KONRAD ADENAUER STIFTUNG

Barriers for the Uptake of Renewable Energy Capacity in Sub-Saharan Africa

POLICY BRIEF

Written by: Open Capital

02/25

kas.de

Recommendations

There are several challenges that have slowed growth in the uptake of renewable energy across SSA and these can be grouped into regulatory, financial and technical barriers. Interventions to these challenges include:

1. **Policy and regulatory interventions**
- Strengthen local advocacy institutions by educating them on how to lobby governments to implement effective policies, highlighting both short- and long-term benefits.
- Support governments and regional blocs in developing and updating existing renewable energy policies by leveraging best practices across the continent and helping draft and implement proven renewable energy generation policies.

2. **Financial interventions**:
- Set up a dedicated revolving debt fund aimed at providing concessional and long-term finance to the C&I sector, which often is overlooked by concessional funders yet offers stronger energy access/reliability and financial return on investment (ROI).
- Design and launch risk mitigation products (e.g., guarantees) for lenders to catalyze private capital into the sector, especially for C&I solutions, as donor-funded risk mitigation products typically go to smaller-scale household technologies/projects, which are not applicable for C&I projects and solutions.

3. **Technical interventions**:
- Partner with standards and certifying bodies to develop and enforce clear product standards for renewable energy products, enabling high-quality products to be easily differentiated.
- Analyze the available literature focused on the renewable energy sector and commission new, unique reports that address key knowledge gaps and provide actionable recommendations.

Introduction

Energy access and reliability remain major challenges in SSA, as only 47% of the population has access to electricity - well below the global average of 90%.[1] Low energy access is largely due to insufficient grid coverage, particularly in rural areas which leaves millions of people without basic energy access. Energy access varies widely across SSA countries with many governments lacking robust and supportive energy policies to properly promote and sustain energy sector development, which typically leads to weak grid coverage. Rising energy demand, driven by population growth and industrialization, is expected to widen the energy access gap unless urgent action is taken.

Renewable energy provides SSA countries with an opportunity to develop long-lasting, clean, and reliable energy supply solutions that will help them meet their growing energy needs. SSA's renewable energy sector utilizes diverse energy sources, including solar, wind, hydro, geothermal, bioenergy, and biomass technologies.

By expanding the use of their abundant renewable energy resources, SSA countries stand to achieve far-reaching economic, social, and environmental benefits that will improve the livelihoods of its citizens. Some of these benefits include economic growth and job creation, health benefits, energy access in rural regions, and climate resilience and environmental impact, among other benefits.

This policy brief highlights key public and private actors, their role in the wider renewable energy ecosystem, and lessons learned from existing operations. It also considers the key barriers hindering faster uptake of renewable energy solutions and suggests corresponding interventions, designed to provide actionable guidance to stakeholders.

Barriers to Increasing Renewable Energy Solutions

This section breaks down key market barriers into three main buckets – policy, financial and technical. Policy barriers, such as inconsistent policies and weak law enforcement, are the most dominant challenges in SSA's renewable energy sector and often create uncertainty for investors, hindering private sector participation. Financial barriers lead to limited access to capital for players while technical barriers limit the scalability of renewable energy solutions.

- **Policy & Regulatory Barriers**:
    - *Inconsistent law enforcement and high levels of corruption*: In many SSA countries, policies are inconsistently applied and ineffectively enforced. Regulatory frameworks that govern the renewable energy sector may be bypassed or selectively enforced based on political interests, bribes, or personal relationships, leading to funds being channelled to non-renewable energy projects and an overall de-prioritization for the sector. For example, in Uganda, the

[1] IRENA, SSA – Policies and Finance for Renewable Energy Deployment, 2024, https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2024/Jul/IRENA_SS_Africa_policies_finance_RE_2024.pdf.

Bujagali Hydroelectric Power Station was reported to have had financial mismanagement and corruption increasing the project's cost to $1.3 billion from $580 million.[2]

- *Vested interests*: In some countries, entrenched interests from powerful groups tied to fossil fuels or conventional energy slow down the transition to cleaner energy solutions. In countries like Benin, influential families with vested interests in fossil fuels or other traditional energy sources lobby against renewable energy policies, slowing progress and making government investment in renewable energy projects more challenging.[3]
- *Frequent policy shifts*: Shifts in policies, often due to government's changing priorities, further cause confusion amongst implementers and discourage external investment due to increased risk perception. In some countries, the government keeps changing their electrification strategies from emphasizing grid extension to prioritizing off-grid solutions by passing new strategies, creating confusion and uncertainty among developers

- **Financial Barriers**:

  - *High investor risk perception*: Foreign investors often view renewable energy projects in SSA as high-risk due to factors such as policy and regulatory uncertainty, political and economic instability, business model challenges, and company-specific risks. To achieve clean energy transformation, an estimated $70 billion investment is required across African nations by 2030.[4]
  - *Varied international funding flows*: International funding varies significantly between countries, usually due to various commercial, economic, impact, and political factors, further limiting the progress of regions like Central Africa, which only attracts 2% of international funds. Countries with less renewable energy sector progress like South Sudan and Chad struggle to secure such investments, further excluding them from large-scale renewable energy initiatives.[5]
  - *High setup and operational costs*: The cost of setting up large-scale renewable energy plants, such as hydropower plants or solar farms, involves high upfront costs of construction and include significant indirect expenses such as energy storage, monitoring systems, and ongoing maintenance. This makes large-scale renewable energy projects often unaffordable, limiting their scalability and uptake in many markets.[6]

[2] Center for Public Impact, The Bujagali Dam Project in Uganda, https://centreforpublicimpact.org/public-impact-fundamentals/the-bujagali-dam-project-in-uganda/?
[3] Oxford Academic, Renewable Energy in Benin: Current Situation and Future Prospects, 2023, https://doi.org/10.1093/ce/zkad039.
[4] IEA, Africa Energy Outlook, 2022, https://iea.blob.core.windows.net/assets/220b2862-33a6-47bd-81e9-00e586f4d384/AfricaEnergyOutlook2022.pdf.
[5] AfDB, Financing a Just Transition in Africa: Challenges and Opportunities, https://www.afdb.org/sites/default/files/2022/12/09/financing_a_just_transition_in_africa-challenges_and_opportunities_final_1_2.pdf.
[6] IMF, Harnessing Renewables in SSA: Barriers, Reforms and Economic Prospects, 2024, https://www.imf.org/en/Publications/staff-climate-notes/Issues/2024/10/08/Harnessing-Renewables-in-Sub-Saharan-Africa-Barriers-Reforms-and-Economic-Prospects-555077.

- **Technical Barriers**:
  - *Poor infrastructure and limited upgrades*: Limitations in the uptick of renewable energy often have been a result of limited investment into the development of infrastructure focused on renewable energy generation. Poorly designed infrastructure coupled with underfunded maintenance, leads to reduced efficiency.
  - *Dumping of substandard products*: Lack of clear and consistent technical standards for renewable energy technologies results in suboptimal products entering the market, both for household and C&I uses. Without defined quality benchmarks, many of these products fail prematurely, which erodes consumer confidence and limits the broader adoption of renewable energy solutions.[7]
  - *Project complexities*: Lack of standardized technical specifications complicates the design, procurement, and implementation of large-scale projects like solar farms. For example, the Corbetti Geothermal Power Project in Ethiopia faced significant delays due to inconsistencies in technical standards leading to prolonged negotiations and inefficiencies in implementation.[8]

Potential Interventions

The interventions presented are potential initiatives that could be championed by a variety of ecosystem players – ranging from governments to donors to private sector actors.

Policy and Regulatory Interventions

Support local advocacy groups, such as civil society and industry associations, to translate member input into actionable policy reforms: Advocacy groups, including civil society organizations and industry associations play a pivotal role in fostering an open environment for sharing challenges and potential solutions in critical focus areas. Their efforts aim to drive systemic change by engaging in advocacy with key stakeholders, particularly policymakers and financial institutions, to influence and shape the broader ecosystem.

Support governments to develop and update renewable energy policies and partner with regional blocs to champion wider policy standardization efforts: International development organizations can leverage their cross-country experience and sector expertise to advocate for policymakers to launch new and updated policies to advance the sector. These development organizations should provide financial support alongst side technical support to help get further buy-in from local governments. Efforts should prioritize introducing and updating critical policies that can have an immediate impact on the activity within the sector, for example, offering import duty tax holidays for renewable energy products and feed-in tariffs that guarantee developers off-take over longer durations and profitable tariffs.

[7] Efficacy News, Solar Products Flood Zambian Market with Low-quality Concerns, https://efficacynews.africa/2024/08/08/solar-products-flood-zambian-market-with-low-quality-concerns/.

[8] IRENA, Key Enablers to Tripple Renewables by 2030: Skills and Capacities, 2024, https://www.irena.org/News/articles/2024/Jul/Key-Enablers-to-Triple-Renewables-by-2030-Skills-and-Capacities.

Provide knowledge sharing and capacity-building to national energy agencies to increase their focus on renewable energy, creating an environment for positive policy reform: Donors can support in addressing these issues by financing knowledge and capacity-building support in SSA countries that have demonstrated their commitment to the renewable energy sector (e.g., through dedicated funding and policies). Knowledge sharing should focus on providing a holistic view of how certain renewable energy technologies can help increase the access and reliability of the national grid and the policies required to ensure the uptick of these technologies coupled with information on targeted policy analysis, design, implementation, and monitoring.

Financial Interventions

***Set up a dedicated revolving debt fund aimed at providing concessional and long-term finance to the C&I sector*:** Bridging finance gaps discussed under the previous section requires injecting concessional capital to help stimulate commercial lending to C&I project developers and consumers. Therefore, development finance institutions (DFIs) can set up a concessional debt facility with support from donors whose capital (typically in grant form) can be leveraged to mitigate any lending risks. The facility will offer C&I players high-value, affordable (low-interest), and long-term debt with flexible repayment schedules, tailored to enable borrowers to recognize longer time horizon economic returns.

Design and launch risk mitigation products (e.g., guarantees) for lenders to catalyze private capital mobilization: Risk mitigation tools such as credit and first-loss guarantees can help private sector financiers feel more confident in investing in the C&I renewable energy space. Credit guarantee providers, which are typically DFIs, should engage interested financiers and project developers to co-design tailored risk mitigation tools and agree on investment and pipeline criteria.

Collaborate with financial institutions to guide and support the launch of tailored financial products, help improve risk assessments of renewable energy projects and develop educational information on the financial and impact benefits of these projects: Donors and DFIs can partner with high-potential financial institutions that are looking to scale their lending within the renewable energy sector. The partnership would focus on donors and development finance institutions (DFIs) providing targeted funding for technical and practical support. This would facilitate the development and launch of customized financial products and the improvement of internal processes, such as tailored risk assessments for applications in the renewable energy sector.

Technical Interventions

Partner with standards and certifying bodies to develop and enforce clear product standards for renewable energy products, enabling high-quality products to be easily differentiated: International development organizations can leverage their cross-country experience and multi-sectoral expertise to urge government standard bodies, regulators, and ecosystem players to collaboratively create and update standards for specific renewable energy technologies. Once defined, sector players should appoint a national agency (typically those focused on energy such as the National Energy Regulator of South Africa) to oversee implementation and compliance with the set standard, as well as issue certificates for verified products.

Foster innovation in the sector by launching a dedicated challenge competition, allowing interested parties to submit innovative ideas geared at solving critical industry challenges: Donors or large-scale private sector entities can initiate and promote competitions with predefined themes designed to drive innovation in addressing specific ecosystem challenges. Some topics might include waste management and end-of-life recycling for renewable products or innovative payment models to lower costs for renewable energy technologies.

Analyze the available literature focused on the renewable energy sector and commission new, unique reports that address key knowledge gaps and provide actionable recommendations: Across the sector, several ecosystem players have been commissioning reports on various topic areas. While some reports explore specific sectors (e.g., off-grid solar) in detail, sectors such as C&I have yet to undergo a similarly detailed analysis. Prominent international donor agencies are best placed to lead this intervention, leveraging their vast networks to collate and identify gaps in existing research. And then when commissioning new reports and publications, donors should ensure research objectives are clear, with each report having tangible recommendations.

Conclusion

Renewable energy shows a clear opportunity for SSA countries to better meet supply deficits while generating environmental benefits. Despite the potential, the overall uptake of renewable energy has been slowed due to various factors, including unfavourable policies, limited access to finance, and technical limitations. There are a variety of players in the sector that are already collaborating to make progress with renewable energy generation, but sectors, such as C&I, are often left unsupported. Ecosystem stakeholders must continue collaborating to drive progress in policy, financial, and technical solutions, fostering improved policies and increased investment across various consumer segments, regions, and demographics.

Published by
Konrad-Adenauer-Stiftung
P.O. Box 66471-00800 Nairobi, Kenya
Anja Berretta
Head of Regional Programme Economy – Africa
Anja.Berretta@kas.de

Written by
Open Capital Advisors
Lenana Towers, Nairobi, Kenya
contact@opencapital.com