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The Africa Energy Transition Program (AFRETRAP)

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The African Energy Commission (AFREC) has launched the Africa Energy Transition Program (AFRETRAP) which aims to transform and modernize Africa's energy sector. Energy is a key enabler of long-term development and socio-economic progress. With this understanding, a common energy vision for Africa has been defined that targets the universal access to affordable, modern and clean energy. This vision is embedded on development and aligned with the African Union's (AU's) "Agenda 2063 – The Africa We Want", the United Nation's Sustainable Development Goals (SDGs) and the Paris Agreement on Climate Change.

AFREC, a specialized agency of the AU, has defined the 'Energy for Development' vision as its guiding principle (AFREC, 2001). The transformation of the continent's energy sector is to be systematically approached by AFRETRAP, which will be developed by AFREC. With African ownership set out as one of its core principles, the program will address the prevailing energy challenges from within the continent and pursue endogenous development. It strives to dismantle the dependency on fossil fuels and carbon intensive energy and to replace it with an energy model that is based on cleaner and affordable energy sources.

There are several obstacles which impede the establishment of a modern and sustainable energy system in Africa. Despite accounting for 17% of the world's population with its 1.3 billion people (United Nations , n.d.), Africa is only responsible for 3% of global primary energy[1] consumption (BP, 2019). This consumption, however, is largely based on traditional biomass, such as charcoal and firewood, and on fossil fuels. Sub-Saharan Africa is the only region that con-

Abstract

In a more and more climate change threatened world, Africa's energy vision should be premised on moving from an energy landscape based on underdeveloped and carbon intense pathways to a modern, clean and decentralized energy system. This transition is a critical enabler of meaningful and endogenous socio-economic development. While the continent may face a broad set of challenges in achieving this vision, it has at the same time the opportunity to avoid the fossil fuel lock-in that many industrialized countries face and to take advantage of vast supplies of untapped energy resources and/or any stranded asset problem. The Africa Energy Transition Program in the making under the auspices of the African Energy Commission forms a continent-wide and coordinated approach in facilitating the required transformation for the realization of Africa's development aspiration.

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Dans un monde de plus en plus menacé par le changement climatique, l'Afrique doit, en matière énergétique, adopter une approche fondée sur la transformation de son modèle, qui s'appuie sur des structures sous-développées et à forte intensité de carbone, vers un système de production d'énergie moderne, propre et décentralisé. Cette transition est essentielle pour permettre un développement socio-économique véritable et endogène. Si le continent est confronté à de nombreux défis dans la réalisation de cet objectif, la possibilité s'offre également à lui de se protéger contre la dépendance aux énergies fossiles qui touche de nombreux pays industrialisés et de tirer parti des vastes réserves de ressources inexploitées et/ou sous-utilisées. Le programme africain de transition énergétique en cours d'élaboration sous les auspices de la Commission africaine de l'énergie relève d'une approche coordonnée à l'échelle du continent dont l'objectif est de faciliter la transformation nécessaire à la réalisation des aspirations de l'Afrique en matière de développement.

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En un mundo cada vez más amenazado por el cambio climático, la visión energética de África debería fundamentarse en la transición de un panorama energético basado en vías subdesarrolladas e intensivas en carbono a un sistema energético moderno, no contaminante y descentralizado. Esta transición es un factor crítico para posibilitar un desarrollo socioeconómico significativo y endógeno. Aunque el continente deba afrontar un amplio conjunto de desafíos para lograr esta visión, tiene al mismo tiempo la oportunidad de evitar el bloqueo de los combustibles fósiles al que se enfrentan muchos países industrializados y de aprovechar los vastos suministros de recursos energéticos sin explotar o cualquier problema de activos varados. El Programa de Transición Energética de África, que se está elaborando bajo los auspicios de la Comisión Africana de Energía, constituye un enfoque coordinado en todo el continente para facilitar la transformación necesaria que permita alcanzar las aspiraciones de desarrollo de África.

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tinues to witness an increase in use of firewood and charcoal contributing to land degradation and deforestation. The consumption of this type of polluting and low grade energy occurs predominately at household level for cooking purposes and not only poses a threat to the environment, but affects moreover the health of the people, in particular of women and children. The International Energy Agency (2017) highlighted that over 0.5 million people in sub-Saharan Africa have prematurely lost their lives as a result of the long term consequences of burning biomass at home. Apart from the risks on health, energy consumption based on traditional biomass has moreover had an environmental impact. It has contributed to deforestation, land degradation and desertification on top of the emission of carbon-monoxide and other pollutants to the air.

The energy landscape and the provision of electricity in the continent are moreover characterized by a centralized, large-scale and one directional model. Sub-Saharan Africa has the world's lowest electrification rate with only a few countries with an average access rate of more than 50%. The situation in the rural parts is dire. Most parts do not have access to electricity at all and rural electrification is as low as 5% in many African countries. The lack and unreliability of electricity access impede furthermore the development of a competitive and thriving private sector. In fact, sub-Saharan Africa is the region with the highest proportion of businesses without access to reliable electricity.

The absence of a functioning and modern energy system is prevailing despite the existence of vast sources of energy that are yet to be exploited. Although natural gas is the least polluting fossil fuel, only 1% of conventional natural gas deposits in sub-Saharan Africa have been accessed. In the short- and mid-term, tapping into the natural gas reserves could facilitate the development of important economic sectors, such as agriculture, but also allow increased and safer energy use at household level. In the long run, however, the reliance on fossil fuels is unrealistic due its carbon intensity and since fossil fuels are non-renewable and will deplete at some point (in the case of oil this might happen in a few decades in some countries).

Another challenging feature of the continent's energy landscape is the contrasting production and usage pattern across countries and regions. For instance, four of the 55 African countries alone account for 88% of total primary energy consumption. On the supply side, on the other hand, ten countries dominate together the production of fossil fuels. South Africa holds 96% of the continent's recoverable coal reserves. Within countries, there is also often an imbalance in energy access between the urban and rural parts. Since intra-African energy trade is underdeveloped, these asymmetries in the energy model impose major constraints in the efficient allocation and utilization of energy for development, especially in countries with low energy access.

There are also deficiencies in the mobilization and generation of capacities. Africans in and outside of the continent have indeed significant knowledge on the region's socio-economic, cultural and ecological context. These knowledge and capacities, however, are scattered and unorganized and thus need to be pooled together. The future energy model will also require a larger amount of highly skilled and motivated people that will advance the continent's energy transition.

By addressing these challenges, Africa can materialize on the many opportunities lying ahead of the continent. Unlike many of today's industrialized and emerging economies, Africa has the privilege to avoid a lock-in to carbon-intense development pathways. Instead of building and investing heavily in high emission infrastructure based on fossil fuels, many African countries have the opportunity to leapfrog dirty energy and create a clean and sustainable energy model from the start. The continent can avoid the expansion of centralized and large-scale power grid systems and much rather build decentralized and interconnected electricity networks that will increase access and reliability. In line with other landmark agreements and initiatives, including the Agenda 2063 or the Paris Agreement, there is a set of key principles that will guide the energy transition. Among other principles, African leadership and ownership are critical pillars of an initiative of this magnitude.

In accordance with the guiding principles, seven key strategic objectives need to be accomplished in order to achieve Africa's energy vision. These are:

1. Energy infrastructure for economic and social development
2. Alignment with the Paris Agreement on climate change and a strong manufacturing sector for local production of renewable energy technologies
3. Long-term strategic planning towards smart, people-centred, interconnected and distributed renewable energy systems
4. National, regional and intercontinental gas pipelines
5. Development of an integrated African electricity market
6. Low- to zero-carbon energy trajectory and decarbonization of the energy sector
7. Strengthening energy systems innovation and leveraging the potential of social innovation

The Africa Energy Transition Program (AFRETRAP) aims to support the achievement of these objectives. It will be implemented under the auspices of the African Energy Commission (AFREC). It takes the regional diversity and heterogeneity in terms of energy access and mix into consideration and aims to define context-specific strategies for a transformative result. It will facilitate the energy transition by supporting key stakeholders with technical advisory services, targeted research and analysis and strong engagement. These activities will be inclusive of

stakeholders at national, regional and continental level. AFRETRAP will design frameworks that can enhance the development of sector-specific, technologically detailed, policy-relevant and country-driven strategies that are in line with existing national development agendas.

The program has a multidimensional approach and will operate in different phases. In the first phase, AFRETRAP will identify and evaluate existing and past initiatives that target the challenges encountered in Africa's energy sector at the national, regional and continental level. It will also evaluate the extent to which existing strategic plans and visions across countries and regions are compatible with the vision of AFRETRAP. This stocktake will draw from the knowledge base of AFREC and other relevant energy sector bodies, stakeholders and academia. The first phase will also aim to mobilize and build capacities of individuals as well as relevant institutions that will together shape and guide the energy transitions.

Following the preparatory activities, the program envisions to focus in its second phase on frontrunner countries where the energy vision will be implemented first. The program will select small teams of experts for each of the five regions of Africa[2]. These expert teams will formulate transition roadmaps for their respective regions and will engage academia, research institutions and other relevant stakeholders in the process. The roadmaps will be captured in detailed narratives that will account for the heterogeneities in terms of energy systems and the wider development context. Once defined, the regional roadmaps will inform country-specific pathways tailored towards at least one country per region. These frontrunner countries will be selected based on their analytical and engagement capacities and the willingness of the government to support the program's transformative approach. The third phase of AFRETRAP will build on the experiences and lessons learned from the implementation in the pioneering countries and it is envisaged to ultimately expand the program to all African states. These three phases of AFRETRAP will be implemented in a time span of 6-7 years and will meaningfully advance the transformation of the continent's energy sector.

The African Energy Commission (AFREC) is the institution that will develop and coordinate AFRETRAP and liaise with all relevant stakeholders. AFREC has acquired extensive knowledge and data on Africa's energy landscape since its launch in 2008. It focuses on five different sectoral themes: 1. 'Africa Energy Transition'; 2. 'Bioenergy'; 3. 'African domestic market for oil products and natural gas'; 4. 'African energy efficiency'; and 5. 'African Energy Information System (AEIS)'. AFRETRAP falls directly under the first theme 'Africa Energy Transition', but serves moreover as a vision for the commission's entire energy program.

South Centre supported and advised AFREC in the initial design of the Energy Transition Program.

Endnotes:

[1] Primary energy is the type of (raw) energy found in nature that can be used directly without further modification through human intervention. Primary energy can come from renewable and non-renewable sources. The former include for instance solar, wind or biomass and the latter include energy deriving from fossil fuels such as oil or coal.

[2] i.e. North Africa, East Africa, West Africa, Central Africa and Southern Africa

References

African Energy Commission (AFREC, 2001). Convention of the African Energy Commission. Available from https://afrec-energy.org/Docs/En/PDF/2012/convention_en.pdf.

BP (2019). *BP Statistical Review of World Energy 2019.* Available from https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2019-full-report.pdf.

International Energy Agency (IEA, 2017). *Energy Access Outlook 2017.* Available from https://www.iea.org/reports/energy-access-outlook-2017.

United Nations (n.d.). Population. Available from https://www.un.org/en/sections/issues-depth/population/index.html.

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