

Financing Clean Energy Transitions in Africa

Background paper to the Enabling Institutional Investor-Public Partnerships (IIPP) event with the African Green Infrastructure Investment Bank

Africa accounts for nearly one-fifth of the world's population but less than 5% of global energy investment.

Urbanisation and efforts to improve access to energy contribute to an energy demand growth rate in Africa that is twice as fast as the global average. Despite this rapid growth, Africa remains a relatively minor contributor to global greenhouse gas emissions. To date, energy-related carbon dioxide (CO₂) emissions in Africa represent around 2% of cumulative global emissions. CO₂ emissions are set to rise by 25% over the next two decades – although will still account for less than 10% of global emissions – unless sufficient action is taken to transform the continent's energy systems.

Under any scenario, energy investment in Africa would need to rise significantly. In the IEA Stated Policies Scenario (STEPS), which reflects today's policy settings, investment more than doubles between 2020 and 2030, with spending on clean energy investments tripling. To meet the accelerated decarbonisation and energy access goals of the Sustainable Development Scenario (SDS), energy investment would need to triple over the same period, with clean energy spending increasing more than five-fold. Among emerging and developing

economies, sub-Saharan Africa sees the fastest rising call on economic resources devoted to energy investment, from 3% of GDP today to near 6% by 2030. To keep the door open for the world to meet the goal of net-zero emissions by 2050, even greater progress would be needed in boosting investment¹.

Climate-driven scenarios will require both an acceleration of clean energy investment and a major reallocation of capital across sectors. Over the past five years, fuel supply has accounted for well over two-thirds of capital spend in Africa. However, in climate-driven scenarios capital reallocation shifts to capital-intensive renewable power and electricity networks, which grow from just one quarter of spending to more than half by 2030. Spending on energy efficiency and electrification via greener buildings, appliances and electric vehicles (EVs), for example, would need to more than quadruple in the late 2020s to meet sustainability goals.

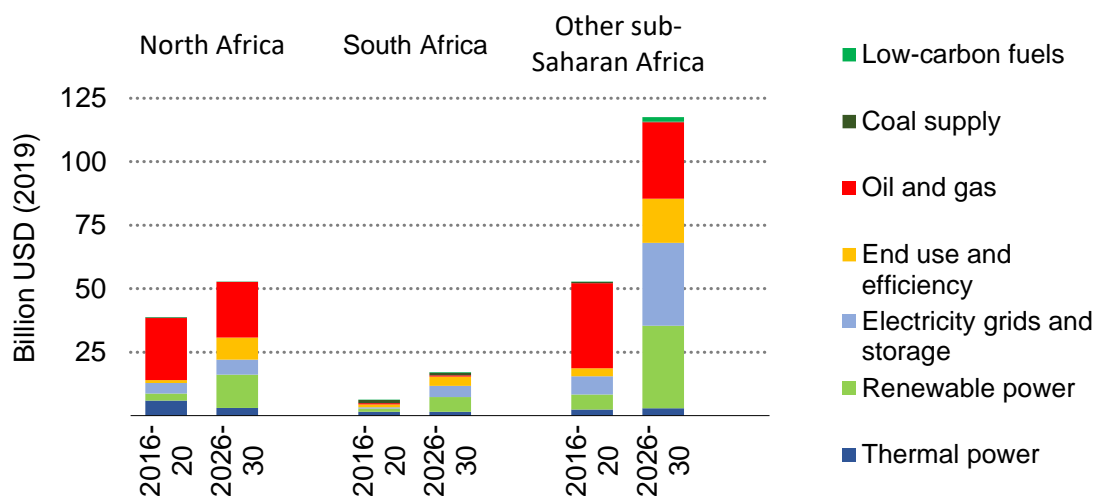
This note summarizes key investment-related findings from recent International Energy Agency reports, both available for [free](#) from the IEA website.

- **Africa Energy Outlook 2019** ([link](#))
- **Financing Clean Energy Transition in Emerging and Developing Economies** ([link](#))

¹ The Stated Policies Scenario (STEPS) reflects an energy pathway based on a sector-by-sector assessment of the specific policies that are in place, as well as those that governments have announced around the world. The Sustainable Development Scenario (SDS) is a pathway that puts the energy system on track to achieve key UN Sustainable Development Goals (SDGs), including universal energy

access by 2030, major improvements in air quality, and a "well below 2 degree" limit on the temperature rise. The Net Zero Emissions by 2050 Scenario (NZE) sets out a narrow but achievable pathway for the global energy sector to achieve net zero CO₂ emissions by 2050 and a 1.5-degree cap on the rise in global average temperatures. For further details, please see the IEA *World Energy Outlook 2021*.

Figure 1. Average annual investment by sub-region and sector in Africa in the IEA Sustainable Development Scenario



Achieving universal access to electricity and clean cooking is critical. Today, 770 million people worldwide live without access to electricity, mostly in Africa. After decreasing 9% annually on average between 2015 and 2019, preliminary data show that progress stalled between 2019 and 2021 globally, and that the number of people without electricity access actually increased in sub-Saharan Africa. Mini-grids and decentralised solutions can serve as least-cost solutions for two-thirds of Africa's population without access. However, investors face challenges around scale, end-user credit risk and currency risk. Innovative pay-as-you-go models have allowed private actors to take a larger role in solar home systems, but mini-grids are still heavily reliant on equity and grants from public sources.

Clean electricity and electrification is central to development and transition strategies but cannot provide all the answers in economies undergoing rapid urbanisation and industrialisation. Transitions in fuels and energy-intensive sectors are essential to achieve deep

transition. Natural gas discoveries in Africa may function as enablers for growth as long as emissions from the value chain, notably methane leaks, are demonstrably minimised. Outside North Africa, gas occupies a small share of the energy mix – only 5% – and developing gas infrastructure is likely to be a major challenge given generally small market sizes and concerns about affordability. There are also potential constraints from growing investor focus on sustainability - around 70% of recent financing for LNG projects comes from countries with net-zero targets. A key challenge is how to ensure that adequate financial channels remain open to support investments that advance sustainable development and emissions reductions without undermining long-term climate goals.

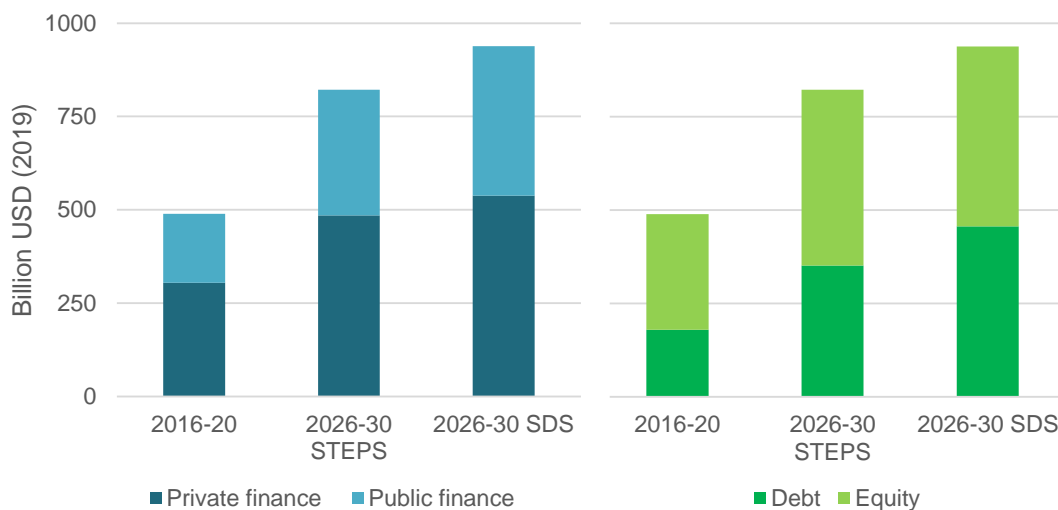
Improving the domestic ecosystem for investing in clean energy, bring down the cost of capital and attracting more foreign private capital, will be critical. Under a climate-driven scenario, the amount of private sector finance increases dramatically to account for well over half the total energy finance in Africa. In parallel, increased public

support for de-risking clean energy investments is also required, especially from international and domestic public finance institutions (PFIs). Over the previous five years, PFIs accounted for less than 5% of energy finance in Africa, but under climate-driven scenarios this more than doubles as they play an important catalytic role.

Mobilising higher levels of investment in capital-intensive technologies will hinge on the increased availability of public grants, blended finance and low-cost debt financing. Climate-driven scenarios see the level of debt financing increase from below 40% of energy investment in 2020 to 50% in 2030, accompanied by an infusion of equity

primarily to fund early-stage project development and riskier markets and segments. Attracting lower cost international capital plays an important role to realise this scale of investments, especially in renewable power, and in kick-starting investment for newer technologies, such as low-carbon hydrogen, and developing complex first-of-a-kind projects in new markets. International funding and assistance are also important for building domestic capacity for financing consumer investments in energy efficiency, as well as helping to improve the financial performance of state owned utilities, many of which face a number of challenges related to cost-recovery.

Figure 2: Source of finance of total energy investment in Africa



Notes: STEPS = Stated Policies Scenario; SDS = Sustainable Development Scenario

Mobilising capital to support clean energy transitions depends on addressing cross-cutting factors that affect the risk-return profile of projects. This includes the need for clear policy laying out energy goals and emissions reduction targets, accompanied by an integrated energy strategy. Investment also tends to be better supported by regulatory reforms focused on pricing signals – such as removal of fossil fuel subsidies or

the introduction of carbon pricing – and creating a market structure that allows for competition and transparent price formation. Ensuring that processes for licencing, permitting, and land acquisition are well designed, and that investors are protected through strong contract enforcement and property rights laws also serves to reduce the risk perception of investors. In our Financing Clean Energy in Emerging and Developing

Economies report, the IEA drew on numerous case studies, including over a dozen in Africa, which provided examples of how these risks can be addressed with successful outcomes (see Annex).

Strategic pan-African partnerships can provide a viable platform to overcome some of the key obstacles for both domestic and international investors. Such initiatives support knowledge sharing across the continent, can allow for the bundling of smaller projects and provide a central point for accessing international pools of capital. Additionally, such initiatives can

enhance regulatory and contractual tools that would allow institutional investors to partner with governments on bankable projects, such as those proposed by the Africa Green Infrastructure Investment Bank's Institutional Investor Public Partnership. With the Africa Continental Free Trade Area now operational, there is now also the impetus to create a coordinated pan-continental approach to green investment, including carbon taxing and impact assessment. This could support access to the growing pools of sustainable capital from advanced economies.

Annex Africa case studies from the recent IEA “Financing Clean Energy Transitions in Emerging and Developing Economies” report

Priority	Country/sub-region	Case study
Harness the readiness of investors to back renewable power	Sahel	Planning for regional integration and large-scale deployment
	Southern Africa	Reducing revenue-related risks with creditworthy intermediaries
	East Africa	Addressing exploration and project development risks
	Burkina Faso	Rolling out infrastructure
	Senegal, South Africa	Lowering financing costs with blended finance
Ease the delivery of reliable and clean power by expanding and modernising grids	Sierra Leone	Promoting PPPs for electrification
Enhancing the financial performance of utilities	Kenya	Restructuring debt to fund access to investments
Build equitable and sustainable models for universal access to modern energy	West Africa	Integrating services and solar products through pay-as-you-go
	DRC, Kenya, Nigeria	Leveraging public concessional finance and impact capital to fund mini-grids
Embed high-efficiency and connectivity into all new buildings and appliances	Sub-Saharan Africa	Addressing multiple barriers for efficiency with international assistance
	South Africa	Developing cooling-as-a-service business models
Leap ahead to invest in more efficient and electrified mobility solutions	Uganda	Developing a local electric bus business
Recast the development model of producer economies	Nigeria	Reducing the emissions intensity of oil and gas production
Lay the groundwork for scaling up low-carbon fuels and industrial infrastructure	Mozambique	Attracting private, international investment into LNG infrastructure