has not been enough to fully offset the effects of the continent's twin economic crises. Similar to other regions, many African nations implemented energy sector measures to safeguard domestic businesses and vulnerable consumers from the economic crisis brought on by the pandemic, which included cancelling or delaying utility bill payments and subsidising electricity costs. Such restrictions were implemented by more than 20 African states, straining utilities that were already in poor financial situations.

By 2021, many of these policies had been reversed, but the rise in fossil fuel costs following the Russian invasion renewed pressure on several cash-strapped African countries to reinstate affordability policies. The South African government suggested a two-month cut in fuel taxes and froze gasoline and diesel prices in March 2022, a policy they paid for through the sale of crude oil reserves held in their Strategic Fuel Fund.

One of the [worst energy crises](#) to hit the region in recent years is currently affecting South Africa, impacting millions. Due to Eskom's (the state-owned utility company) outdated coal-fired power plants' inability to keep up with demand, the company has implemented rolling blackouts that often last for hours. Both opposition leaders and protesters have accused the ruling African National Congress (ANC) party of mismanagement and officials at Eskom have been accused of syphoning company funds. On 9th February, 2023, President Cyril Ramaphosa declared a [state of emergency](#) while highlighting his government's intention to transition to cleaner energy.

South Africa's economic stability is in jeopardy as a result of ongoing 'loadshedding'. The simplest daily activities, such as cooking, travelling, or working, must be scheduled around power outages. Some companies that heavily rely on electricity to produce their goods and services, such as modern farming, have gone out of business, putting food supplies at risk and adding to worries regarding food security. Investors are also concerned about the reliability of power supplies, which can have an immense impact on economic growth. According to [Foreign Policy](#), "had load-shedding never occurred, the country's economy could be 17 per cent larger than it is today." During the second quarter of 2022, the country's year-on-year



GDP growth [declined](#) by 0.7 per cent, and economists predict that it will continue decreasing in 2023. The cost of power disruptions, which ranged from 204 million rand to 899 million rand daily, had an impact on South Africa's economic recovery.

South Africans are feeling [let down](#) by their government. Mass discontent amongst civilians has increased tensions in the country and - given historic precedent - will likely lead to violence if it is not addressed adequately. So far, the government has not built enough new power plants to meet the rising demand. Further, over the previous two decades, warnings from energy experts about impending supply problems have gone unheeded. Under the ANC, in power since 1994, Eskom has come to be associated with crime, corruption, and poor management. Not only does its terrible performance affect the health, security, and other aspects of South African lives, it also sparks concern for South Africa's neighbours, including Botswana, Eswatini, Lesotho, Mozambique, Namibia, and Zimbabwe, that buy energy generated in South Africa.

Africa's Energy Poverty: A Global Issue

Africa's energy poverty, made worse by the ongoing energy crisis, is keeping its people poor. Not only does [low energy consumption](#) result from poverty, but also causes it. The [development of electricity](#) is a critical step in expanding people's choices and economic opportunity. Access is crucial for boosting economic growth and enhances human capital - it is an investment in the future.

From agricultural to financial services, enterprises are powered by energy and resulting electricity, allowing them to expand and hire more workers. Electricity in the home saves time and effort otherwise required for routine domestic chores, enabling more people - particularly women - to pursue jobs outside the home, boosting household income, and raising standards of life. Children cannot do their homework at night without power. Businesspeople are unable to trade with one another or obtain market information.



Africa will need to consume significantly more energy in order to reduce levels of poverty. Improving technologies and access to modern, clean energy is not only the concern of African governments, but is also crucial to the success of international efforts to tackle global poverty. Commitment to the energy transformations that started before the energy crisis, as well as continuously seeking new ways to improve access to energy, need to remain priorities for African nations and their foreign partners.

Beyond affecting poverty rates, limited access to clean, modern energy in Africa has significant environmental consequences. The [World Wide Fund for Nature](#) proclaimed in 2022 that nearly 80 per cent of the energy used for cooking in SSA was produced by the ineffective combustion of solid biomass, primarily wood or charcoal. As a result, levels of deforestation, greenhouse gas emissions, ecosystem degradation, and wildlife loss are all increasing. Since the beginning of the energy crisis, it has become harder for Africans to cook in a sustainable way, exposing millions of rural or outlying urban families to the danger of traditional fuels, like charcoal, kerosene, or fuelwood. A rise in the number of individuals using conventional fuels to prepare their daily meal risks amplifying already visible negative effects on gender, health, and socio-economic development.

In a [joint report](#) published in January 2023, the WHO, World Bank, International Renewable Energy Agency (IRENA), and Sustainable Energy for All (SEforAll) evoked the repercussions of poor and unreliable energy access on people's health. The organisations' findings indicate that more than half of all facilities in SSA have unstable power connections, and that more than one-in-ten health institutions have no access to energy at all, damaging health outcomes. Accessing energy is essential for the delivery of high-quality healthcare, from the delivery of babies; to treating emergencies like heart attacks; to administering potentially life-saving vaccinations. Arguing that universal health coverage cannot be achieved without stable energy in all healthcare institutions, the report points to the investments needed to sufficiently electrify healthcare infrastructure. It also highlights the pressing necessity for policymakers and development partners to develop decentralised sustainable energy solutions.



The gendered consequences of energy poverty in Africa also risk being amplified by the ongoing energy crisis. A [policy brief](#) published by UN Women found that the lack of sustainable and clean energy services disproportionately affects women - especially in rural areas - and hinders their prospects for economic prosperity. In developing countries, women and girls are primarily responsible for [cooking](#), collecting firewood, and completing domestic tasks, exposing them to the effects of energy poverty. Lacking access to clean energy sources, women and girls are forced to use traditional fuels for lighting and cooking, which are frequently linked to respiratory infections and potential fire risk. The time spent gathering firewood and preparing meals on makeshift stoves adds to their burden. Collecting fuels also contributes to poor health conditions and limits opportunities to improve labour productivity and earn additional income. These findings point to the urgency of addressing energy poverty and its gendered consequences in Africa. Achieving universal gender equality and enhancing women and girls' opportunities and prosperity in the region is critical; making it a dual priority of African states and the global community.



Economic Challenges Causing the Crisis

Arthur Ddamulira

A [study](#) by the African Development Bank (AFDB) found that there are both surpluses and shortages of energy throughout Africa. Some parts of Africa have more energy being produced than consumed, driven by excess production capacity and low energy demand. Other parts are affected by energy deficits caused by insufficient production capacity. Due to the even higher demand for energy in these regions, deficits lead to blackouts, brownouts, and other disruptions.

The report estimates that to provide over 1.3 billion Africans with universal access to power—600 million of whom are off the grid—an annual investment of between \$32 billion and \$40 billion must be made into the end of the energy value chain. An energy value chain is [defined](#) by Hennessy Funds as comprising different stages, from upstream companies exploring new energy beds to midstream companies and end users such as homes and businesses. According to the study, which was carried out as part of the AFDB's New Deal on Energy for Africa, production and midstream facilities will require an investment between \$17 billion and \$25 billion annually. Three of the continent's major economies, Egypt, Nigeria, and South Africa, account for about 33 per cent of Africa's energy deficit.

South Africa, one of Africa's most developed economies, faces a pervasive energy crisis. South Africa's outages cost the continent between 2 and 4 per cent of its annual gross domestic product, according to the AfDB's findings. This is happening even though foreign donors such as the UN and individual nations invested nearly \$15 billion, or 26 per cent of all global climate finance, in the energy sector in Africa between 2019 and 2020. Continued outages and energy deficits in areas that have received financing indicate there is a clear issue around the utilisation of foreign investment. To ensure the effective utilisation of investments, we expect that investors will begin to demand stronger accountability for funds deployed. Governments, in turn, will need to address underlying challenges such as corruption and a lack of infrastructure reporting, to avoid hindering investment potential.



The enormous promise of the energy transition in Africa is the hope that Africans will bear less of the cost of climate change, and be simultaneously well-equipped to deal with issues arising from it. However, an [analysis](#) by the International Renewable Energy Alliance (IRENA) shows that Africa received only 2 per cent of all global investments in renewable energy over the past two decades, with the vast majority of investments going to a small number of countries. Without rapidly increasing investments in the energy transition, the world will not be able to keep its commitment to combating climate change globally.

Economic Impacts of the Crisis

Amid the energy crisis caused by the Ukraine war, higher energy prices have resulted in relatively [high inflation](#); this has, in turn, caused the poor to become poorer, and has forced factories to cut back on production (or even close their doors). Energy crisis-induced inflation has been worsened by other factors, such as the war in Ukraine and higher borrowing costs as large central banks hike their interest rates. Worsening inflation has led to severe recessions; consequentially, Africa's economic growth is [expected](#) to weaken to 3.8% in 2023, down from 4.3% in 2022.

Africa is already more affected by climate change than most other parts of the world, despite being the continent that emits the least greenhouse gases. Africa produces the fewest carbon dioxide (CO₂) emissions per person of any continent, accounting for less than 3 per cent of all CO₂ emissions. Africa is the continent at the highest risk of suffering from a disaster they are least responsible for. Most Africans have to devise ways to utilise resources sparingly, which can often result in [food and human insecurity](#). Africans continue to bear a [disproportionately](#) large share of the adverse consequences of climate change, including water stress, decreased food production, an increase in the frequency of extreme weather events, and slower economic growth.

The current global energy crisis has highlighted the [urgent](#) need to expand the use of less expensive and cleaner sources of energy. The Covid-19 outbreak has had a significant impact



on African economies, and the Russian invasion of Ukraine has caused a sharp increase in the price of food and oil. The war has also reversed positive trends in boosting [access to modern energy](#). With 4 per cent more Africans going without electricity in 2021 than in 2019, the converging crises are having a fundamental impact on Africa's energy systems, and increasing the urgency for alternative energy sources.

These sources, such as geothermal and solar power, are advantageous since they do not impact human health. Government-backed subsidisation programs can also make them very low cost in comparison to traditional energy. For instance, the "[Just Energy Transition Partnership](#)" announced at the [2021 United Nations Climate Change Conference](#), that it aims to cut reliance on coal plants by investing up to \$8.5 billion in building greener alternatives, and supporting coal-dependent areas in their energy transition.

Economic Solutions to the Crisis

According to a 2021 [report](#) by the International Energy Agency (IEA), which was published in collaboration with the World Bank and the World Economic Forum, annual clean energy investments in developing economies must increase from \$150 billion in 2021 to more than \$1 trillion by 2030 to achieve net-zero emissions by 2050.

To meet its energy and climate targets, African energy investments would need to more than [double](#) this decade. This would amount to almost \$190 billion annually between 2026 and 2030, with two-thirds going to renewable energy. Energy investment as a percentage of GDP would rise to 6.1 per cent in Africa during that time, which is slightly higher than the global average for emerging markets and developing countries. However, according to the IEA's Net Zero Emissions by 2050 [Scenario](#), during that same period, Africa would only consume about 5 per cent of the average energy produced globally, bringing into question the practicality of the scenario.

There remains a need for a more [just transition](#) and a considered approach to supporting the continent with its energy crisis. The \$190 billion needed for the transition far outstrips



financing and aid available to the continent. Self-sufficiency remains far away, but in the interim, financiers and stakeholders in the African energy solution need to weigh the estimated demands of the transition alongside the practical reality of Africa's financial capabilities.

Increasing financial flows to Africa must be a top priority for multilateral development banks. To mobilise the level of investment envisioned in the [Sustainable Africa Scenario](#), they will need to increase concessional lending to Africa. The creation of new capital sources, like climate finance and carbon credits, could increase international financial flows and help offset the dangers of climate change throughout the energy transition.

Carbon credits have [enormous potential](#) to reshape African energy. Africa has vast amounts of carbon stored within its ecosystems and can thus develop a strong voluntary carbon credit market, the likes of which have already driven climate action in [other parts](#) of the world. Journalists and industry experts criticise the use of carbon credits because they argue there is little practical benefit. Emission reductions or removals are considered 'additional' if the project or activity would not have occurred without the additional incentive provided by carbon credits. Assigning carbon credits to projects that would have been undertaken anyway results in little climate mitigation, and may result in [higher](#) emissions.

Furthermore, because carbon emissions persist in the atmosphere for hundreds of years, carbon offsets must be permanent to be effective. Carbon reduction projects are very effective at addressing emissions that have already been emitted. Investments in renewable energy yield positive results in reducing carbon emissions during overall carbon-reduction programs. However, even if the seller of the carbon credit emits no emissions, the buyer still emits, resulting in a net positive amount of emissions. As a result, carbon neutrality or achieving net-zero emissions cannot be accomplished solely through the use of carbon reduction credits.

Nevertheless, carbon removal initiatives have the potential to achieve permanent net-zero emissions. This aim can be met through direct air capture programs, which employ chemical



processes to remove carbon dioxide from the atmosphere and deposit it underground. More financing should be made available for carbon-reduction efforts in Africa.

The [Africa Carbon Markets Initiative](#), which was announced at COP27, was launched with ambitious plans “to make climate finance available for African countries, expand access to clean energy, and drive sustainable economic development.” The funds raised via this initiative will support the financing of clean energy projects, and will also partially address the reluctance of some African leaders to rely on foreign aid by developing a market within Africa, powered by the continent’s existing resources. This voluntary carbon market has the potential to have a [positive impact](#) by enabling organisations and nations to look beyond their own carbon footprint and support broader efforts. To address the flaws of these credit markets, transparency will be essential throughout these initiatives.

While it remains challenging to avoid general investment-related risk in Africa, terms attached to climate-related financing are often more [favourable](#) than debt. Climate-related financing focuses specifically on providing financial support for projects and initiatives that address climate change mitigation or adaptation, while debt refers to traditional financial borrowing that does not have a specific climate-related purpose. Even though clean energy transitions require significant levels of both equity and debt, experts anticipate that the capital structure of energy investments will [shift](#) in favour of more debt being used to finance initiatives. This is primarily because investment flows are shifting to the energy sector, where debt financing is more common; this status quo is predicted to drive the reliance on debt financing. The energy sector also includes activities which do not necessarily address climate change mitigation or adaptation like building oil refineries.

To promote investment across all industries, it will be necessary to improve capital flows from both domestic and foreign providers. Implementation of renewable energy is one of the best ways to garner financing from commercial banks, other significant investors, and international project developers. Consumer-based investments, which are those aimed at delivering energy to households and small businesses, usually from state-owned companies, rely more on domestic funding sources for grids and fuel supply.



Increasing investments in renewable energy will be necessary to close the [energy access gap](#) in Africa, which continues to be a major obstacle to the advancement of socio-economic and human development. Solid industrial growth, business resilience, and agricultural productivity have the potential to sustain improvements in Africa's energy systems in the long term. With an [electrification rate](#) of only 46 per cent, Sub-Saharan Africa - where 906 million people continue to lack access to clean cooking fuels and energy technologies - requires significant investment.

Rapid climate change adaptation might mitigate the severity of these economic consequences, but it would be incredibly [expensive](#). Such an adaptation would require a significant increase in contributions by advanced economies, from \$7.8 billion in 2019 to approximately \$50 billion annually by 2030. A portion of this will be necessary to increase Africa's energy systems' resilience to climate risks, as three-fifths of the continent's [thermal power plants](#) are at high or very high risk of being disrupted by water stress. Further, one-sixth of its Liquefied Natural Gas capacity is vulnerable to coastal flooding.

When coupled with the appropriate policy mix, IRENA's [modelling](#) indicates that a systematic transition towards an energy system based on renewable energy could increase continental GDP by 6.4 per cent, create 3.5 per cent more jobs, and increase the welfare index by 25.4 per cent by 2050. The [AfDB and IRENA](#) have identified financial stability and job creation as two of the largest upsides of the energy transition. For many African nations that import energy, renewable energy has significant potential in reducing vulnerability to external shocks caused by changes in the price of fossil fuels.

Despite existing obstacles, the global switch to renewable energy has given Africa new hope for social and economic development. More than 70 per cent of all CO₂-producing countries have committed to achieving net zero emissions by the middle of the century. This group consists of 12 African countries, which produce more than 40 per cent of the continent's overall CO₂ emissions. These objectives are helping to reshape the world energy system by shifting global investment. Nearly all African countries have ratified the [Paris Agreement](#) and are in a good position to profit from the technological spillovers of these shifts and attract increasing amounts of climate funding.



Politics of the Energy Crisis in Africa

Josiah Ssempe

During Nigeria's colonial era, British colonial rulers exploited energy resources - including coal - and [subjected](#) Nigerian coal mine labourers to forced labour, underpayment, and detention. Private concessionaires played a significant role in perpetuating these injustices, while the colonial administration [prioritised](#) profit over the miners' well-being. Post-independence in 1960, Nigeria focused on exporting oil and gas, [neglecting](#) the development of its domestic energy infrastructure. Consequently, Nigerians experience frequent power outages and Nigeria lacks the infrastructure to extend electricity access to its growing population. Presently, while Nigerian cities have experienced an upswing in electricity access, [rural](#) areas suffer the most from a lack of access.

The Democratic Republic of Congo is a prime example of how African nations' energy resources have historically been ravaged by slavery and conflict. All colonial powers granted concessions to private companies to extract natural resources during the colonial era. King Leopold II of Belgium enslaved the Congolese in order to harvest rubber and ivory. A study by academics from the University of California and the University of Michigan [demonstrates](#) how Congo's exposure to the concession system, which was marked by violence and indirect authority, affected the DRC's growth. The study's findings provide micro-level evidence on how this common form of colonial extraction - concessions, violent oppression, and indirect rule - is crucial to understanding sub-Saharan Africa's comparative development. The findings show that even brief exposure to extractive institutions can have a significant influence on an area's development, especially when local institutions are incorporated into the extraction process.

In addition to its colonial past, and likely augmented by it, persistent conflict in modern DRC continues to hinder the country's ability to build energy infrastructure and reap the benefits of its natural resource deposits. Only [19%](#) of DRC's population has access to electricity. Of those in rural communities, roughly 1.1% have access. Although regional data is scant, it is very likely that the eastern, rural, conflict-ridden regions of North Kivu and Ituri are some of



the more acutely affected. Much of these regions are entirely controlled by a swath of violent armed groups that actively exploit the country's natural resources. Their pervasive presence makes the development of energy infrastructure and the extension of electricity provision next to impossible.

Africa has an abundance of natural resources, including oil and gas, but its energy generation capacity (excluding South Africa) is only 28 Gigawatts, [equal](#) to that of Argentina. Africa has only been able to profit from a fraction of its resource potential due to the ramifications of colonialism, internal conflict, and slavery. [Research](#) by McKinsey found that Africa has a potential energy generation capacity of 1.2 terawatts excluding solar, and a capacity of more than 10 terawatts including solar. In addition, many African nations have been [saddled](#) with debt from energy infrastructure projects carried out by foreign companies with little regard for local needs or the environment.

Political Landscape and Policies

Every African country faces its own mix of difficulties and possibilities. Politics constantly shape energy policy as governments play a vital role in designing and executing policies to ameliorate the energy crisis. Some African governments have taken great strides to enhance access to energy, while others have been unable to cope with booming demand for energy from growing populations.

There are several examples of African countries taking their energy future into their own hands. Kenya has made significant progress in developing its geothermal energy resources, which now account for over 40% of the country's electricity generation. In addition, the government of Senegal has partnered with a private company to develop a new wind farm that will provide 15% of the country's electricity needs.

The South African government has taken proactive steps by implementing renewable energy programmes. One notable initiative is the Renewable Energy Independent Power Producer Procurement programme (REIPPP), which [aims](#) to increase the percentage of renewable



energy in the country's energy portfolio. The government has set a renewable energy generation target of 18GW by 2030 and has seen progress with over 6 gigawatts of generation capacity being allocated to bidders across a variety of technologies, principally in wind and solar.

In Nigeria, the government has [taken](#) significant strides towards adopting renewable energy sources. Nigeria [established](#) a strategic goal of achieving 30% renewable energy generation by 2030. The government has created financial incentives to encourage renewable energy investment, such as the Nigerian Electricity Market Stabilisation [Fund](#), which provides financial assistance to power-producing businesses. These programmes are concrete steps towards developing the energy infrastructure that African nations need.

There are multiple political challenges to the development of renewable energy in Africa. Unlike the West, Africa looks to jump straight to large scale clean energy adoption. This dynamic is different from most transitions in the western world, as western countries were able to rely on a stable industrial base supported by fossil fuels to meet their energy demands. It is difficult for Africa to emulate the West in this regard due to a lack of established energy infrastructure that provides widespread connectivity to its populations. Thus, grappling with the initial volatility in supply from renewable sources would present a considerable challenge to African countries.

Another connected challenge lies in the variability of renewable energy sources, such as solar and wind. Analysts [note](#) that countries like Denmark, Germany, and Uruguay, which utilise renewable energy well, had the advantage of possessing reliable and stable power grids with 100% access to electricity prior to their investments in solar and wind plants. Africa, however, not only lacks the electricity access that its Western counterparts possess, but also has [underperforming](#) electrical grids which may not be able to cater towards the different demand renewable energy sources such as solar or wind would put on it.

A study on barriers to the large-scale implementation of solar energy in Tanzania [identified](#) a key institutional barrier: decision-makers perceive solar power technologies as unsuitable for large-scale electricity generation. The study [found](#) that;



"Most of the interviewed investors, financial institutions' representatives, and development partners see that the high-profile decision makers in Tanzania don't believe that solar power technologies can generate reliable electricity in large amount [sic] (e.g. tens of MW scale) to contribute to the country's industrialization vision."

Analysts note that large-scale investments in African energy are needed but are challenging. A 2021 study that analysed policy barriers to a clean energy transition in South Africa confirmed this need. The study found that the government needed to attract more foreign investment for large-scale renewable energy projects, which they were able to garner as a result of their REIPPP programme.

African Energy Partnerships

African nations have also begun to work together to address the need for renewable energy sources. One example is the Power Africa initiative launched by the United States in 2013. The goal of the initiative is to [increase](#) access to electricity in sub-Saharan Africa by adding 30,000 megawatts of clean power generation capacity and 60 million new electricity connections by 2030. Power Africa has already made [significant](#) progress, having already added 12,000 megawatts of power generation capacity and over 18 million new electricity connections.

Another example is the Forum on China-Africa Cooperation (FOCAC), a ministerial conference that alternates every three years between China and an African country, serving to advance relations in commerce, security, investment, and diplomacy. FOCAC also provides an integrated framework for Chinese-African relations that advance Chinese oil companies. These oil companies have emerged as the economic drivers of China's diplomatic *démarche* on the continent as [viewed](#) in South Africa and Uganda. In 2017, Sinopec, a Chinese state-owned company, [acquired](#) a 75 percent stake in Chevron Corp's South African assets. Additionally, it purchased its subsidiary in Botswana for nearly \$1 billion. The China National Offshore Oil Corporation (CNOOC), a Chinese state-owned company, in



partnership with France's TotalEnergies, collaborated with [Uganda](#) to develop approximately 1.4 billion barrels of recoverable oil. Chinese state-owned oil companies actively invest in exploring and producing oil and gas supplies in Africa. Africa [provides 25%](#) of China's oil and gas, second only to the Middle East.

It is useful to look at how China and America purvey financial and technical development assistance to Africa's energy sector. While organisations such as the World Bank - typically headed by American nationals - are usually the primary providers of financial and technical aid for projects in Africa, in recent years China has supplanted them as the main contributors via the Belt and Road initiative. They have also increased involvement through diplomatic engagements such as FOCAC.

Since 2021, the Biden Administration has also significantly increased U.S. engagement in Africa, allocating a minimum of \$1.1 billion towards African-led projects aimed at conservation, climate adaptation, and a just energy transition. Two existing initiatives (Power Africa, in partnership with Prosper Africa) launched the U.S.-Africa Clean Tech Energy Network (CTEN), creating strategic pathways for American organisations to invest in Africa's energy sector. The more recent CTEN [connects](#) U.S. and African cleantech energy companies enabling them to leverage deployable technology and expand access to dependable electricity across various avenues. CTEN [aims](#) to facilitate up to \$350 million in deals within the first five years. The Biden Administration invested \$193 million in 2022 to support Power Africa and plans to provide another \$100 million in 2023.

Besides governments, private companies and international organisations also act as stakeholders in Africa's energy sector. These stakeholders' interests vary from profit, to environmental sustainability, to poverty reduction. International organisations like the World Bank and the African Development Bank (ADB) have also made significant contributions to the African energy industry. In 2023, the ADB [loaned](#) Mauritius \$110 million to bolster the country's electricity infrastructure. In late 2022, the World Bank Group [unveiled](#) a strategy to achieve universal access to electricity in Africa by 2030. The World Bank, the Multilateral Investment Guarantee Agency (MIGA), the International Finance Corporation (IFC), and



other development-oriented organisations aim to encourage private investment in distributed renewable energy (DRE) systems - a reliable electrification system that does not require utility-scale power plants to operate - to swiftly and effectively electrify specific regions within sub-Saharan Africa. Overall, the World Bank's efforts, which include the Africa Energy Access Programme and the Lighting Africa programme, have been beneficial in increasing access to electricity, particularly in rural areas where traditional grid connections are not feasible.

Examining Discrepancies in Global Climate Responsibility

One of the biggest energy related challenges facing sub-Saharan Africa is the inconsistencies surrounding strict emission guidelines. Many African countries are unable to garner energy investments due to strict emission guidelines imposed by developed countries.

Sub-Saharan Africa is one of the regions most vulnerable to the effects of climate change, which adds a layer of complexity to the situation. The region is experiencing more frequent and severe weather events, including floods, droughts, and heat waves, which are exacerbating food insecurity, water scarcity, and other challenges. The region is [responsible](#) for only about 4% of global emissions, yet it is among the most affected by climate change. Developed countries, which are responsible for the majority of emissions, often prioritise economic interests. These interests favour policies and practices that promote reliance on fossil fuels and industrial growth over the need to reduce emissions.

At COP 26, EU climate chief Frans Timmermans [said](#), “(The European Union) will have to also invest in natural gas infrastructure. As long as we do it with an eye of only doing this for a period, then I think this is a justified investment.” The EU and U.S., who control substantial voting stakes in the largest international financial institutions (IFIs), then spearheaded a pledge made by 20 countries to stop financing gas projects abroad. Without support from IFIs, the development and maintenance of key infrastructure for natural gas creation in Africa is unattainable. Western nations leverage their abundant natural and fossil fuel resources to facilitate a seamless transition into green energy. In contrast, African nations face significant



hurdles due to the lack of basic and reliable electricity infrastructure. While striving to uphold identical green energy standards, African nations grapple with the challenges associated with insufficient access to electricity, hindering their ability to fully embrace renewable energy solutions. This creates a disparity where African nations are expected to meet global environmental standards without the necessary resources to support their transition to green energy.

Aftermath of the Pandemic

Since the pandemic, many countries are moving forward on the basis that reliance on existing energy partners is not sustainable in the long term. Multiple countries are expanding their involvement in Africa's energy sector. After the start of the Ukrainian conflict, the European Commission [released](#) a proposal to accelerate the adoption of renewable energy sources and diversify natural gas supplies to make Europe independent from Russian fossil fuels by 2030. French energy company TotalEnergies has recently undertaken new energy investments in Uganda and Angola, and resumed energy projects in Mozambique.

Although TotalEnergies has faced [legal](#) challenges and [protests](#) for its retention of some fossil fuel and liquefied natural gas (LNG) projects, since the pandemic it has seen great profit from its strategic hold over fossil fuel reserves and LNG developments in Europe. According to CEO Patrick Pouyanné, TotalEnergies also seeks to continue to develop more strategic fossil fuel and LNG projects in Africa. TotalEnergies mitigates environmental critiques by simultaneously pursuing green energy pathways within Africa and maintaining that they aim to [achieve carbon neutrality](#) by 2050.

Other French partners have also doubled down on green investments. French fund manager RGREEN INVEST and investment adviser ECHOSYS INVEST [announced](#) the AFRIGREEN Debt Impact Fund, an 87.5 million euro (\$92.63 million) fund that will finance solar power production across Africa, with a focus on West and Central Africa.



China is also a major contender in African energy investment, boasting a major presence in North and West Africa. China has invested significantly in the Mambilla Hydropower Project in [Nigeria](#) and the Grand Ethiopian Renaissance Dam in [Ethiopia](#), and is also pursuing a proposed hydropower energy expansion in [South Sudan](#). China has a number of other [large scale](#) energy investment projects across Africa, like the Coral South Floating Liquefied Natural Gas project in Mozambique - the largest LNG project in Africa. This project is being undertaken by the China National Petroleum Corporation, a company wholly owned by China's central state-owned Assets Supervision and Administration Commission.

The Biden Administration [invested](#) \$193 million in 2022 to support Power Africa and plans to provide another \$100 million in 2023.

In Context, the Problem and Possible Solutions

Multiple factors are obstructing the electrification of Africa. Politically, the shift to clean energy is controversial. The United Nations' seventh Sustainable Development Goal ([SDG](#)) cites the importance of “affordable, reliable, sustainable and modern energy for all.” Energy, however, is also [essential](#) to the other development goals, including the attainment of universal secondary education, more inclusive growth, gender equity, sustainable land use, the eradication of severe poverty, and health outcomes for children. [Analysts](#) question whether Africa's need for electricity can be reconciled with the global desire to push Africa to transition to green energy.

The establishment of an enabling climate for private sector investment is one potential political solution to Africa's energy problem; solid policy frameworks that promote investment are essential. Regulations that promote the use of renewable energy sources, such as tax breaks or subsidies for businesses that invest in clean energy, could also be beneficial. Other potential solutions include greater regional integration, improved energy efficiency, and investment in research and development.



Creating an enabling environment for private sector investment is feasible; however, it would require African governments to improve the ease of doing business, reduce bureaucratic red tape, and ensure legal and regulatory certainty. Policies that incentivize renewable energy use are feasible, but [require](#) significant political will to implement. Increasing regional integration and improving energy efficiency would necessitate a collective effort from African governments, the private sector, and other stakeholders.

The African Renewable Energy Initiative (AREI) is an example of a political solution that builds on private stakeholder involvement to increase private sector investment in renewable energy. The AREI, established in 2015, aims to [increase](#) Africa's energy generation capacity by 300 GW by 2030. The initiative's goal is to improve the climate for private investment in renewable energy via capacity building, legislative and regulatory change, and financial assistance. Many African [nations](#) including Egypt, Kenya, Chad, Namibia, and The Republic of Guinea - in addition to the European Union and other international partners - have backed the effort.

Promoting regional cooperation and integration is of the utmost importance. By focusing on the development of cross-border power grids and the sharing of resources and expertise between countries, African nations can enhance their energy resilience. This approach has been pursued by several regional organisations, including the East African Community and the Southern African Development Community, which have launched related initiatives such as the East African Power Pool (EAPP). As a regional integration initiative, the EAPP seeks to increase access to reliable and affordable energy in East Africa. The EAPP was founded in 2005 with the purpose of creating a regional power market that simplifies the process for member nations to exchange electricity. The project aims to combine resources, strengthen energy efficiency, and increase investment in renewable energy. The EAPP continues to [significantly increase](#) the amount of power that is available throughout East Africa.

Political solutions to the energy crisis in Africa are complicated. One significant challenge is a lack of political will to implement reforms that will enable private sector investment in the energy sector. African governments are [reluctant](#) to give up control over energy production and distribution, which makes it challenging to create a stable policy environment. Another



challenge is the high cost of renewable energy technologies. Although these technologies are becoming more affordable, they are still [more](#) expensive than traditional energy sources in many cases. Finally, regional integration and cooperation require a high level of trust and coordination among African governments, which can be challenging to achieve.



Renewable Energy Transition

Camille Victor

Energy that is sustainable and renewable is essential to Africa's future. The [World Economic Programme](#) predicts that by 2050, Africa's population will reach 2 billion, and two in five of the world's children will be born on the continent. Being able to meet their needs with sustainable energy sources will be fundamental to economic development and social welfare.

Although Africa has a wealth of renewable energy resources, many of them are largely underutilised. The International Renewable Energy Agency (IRENA) and the African Development Bank (AfDB) estimate the technical potential of solar photovoltaic (PV) power generation on the continent at 7,900 GW in recent research, indicating that Africa has some of the world's highest solar power generating potential. This is in addition to the significant potential for hydropower (1,753 GW) and wind energy (461 GW), as well as the geothermal and contemporary bioenergy possibilities in select regions of Africa.

Not only is renewable energy climate and environment-friendly, but is also usually very cost-effective when compared to the long-term costs of imported natural gas and oil. Additionally, it holds tremendous potential for wider significant socio-economic advantages in Africa. IRENA's modelling suggests that if Africa implements a systematic shift to renewable energy, it could experience a 6.4 per cent increase in GDP, 3.5 per cent more jobs, and a 25.4 per cent higher welfare index from 2020 to 2050 when combined with adequate policy.

According to IRENA and AfDB, two of the biggest upsides to an environmentally sustainable Africa would be greater fiscal stability and job creation. For many African energy importers, green energy has considerable potential to lessen vulnerability to external shocks brought on by changes in the price of fossil fuels. Renewables can also play a major role in creating jobs because investing in clean energy technologies generates up to three times as many jobs per million dollars spent as fossil fuels. According to IRENA's model, jobs created in the move to



renewable energy will outnumber those lost by giving up traditional energy, including in many countries that currently produce fossil fuels.

Clean energy will be crucial in bridging Africa's [energy access gap](#), which continues to be a significant barrier to the advancement of socio-economic and human development across the continent. Access to sufficient, affordable, and reliable energy is an essential enabler of livelihoods. Public services, including education and healthcare, highly depend on such access. [Schools](#) struggle to provide adequate learning environments due to limited access to modern technology, insufficient lighting, and restricted access to digital resources. Frequent [power outages](#), such as those currently faced by South Africans, disrupt teaching and learning, compromising academic progress. [Safety concerns](#), including break-ins, theft and vandalism, also arise from the lack of energy-powered security systems and discourage many from attending school regularly.

Sub-Saharan Africa (SSA) exemplifies the magnitude of the task. The region is home to [over two thirds](#) of the world's population without electricity access. In 2019, SSA's electrification rate was 46 per cent, and 906 million people lacked access to clean cooking fuels and technologies. According to a UN Conference on Trade and Development (UNCTAD) [report](#), limited access to energy has considerable consequences for sustainable development, poverty reduction, health, and education. Lack of access to clean energy sources and cooking fuels is an important concern, particularly for women and girls. They are disproportionately harmed by air pollution at home, which resulted in nearly 700,000 fatalities in Africa in 2019.

As Africa's fundamental socio-economic problems are inextricably linked to energy development, the use of renewable energy sources could help African countries in achieving their development targets, such as the UN's [Sustainable Development Goals](#) (SDGs). Renewable energy has the potential to liberate countries from outdated energy systems that are burdened with unused or wasted resources, and offer limited prospects for sustainable development.

Due to Africa's extreme political and economic diversity, its energy future cannot be advanced via a single strategy. The solution will most likely require a mix of institutional



capacity building, carefully crafted policies, and a sizable financial and technological commitment from the international community. South African president Cyril Ramaphosa [asserted](#) this in November 2022 at COP27, the UN's 27th conference on climate change in Sharm El Sheikh, Egypt. He rejected a “one-size-fits-all approach to financing the transition that disregards African realities.” He also urged commercial financial institutions to play a more active role in supporting just energy transition initiatives by creating project financing mechanisms that cater to the specific needs and circumstances of emerging economies.

Energy transitions require inclusive consensus-building and planning, especially as there are often conflicting interests between those who are working to reduce poverty, politicians who prioritise short-term over long-term economic interests, and environmentalists. While challenging, achieving a transition is feasible through dedicated efforts and a genuine recognition of the opportunities that the energy transformation can provide for Africa.

The Challenges of a Renewable Energy Transition

Today, Africa's move towards renewable energy faces considerable challenges. Although the continent possesses abundant [solar and wind](#) potential, progress towards a future powered by green energy has at best been patchy. Across the continent, hydropower and natural gas are increasingly being used instead of coal; however, the use of renewables is still well below the world average. In 2020, Africa generated 9 per cent of its energy from renewable sources, with hydropower accounting for the majority (6.8 per cent). Inadequate grids and infrastructure, policy uncertainties, unstable financial situations and restricted access to private and foreign investment are only some of the [factors](#) behind these low figures.

South Africa, the most industrialised nation on the continent, is an [exemplary case](#) of the dire state of green energy in Africa. The country of around 60 million people ranks 13th in the world for greenhouse gas emissions and generates more than 80 per cent of its electricity from coal. Accused of mismanagement and corruption, the state-owned energy firm Eskom cannot keep the lights on. Its power plants regularly break down, causing nationwide blackouts which take a heavy toll on the economy.



President Cyril Ramaphosa is looking to foreign governments and investors for the capital required to fund South Africa's shift toward renewable energy. According to a study carried out by the Blended Finance Taskforce and Centre for Sustainability Transitions at Stellenbosch University, South Africa must spend \$250 billion over the next 30 years to shut down its coal-fired power facilities and switch to renewable energy.

Funding is not the only issue. Corruption poses significant challenges for African states in ensuring a successful transition to green energy. Researchers point to the possibility of a "[green curse](#)" when it comes to exploiting the potential of renewables in developing nations, drawing a parallel with the "resource curse" that plagues certain states rich in natural resources. Corruption and mismanagement of resources has in many cases contributed to entrenched poverty, autocratic rule and violent conflict.

At [COP26](#) the South African government declared that it would obtain \$8.5 billion in grants and loans from wealthy nations to finance initiatives linked to an energy transition. This funding pertains to green hydrogen, electric car manufacturing, renewable power, and electricity transmission lines. Much of the money is destined to be spent by Eskom, a state utilities conglomerate. The company's outgoing CEO, Andre De Ruyter, said the deal - known as a just energy transition partnership (JETP) - was done "by and large at Eskom's intervention." Eskom's history of fund mismanagement suggests that much of this money will be syphoned off by corrupt officials.

In an interview in February 2023, the former CEO accused the government of attempting to "water down governance" around how the \$8.5 billion of clean energy funding would be spent. Since taking leadership of Eskom in 2019, De Ruyter claims he has worked to eradicate corruption and kickstart South Africa's energy transition. He states he has faced opposition from both the government and organised crime groups.



When asked if Eskom served as a “feeding trough” for South Africa's ruling party, De Ruyter replied:

“I would say the evidence suggests that it is. I expressed my concern to a senior government minister about attempts, in my view, to water down governance around the [JETP] and the response was essentially, you know, you have to be pragmatic. In order to pursue the greater good, you have to enable some people to eat a little bit”.

Another challenge is how transitioning to green energy might affect the lives of certain communities. Although moving to renewables would create many new jobs, it would also inevitably lead to job losses in certain areas, such as the coal sector. In [Ermelo](#), a South African town where coal is the backbone of the local economy, coal workers are hesitant to embrace renewables, claiming they feel left out of the country’s energy transition. The founder of a community-based project, Philani Mngomezulu, says the people of Ermelo will only support the energy transition if it affects them positively. He points to a need for consultation with the local community, as well as a need to inform people on how the transition will affect them. Flawed consultation and informing processes will not only turn people against the transition, but also risk sparking civil unrest. Following incidents involving theft and sabotage, the government sent troops to at least four Eskom power plants in December 2022.

A Global Concern, a Global Responsibility

Ensuring the transition to renewables is not only the responsibility of governments, but also that of the international community. Europe’s turn to North Africa for [clean energy](#) and its resulting impacts on the African continent highlights this dual responsibility. Triggered by the conflict in Ukraine, Europe’s ambition to end its dependence on Russian natural gas has resulted in a rush to lay underwater cables and build huge solar energy farms to tap into the abundance of renewable energy in North Africa. In the region, solar panels produce up to three times more power than in Europe.



Europe's outsourcing of its energy needs does not come without considerable social and environmental impacts for North Africa. Ecosystems in the desert will be destroyed. Nomadic Bedouin communities are already losing access to lands where their livestock has grazed for millennia - dozens of tribes are at risk of losing access to nomadic territories. Analysts worry that these changes will occur without much community involvement in decision making or consideration for the environment.

Beyond the social and ecological issues posed by these projects, ethical concerns have arisen around Africa exporting large quantities of power. Although the majority of people in Morocco and Egypt have access to electricity, less than half of all Africans are wired into dependable power grids. [Research](#) shows that most countries in West Africa could receive green electricity from Morocco through a regional power pool, and a considerable portion of East Africa could receive energy from Egypt. But at the moment, European markets are the target market for electricity exports from both nations.

This loss of energy to Europe can be traced back to various factors. Geographical proximity and interconnectivity facilitates trade between North Africa and Europe. North Africa's existing infrastructure, including pipelines and interconnectors, as well as export-oriented policies, foster energy trade relationships with European countries. Europe also has various trade deals and partnerships with North Africa for renewable energy. These include the Desertec Industrial Initiative (DII), Mediterranean Solar Plan (MSP), and Power Purchase Agreements (PPAs). Through PPAs, European companies and states have made [deals](#) with North African countries, particularly Morocco and Tunisia, to import renewable energy. These agreements appeal to both parties by ensuring a fixed price for renewable energy and providing stability for investments in renewable projects.

Such large-scale projects are necessary for the climate and could help both continents address their energy crises. North Africa's renewable energy resources could have enormous benefits for both Africa and Europe. While the upsides of Euro-African clean energy integration are immense, it is imperative that these initiatives are undertaken in a way that tactfully considers the transition's wider impact on local environments and communities.



Recommendations & Conclusion

Arthur Ddamulira

Dedicate More Financial Resources Towards Solving the Crisis

This report highlights Africa's heavy reliance on traditional biomass and fossil fuels, leading to environmental deterioration and limited energy accessibility. Investments in renewable energy sources like solar, wind, hydro, and geothermal energy are crucial for Africa to diversify its energy portfolio. Sustainable alternatives can reduce dependence on fossil fuels, alleviate the effects of climate change, and enhance energy access. Inadequate energy infrastructure remains a significant hurdle in achieving universal electricity access. Governments and international organisations should prioritise the development of transmission and distribution networks, and invest in decentralised energy systems, particularly in rural areas.

Financial resources play a pivotal role in addressing Africa's energy crisis. Governments, international financial institutions, and private sector entities must collaborate to [mobilise investments](#) within the energy sector. Several investment vehicles can support the development of sustainable energy projects. Further, innovative financing mechanisms like public-private partnerships should be utilised. Effective policy and regulatory frameworks are essential for attracting investments, fostering competition, and ensuring a sustainable energy sector. Governments should formulate clear and transparent energy policies, enact supportive legislation, and establish independent regulatory bodies to oversee the energy sector. Additionally, efforts should be made to streamline bureaucratic processes, reduce red tape, and enhance governance to encourage private sector participation.

Africa's transition towards renewable energy sources and the development of energy infrastructure faces [several challenges](#) that must be overcome. The initial hurdle lies in securing the substantial upfront investment required for renewable energy projects and infrastructure development. Many African countries struggle to mobilise sufficient financial resources to initiate such ventures. To address this challenge, governments can collaborate



with international financial institutions and private sector entities to pool resources and attract investments. Innovative financing mechanisms, such as public-private partnerships and green bonds, can also alleviate the financial burden.

Inadequate energy infrastructure, particularly in rural areas, poses another challenge. Insufficient transmission and distribution networks hinder the efficient delivery of renewable energy. To address this, governments must [prioritise investment](#) in the development of energy infrastructure, focusing on extending transmission and distribution networks to improve energy access. Additionally, investment in decentralised energy systems, such as mini-grids and off-grid solutions, can be a viable alternative for reaching remote communities where extending the centralised grid is economically unfeasible. Collaborating with international partners and organisations can provide the necessary funding and technical expertise for infrastructure development projects.

Establishing interconnected grids and regional power pools requires substantial investments in transmission lines, substations, and interconnections. Limited financial resources, technical expertise, and geographical challenges complicate infrastructure development. Mobilising financial resources through domestic and international investments, public-private partnerships, and multilateral development banks can support infrastructure projects. Additionally, technical assistance and knowledge sharing from international organisations and experienced industry players can help overcome technical and geographical obstacles.

While challenges exist, concerted efforts by governments, international organisations, and private sector entities can overcome these hurdles. By securing financial resources, promoting technology transfer and capacity building, developing energy infrastructure, and establishing robust policy and regulatory frameworks, Africa can accelerate its transition to renewable energy sources, reduce reliance on traditional biomass and fossil fuels, mitigate climate change effects, and improve energy accessibility across the continent.



Promote Technology Transfer and Capacity Building

Another significant challenge is the [limited technological capacity](#) within African countries for implementing large-scale renewable energy projects. Insufficient technical expertise and local manufacturing capabilities hinder the adoption of renewable energy technologies. To overcome this, governments can promote technology transfer and capacity-building programs in partnership with international organisations and development agencies. These initiatives can focus on training local technicians and engineers in the installation, operation, and maintenance of renewable energy systems. Moreover, fostering technology partnerships and knowledge sharing between African countries and more advanced renewable energy markets can help bridge the technological gap. Encouraging the establishment of renewable energy manufacturing facilities within the region can also reduce dependency on imports.

Enhance Collaboration and Knowledge Exchange

Enhancing collaboration and knowledge exchange among African countries, international partners, and relevant stakeholders is crucial for overcoming the energy crisis. Collaboration can help address common challenges, share best practices, and pool resources for collective progress.

One challenge is the [fragmented nature](#) of energy initiatives across Africa. Each country usually has its own energy strategies and implementation plans, resulting in duplication of efforts and missed opportunities for synergy. By fostering regional cooperation and collaboration, African nations can work together to develop integrated energy plans, share infrastructure, and leverage collective expertise and resources. International partnerships play a vital role in addressing Africa's energy challenges. Collaboration with developed countries and international organisations can facilitate technology transfer, knowledge sharing, and financial support. This can involve establishing joint research and development programs, exchange programs for energy experts, and technology transfer initiatives that promote the adoption of renewable energy solutions.



Knowledge exchange platforms, such as regional energy conferences, workshops, and forums, can bring together stakeholders from various sectors to share experiences, innovative approaches, and lessons learned. These platforms can foster dialogue, encourage collaboration, and facilitate the transfer of technical and managerial expertise. To overcome language and communication barriers, multilingual initiatives and translation services can be employed to ensure effective information sharing among stakeholders. Online platforms and digital tools can also enhance access to information and facilitate virtual collaboration, particularly in remote areas with limited physical connectivity.

Efforts should also be made to promote [South-South cooperation](#), where African countries with more advanced renewable energy sectors can share their experiences, expertise, and technology with countries that are in the early stages of renewable energy adoption. This can create a mutually beneficial environment where countries learn from each other's successes and challenges. By strengthening collaboration, promoting knowledge exchange, and fostering regional and international partnerships, Africa can leverage collective resources, experiences, and expertise to address the energy crisis more effectively. Such collaborative efforts can accelerate the transition to renewable energy, improve energy accessibility, and drive sustainable development across the continent.

Governments Should Raise Awareness Around Energy Efficiency

Promoting awareness and behavioural change regarding energy efficiency and conservation is a challenge that must be addressed. Raising awareness among the population about the importance of energy conservation and adopting energy-efficient technologies is essential. Governments should invest in public awareness campaigns, education, and training programs. Incentives and subsidies for energy-efficient products and services can encourage behavioural change among consumers and businesses, furthering the adoption of sustainable energy practices. Efforts should focus on promoting energy efficiency and conservation.



Governments Should Implement Consistent & Supportive Policy Frameworks

Policy and regulatory frameworks present another obstacle to implementing renewable energy projects effectively. Inconsistent or inadequate policies and regulations create uncertainties for investors and impede sector growth. Governments must formulate clear and transparent energy policies that establish long-term renewable energy targets, regulatory standards, and incentives for investors. Establishing independent regulatory bodies to ensure fair market competition, provide oversight, and instil investor confidence is crucial. Moreover, streamlining bureaucratic processes, reducing red tape, and enhancing governance is essential to creating an enabling environment for private sector participation.

Creating supportive policy and regulatory [frameworks](#) is crucial for attracting private sector investment in off-grid solutions. Governments should engage with stakeholders, including the private sector, to develop clear and consistent policies and regulations. Establishing dedicated energy regulatory bodies can ensure effective implementation and enforcement. Furthermore, regional cooperation and harmonisation of policies can facilitate cross-border energy trade, fostering a conducive environment for private sector involvement.

Encourage African Unity in Solving the Crisis

Finally, African countries should also foster regional cooperation to address the energy crisis, [as they have done](#) with the EU. By sharing resources, knowledge and expertise within the continent, countries can establish interconnected grids and regional power pools. This collaborative approach would facilitate the transfer of surplus energy from one country to areas experiencing shortages, fostering stability and increasing overall energy access. In remote and underserved regions, off-grid solutions like mini-grids and standalone systems present viable paths to electrification. Governments could create favourable conditions for private sector investment in off-grid solutions by implementing supportive policies, streamlined regulations, and financial incentives. Additionally, efforts should be made to promote productive uses of energy in these areas to stimulate local economic development.



Governments must prioritise technology transfer and capacity-building initiatives to enhance local skills and knowledge in the energy sector. [Partnerships](#) with international organisations, educational institutions, and industry experts can facilitate this process. African nations can efficiently build and maintain their energy infrastructure by developing a trained labour force and encouraging technological innovation. Energy efficiency and conservation should be integrated into energy planning and policymaking processes. Governments should promote energy-efficient technologies, encourage the adoption of energy-saving practices in industries and households, and raise awareness about the significance of energy conservation. These measures can significantly reduce energy demand and enhance the overall sustainability of the energy sector.

To foster regional cooperation, strong political will and coordination among multiple countries are necessary. Overcoming political differences and establishing institutional frameworks can be achieved through diplomatic negotiations, dialogue platforms, and regional organisations. Developing dedicated regional institutions and agreements would provide a forum for resolving disputes and create a framework for collaboration.

Enhancing local skills and knowledge in the energy sector through technology transfer and capacity building is another key challenge. Partnerships with international organisations, educational institutions, and industry experts can facilitate knowledge transfer and capacity building. Training programs, knowledge-sharing platforms, and exchange programs can equip the local workforce with the necessary skills. By developing a trained labour force and encouraging technological innovation, African nations can efficiently build and maintain their energy infrastructure.

Conclusion

Addressing the energy crisis in Africa necessitates a comprehensive approach involving diverse stakeholders, including governments, international organisations, private sector entities, and local communities. The challenges to implementing the recommendation of fostering regional cooperation, implementing off-grid solutions, prioritising technology transfer and capacity building, and promoting energy efficiency are [multifaceted](#). However,



these challenges can be overcome through diplomatic negotiations, infrastructure financing, supportive policies and regulations, partnerships for knowledge transfer, and awareness campaigns.

By diversifying its energy mix and strengthening its infrastructure, Africa can overcome its energy crisis. Mobilising financial resources through domestic and international investments, public-private partnerships, and multilateral development banks can support infrastructure development. Improved policy frameworks, including clear and consistent regulations, can attract private sector investment and promote regional cooperation. This will facilitate greater technology transfer, capacity building, and knowledge sharing.

By addressing these challenges and implementing the recommended measures, African countries can make [significant strides](#) towards overcoming the energy crisis and achieving sustainable and accessible energy systems. This comprehensive approach will require collaboration among stakeholders and a concerted effort to leverage available resources and expertise. With a diversified energy mix, strengthened infrastructure, improved policies, and a focus on energy efficiency, Africa can pave the way towards a brighter energy future.

