



Harnessing renewable energy for development in the **SAHEL**



Visionary note



INTRODUCTION

The world is undergoing a fundamental shift in energy from centralized fossil fuel-based systems to increasingly decentralized renewable energy systems at scales to suite every energy need. Limited energy infrastructure, population spread over vast areas and an arid climate in the Sahel was a disadvantage but is now an advantage. The Sahel has unmatched renewable energy availability, the technologies required to utilize this energy can be scaled to meet every need and installed where ever energy is needed. Furthermore, the Sahel can avoid costly lock in of centralized energy systems in areas previously without electricity and upgrade existing systems creating energy security. Perhaps most importantly, energy is an essential part of meeting people's aspirations and is a precondition for wider economic and social development. The document below sets out the vision, context and opportunities we have to harness renewable energy for development in the Sahel.





VISION

We have a vision for the Sahel. One in which everyone has access to energy by 2030, in their neighborhoods and cities, thriving businesses, enterprises, productive activities, house-hold energy easing the burdens especially on women, and empowering the local economies. This vision is feasible with commitment and political will. It demands a much more rapid roll-out plan of energy investments beyond what has been achieved in the past. Fortunately, the sharp fall in prices of solar and wind energy systems, combined with similar trends in battery storage, provides incentive and the momentum to accelerate actions on the ground, while the flexibility and speed of solar installation technologies further ensure that there is a good match of scale, suitability and responding to the urgency. This is a vision for the expansion of opportunities into energy services in every urban neighborhood, in each village and camp, in which renewable energy provision can offer fairer, more sustainable livelihoods

for families, farmers, entrepreneurs, healthcare centers and schools, small and medium-sized businesses, and multiple service providers.

There are huge potentials of renewable sources of energy in the Sahel region that needs to be harnessed in driving socio-economic development and support the achievement of the Sustainable Development Goals (SDGs), and the six key priorities highlighted in the UN Support Plan for the Sahel: cross-border cooperation, resolving conflicts, promoting growth, building climate resilience, promoting access to renewable energy, and empowering women and youth. As an enabler, energy is not an end in itself, but enables the delivery of a variety of services essential for development and improved quality of life in the region. No progress can be achieved in development without energy. It plays a critical role in poverty reduction, and its absence is a major constraint on economic growth.

A renewable energy vision is deeply interrelated, and at the frontline of the global priority of addressing climate change. The transition to renewable energy is pivotal in decarbonizing global economic growth and fostering development and the wellbeing of people. The Sahel remains a global hotspot of climate impacts and vulnerability. While the region has contributed the least to total global GHG emissions, Sahel countries strongly believe that it is in their interest to quickly transition towards renewable energy systems. Not only does such visionary leap-frogging avoid costly lock-in to outdated, risky and dirty energy systems, it also saves costs.

As flagbearers in setting in motion such an ambitious transition to renewable energy, the Sahel countries could easily inspire and exert pressure on larger economies to do the same.

While the Sahel is at a crossroads from various standpoints of security, stability, fragility, and poverty, it also has huge endowments in human and natural resources to transform the well-being of its people. The hopes and aspirations of the young majority of the Sahel, in particular, is a future that offers better living conditions and optimism. Such a transformation is feasible, and demands a holistic approach to energy planning, which increases access to energy by the productive sectors at different levels and scales.

The Sahel, like most of Sub-Saharan Africa, is facing a chronic energy deficit. Scarce and unpredictable power supplies combined with high

electricity tariffs constrain development of businesses and economic activities, so that business rely heavily on costly electricity from diesel generators and homes rely on expensive battery powered torches or dirty and often dangerous kerosene for light. Electrification has followed a centralized model, in which the utility, whether government-owned or private, generates and distributes electricity through the grid to customers that can afford to pay high connection costs. This approach can also create brittle power systems that expose businesses and homes to a number of risks along the power supply chain ranging from inadequate distribution infrastructure creating fault and cutting power to fuel supply shortages limiting generation. This model requires a relatively large investment in power plants and transmission and distribution infrastructures, but leaves out many potential customers in both productive and domestic sectors. Further, this form of power generation and distribution has yet to take advantage of new innovations in the sector.



A PARADIGM SHIFT IN ENERGY

The Sahel renewable energy program is oriented towards a decentralized, distributed renewable sources of energy that offer an unprecedented opportunity and ownership to power the development aspirations of the region. Using a combination of technological and engineering innovations, there are varieties of new delivery models in the power sector that offer a transformation of not only access to power, but also ownership and control, at the local level. Renewable energy sources, in particular solar, are remarkably diverse and flexible, offering the generation of electricity on a spectrum from solar lanterns, solar home systems, standalone mechanical equipment requiring power, micro/mini-grids, to larger grid with 24/7 reliable on-demand power. Power generation

can be as small as a few Watts to as large as hundreds of mega-watts. This flexibility, modularity, scalability, and pre-fabricated nature, makes it possible to install a wide range of renewable energy in a short period of time for a variety of end-uses, at various locations simultaneously. Renewable energy technologies can provide adapted energy services across society: from very isolated rural locations, periurban areas, to big cities, matching design with the availability of financial resources and energy service requirements. Given the sparse nature of rural settlements and diverse livelihood activities across the Sahelian region, renewable energy is the primer for real transformations based on concrete experiences and social arrangements.

TRANSFORMING THE RURAL ECONOMY WITH ENERGY

The main source of livelihood for the majority of the population in the Sahel is agriculture, which is almost exclusively rain-fed, small-scale farming and livestock-keeping, combined with a range of off-farm activities. Even though farming constitutes the primary engine of rural economic development, no comprehensive energy strategy has ever been developed for this key sector, which continues to rely on human and livestock muscle as the main source of power. As women comprise a large proportion of the labor force on smallholder farms, modern energy access in the agriculture value chain

can greatly contribute to their economic empowerment and gender equality in the rural labor force. The condition of women will greatly improve by providing renewably powered energy services for processing crops, milling grain, irrigating fields, cooling and heating systems for product storage, and transporting them to market. The small-scale farm sector will be the key focus of the Sahel renewable energy program, alongside the related food value chain.

In addition to the prominence of the agriculture sector, a wide range of micro and small enterprises in manufacturing

and service sectors are critically important in rural and peri-urban areas, providing income generation opportunities especially for youth, and higher quality of life. The transformation of those productive sectors will require energy services that can easily be provided by renewable sources in a relatively short period of time. In a large number of situations, the energy

demand is relatively low, and thus power projects must either have low return on investment or charge unaffordable tariffs. Therefore, it will be important to stimulate demand in order to take advantage of economies of scale on the supply end, hence making investments in renewable energy systems more attractive.



DRAWING ON RENEWABLE ENERGY DEPLOYMENT LESSONS

The Sahel Program on renewable energy will take advantage of lessons learned from the wide range of innovations in policy instruments and delivery mechanisms that have facilitated the deployment of renewable energy technologies across the world. Special attention will be accorded to cooperative business models, able to distribute energy with meaningful involvement of the community. Cooperatives have proven to be a successful model for rural electrification across Europe, North America and parts of Asia, bringing jobs, training, and revenues to the community alongside electrical power.

The Sahel renewable energy program must be genuinely based in the region and complement existing efforts that are aligned and owned by African countries. A strategic orientation of the Sahel Renewable Energy program will be in its engagement with other initiatives such as the Africa Renewable Energy Initiative (AREI), the newly launched Least Developed Country Renewable Energy and Energy Efficiency Initiative for sustainable Development (LDC REEEI), and others operating in the region.



PRINCIPLES

The Sahel Program will be guided by a set of principles aligned with these two initiatives, that underline the conditions under which the renewable energy transformation needs to be undertaken. Those seeking to partner with the Program will need to subscribe to these principles and associated values, which include:

- ➔ The Sahel leadership and ownership;
- ➔ Transformative and programmatic approaches;
- ➔ Aligned with the national development agenda and country-driven programs that are rooted in local and national realities;
- ➔ Leapfrogging to the best available, smart, modern, distributed renewable energy systems that enable a transition through low to zero carbon futures;
- ➔ Multi-stakeholder engagement and social and environmental safeguards as essential elements of sustainable solutions;
- ➔ Strengthening conducive environments at all levels to enhance wider participation and public-private sector engagement;
- ➔ Country-driven as countries are sovereign in their choices and decision;
- ➔ Solidarity and cooperation among the countries in the Sahel;
- ➔ Leveraging the roles of government and the private sector accordingly.



STRATEGIC ORIENTATION

The approach of the Sahel Renewable Energy Program is tailored towards supporting transformative change across sectors, with a focus on policies and programmatic actions with wide-ranging impact, rather than simply specific renewable energy installation projects on the ground. The program shall simultaneously function across the strategic, technical, policy, and partnership dimensions, and at local, national, regional and international levels. Building on the UN Strategy for the Sahel, the program will leverage on the political backing, prioritization and

resource mobilization from a broad range of actors, including the UN itself, multilateral development institutions, public climate finance institutions including the Global Climate Fund, bilateral and South-South development partners, civil society and academia. The UN Support Plan for Sahel offers tremendous opportunity for coherence, coordination and collaborative framework for effective engagement in support of the endogenous development aspirations and visions already being pursued by the region.

For more information, please contact the Office of the Special Adviser for the Sahel: rossigno@unhcr.org or Ishmael.dodoo@undp.org