



Africa's Renewable Energy potential | Challenges and investment opportunities



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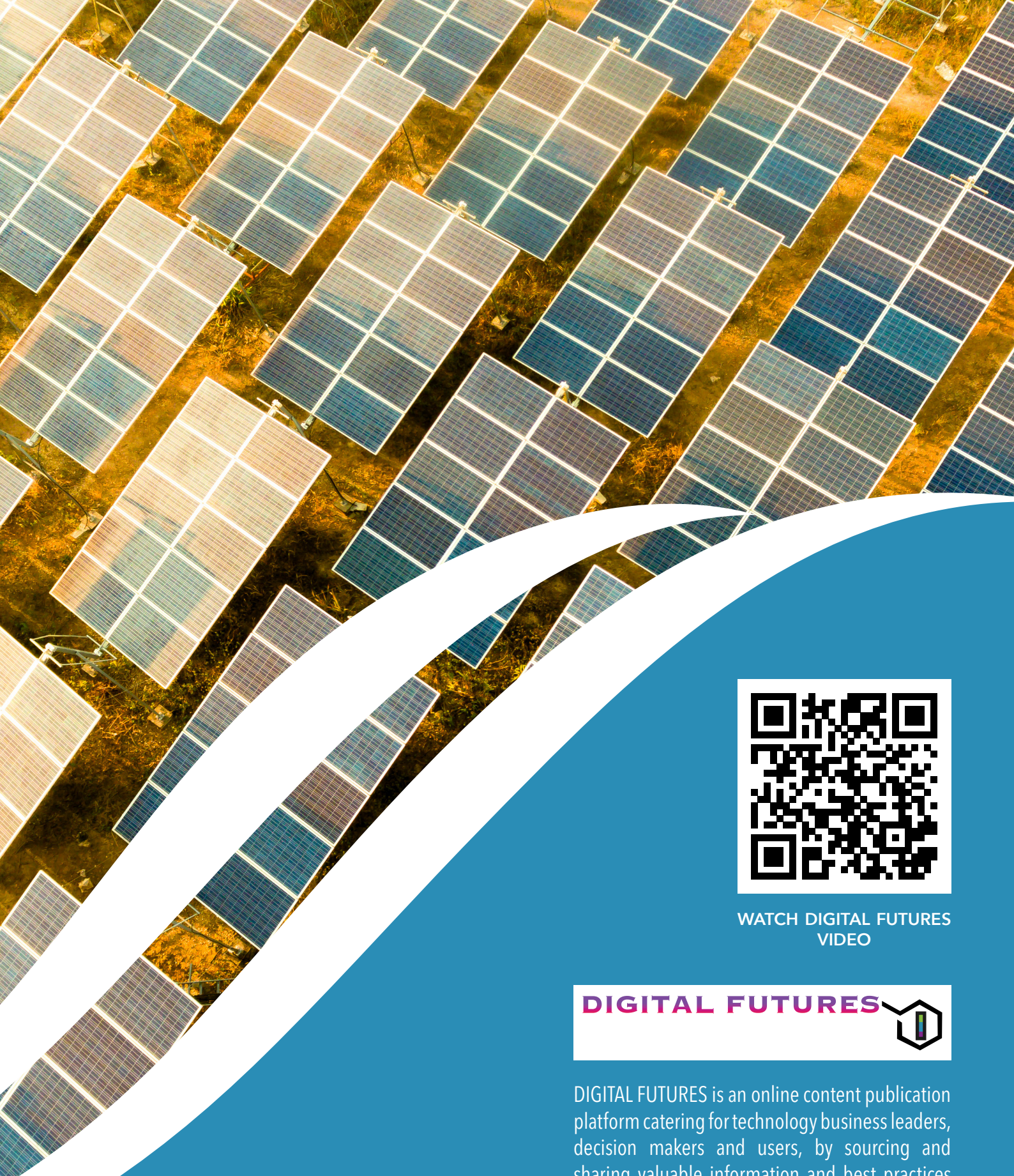
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“Africa can cover almost
25% of its power needs
from local and clean
renewable energy
by 2030”



Introduction

From 2000, Africa's economic growth has been boosted rapidly, as well as the continent's social conditions. Average real gross domestic product reached 3.6% in 2017 and around 4% in 2019. Six African economies developed to feature among the top ten fastest growing economies worldwide. Hence, based on the region's large and increasing population, the necessity for energy is anticipated to double by 2040. Gifted with significant resources of renewable energy, Africa is capable to adopt novel, sustainable technologies and to participate in global efforts to reshape the future of energy grid. Supply untrustworthiness is a major concern which holds back the financial development, as numerous countries have to encounter frequent blackouts and often rely on expensive and unhealthy solutions. On the other hand, clean, original and cost-efficient renewable energy qualifies the region to succeed its economic, social, environmental and climate objectives. Sustainable use and growth of Africa's huge biomass, geothermal, hydropower, solar and wind power, have the possibility to immensely transform continent's current situation.

Renewables offer the chance to take a leap towards a sustainable, and fruitful future for all. Increasing accessibility to dependable, effective and clean energy resources, is a main concern, especially in sub-Saharan Africa.

Around 600 million people out of 1.2 billion in the continent continue to have no access to power, representing the 48% of Africa's population. The Sustainable Development Goal on energy (SDG7) is incorporated in the social, economic and sustainability goals of Africa's Agenda 2063. Africa can cover almost 25% of its power needs from local and clean renewable energy by 2030.



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Modern renewables calculated to 310 gigawatts (GW) can offer 50% of the region's total energy generation capacity. This corresponds to a sevenfold increase from the capacity available in 2017, which amounted to 42 GW. A transition of such scale in the continent's energy asset would demand an average annual investment of USD 70 billion to 2030, resulting in CO2 emission cutbacks of up to 310 megatons annually. The increasing adoption of renewable energy creates new job opportunities coming along with health benefits. From the 10.3 million people that are globally employed in the energy sector, Africa's potential shows very promising with emerging, visionary industrial policies and high caliber skills training under current development. In addition, the renewables market share is estimated to grow even further, contributing to a significant increase in the GDP up to 1.1%. This would mean an improvement in global welfare of 3.7% and more than 24 million jobs in the sector.

As a result, people will benefit from improved healthcare services, particularly in remote areas. It would also enable women's empowerment, who accounted for the 35 percent of the renewable energy labor force in 2016 and whose role will become more dynamic through gender equality and inclusion.

A Ministerial Communiqué entitled "Renewable Energy for Accelerating Africa's Development" underlined Africa's important opportunity for renewables and addressed the emerging issues related to climate change mitigation and adaptation. Over the years, this has been pursued through the development of the Clean Energy Corridors. Furthermore, Clean Energy Corridors in Eastern, Southern and West Africa are assisting African countries to develop power generation and boost cross-border electricity trade.

The Corridors mainly focus on utility-scale development of renewables-based electricity energy with an enhanced trade dimension to benefit from resource efficiency and economies of scale. They were first established within the Eastern Africa Power Pool and the Southern African Power Pool, and then extended to the West African Power Pool.

The Pan-Arab Clean Energy (PACE) initiative offers a regional action scheme to develop renewables in power systems across the Arab region. Its implementation is supplemented by the support of International Renewable Energy Agency (IRENA). The target is to strengthen the investment framework that will enable cost-effective provision of up to a quarter of Egypt's total final energy supply from renewables in 2030. In addition, the Economic Community of Central African States (ECCAS), supports the scale-up of a renewable energy roadmap for the sub-region.

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The roadmap allows a set of particular activities to enhance regulatory, institutional and financial structures and policies for clean energy deployment at regional and national levels.

In November 2018 the Central Africa roadmap was technically validated and set to receive the endorsement of Central African Heads of State. Strategic, result-oriented collaborations, focus on leveraging existing efforts, avoiding duplication and maximizing long-term impact. Strong linkages to regional programmes and initiatives help benefit from synergies and complementarities. The goal is to harness Africa's huge sustainable energy potential through regional infrastructure scheduling to 2030, giving emphasis to all form of resources. [1]

Global transitions in Energy investment

In Africa the demand for coal is at its highest level, while in the rest of the world the developments of other energy technologies are skyrocketing. Global investment in renewable energy was USD 282.2 billion in 2019, up 1% from 2018. Specifically, wind energy investment, both offshore and onshore, was leading the way with USD 138.2 billion, up 6% from 2018, followed by solar at USD 131.1 billion. Battery storage doubled its capacity in 2019 to 106 GW and is expected to surpass 1000 GW by 2040, contributing to cost savings. For this aim, an investment of USD 662 billion is necessary over the next two decades.

Energy-rich countries and large organizations are also showing their intentions to be involved in huge investments and develop towards to a circular carbon economy. Worldwide investment in clean hydrogen keeps rising, with China being the primary investor, followed by the European Union.

Energy investments are strongly linked with activism, enabling not only individual investors, but also large institutions, which manage trillions of assets, to participate. The benefitted parties of international investments are also altering, as cities and not countries, are now the subjects for investment decisions.

Measuring the necessary investment demand for the energy transition is a difficult task, which depends on the improvements of regionally diverse energy grids and unique policy frameworks. The World Energy Council's World Energy Scenarios report suggests the use of investments of approximately USD 670-890 billion annually, merely for power generation. To enforce such vast investments, supplementary policies should be developed and implemented, sometimes opposite to the grain of established market structures.

1. IRENA. (2019, January). Scaling up renewable energy deployment in Africa.

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Given this challenging situation, innovative infrastructure is rapidly emerging and long-term planning is essential for maintaining, decommissioning and repurposing options. Novel energy access and infrastructure investment, however, is not all or only about meeting the costs of adding new renewable electricity generation or to drive to decarbonization via accelerating investment into decentralized renewable electrification. Facilitating new and better human and economic development opportunities, and a healthy planet, requires investment to also flow to other uses of power which cannot be electrified – clean heat and clean fuels. A next era in digital and physical productivity, in tourism and trade of energy and non-energy resources, goods and services, is emerging. [2]

The African Energy investment panorama

The cashflow from investments into Africa is shifting. Specifically, in sub-Saharan Africa it reached USD 49 billion in 2019, up to 5.1% compared to 2018. Cashflows worldwide have exceeded standard official aid, since the mid-1990s, and in 2020 they are able to surpass foreign direct investment flows to low and middle-income countries, including sub-Saharan Africa. The African Development Bank Group with the aid of several associations and organizations, regional or global, has worked to address barriers caused by the issue of multiple currencies and exchange rates, creating opportunities for countries to pool their monetary resources and work for common objectives, including energy infrastructure investments. Banks are increasingly facilitating microfinance opportunities – enabling social entrepreneurs to transform rural access challenges using new business models which combine data and renewables.

The development of integrated clean energy technologies also reveals a novel opportunity for mid-scale financing solutions to help elude the challenge of rapid urbanization without corresponding development of industrial and manufacturing sectors. New financing paths which include evolving synergies across several sectors of the economy, and which support and enhance cost-efficient and productive clean energy access for all, are significant in order to avoid the disruption of climate mitigation by the social impacts energy agenda. Based on the above, there is still a realistic hope for Africa; an energy transition that empowers the continent to jump to a new hydrogen economy, the development of circular carbon economy models, and access to new global trade and digital economy opportunities.

2. Wilkinson, A., (2020, February). CEO view: Africa's energy transition investment challenge. World Energy Council.

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“The IEA’s new Sustainable Recovery Plan shows it is possible to simultaneously spur economic growth, create millions of jobs, put emissions into structural decline and provide a substantial boost to the resilience of energy systems”

adds Maximilian Jarrett, Africa Program Manager of the International Energy Agency (IEA),

“It’s a plan that could significantly benefit the energy sector and wider economy across Africa”.

“Renewables, thanks to their decreasing costs and greater resilience, as demonstrated during the coronavirus pandemic, are helping with the energy transition on a global scale, enabling society to make progress on several of the seventeen Sustainable Development Goals”

concludes Matteo Di Castelnuovo, Professor of SDA Bocconi and Director of its Africa Lab. [20]

20. RES4Africa Foundation. (2020). The impact of Covid-19 on Africa’s energy sector.

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The African region has followed a development path which is projected to lead to a 100% increase of its energy demand by 2030. Since 2015 this was motivated by its growing population and raising economy. Taking into consideration the region's abundant resources, renewable energy has still to play a critical role to cover this exponential increase in energy demand and provide modern services to the population with no access to energy. Investments are necessary to support this initiative via a well-established regional scheme in Africa, which will include empowerment frameworks to promote development, cultivation of associated knowledge and technical capabilities.

International and local enterprises' involvement in the continent, would be a fundamental factor in the process of Africa's transition to more trustworthy, cost-effective and sustainable energy grids, due to their substantial impact on its effort. Such businesses will boost co-operation and co-ordination with programs and strategies and they will keep aligning their actions with other relevant continental initiatives to scale

up renewables' uptake in the continent's long-term energy plans. Technical advice and capacity building will be intensified and extended, in order to maintain the use of the continent's renewable energy prospect to meet and go beyond current goals. This can be achieved by improving the conditions for cross-border renewable power trade, and by conducting refined resource assessments that categorize the viability of project-specific areas and investment outlook. A wider portfolio of such technical assistance will also reveal demanding matters relating to energy statistics, policy mechanisms and project facilitation.

Investment activities will continue to be engaged in initiatives to ensure energy access, in order to create decentralized renewable energy solutions to cover the demand of at least half of the African population. This continues to be an important task for sustainable development and prosperity. African emerging market will arrange and rank augmenting social and economic benefits of renewable energy access to develop agriculture and food security, boost human health, support inclusion of women, broaden refugee settlements and decrease poverty. The pandemic has additionally enhanced the necessity for a worldwide clean energy shift, in order to ensure a sustainable recovery path and a less volatile and vulnerable economy in the future. African leaders and policy makers are in front of a historical possibility, to manage their recovery drivers in response to the crisis, by extending their efforts in accomplishing the Sustainable Development Goal 7, which aims at ensuring access to affordable, reliable, sustainable and modern energy for all by 2030. [21]

21. IRENA. (2019, January). Scaling up renewable energy deployment in Africa.

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