POLICY BRIEF

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Scaling up Renewable Energy to Improve Electricity Access in Cameroon: Policy Pathways

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Takeaways

- **Electricity Access and Development:** With an overall electrification rate of 63% and only 20% in rural areas, limited electricity access in Cameroon severely hinders economic development, particularly in healthcare, education, and small-scale industries. It also exacerbates poverty, inequality, and vulnerability to the adverse effects of climate change.
- **Renewable Energy Potential:** Cameroon is rich in significant renewable energy resources, including hydropower, solar, wind, and biomass. Despite this, the contribution of renewables, especially solar energy, to the national grid remains minimal, with solar energy accounting for less than 1%. However, the untapped potential of these resources offers a hopeful path towards a sustainable energy future.
- **International Climate Commitments:** Under its Nationally Determined Contributions (NDCs), Cameroon has committed to increasing the share of renewable energy in its energy mix to 25% by 2035. This aligns with the country's broader climate obligations under the Paris Agreement and the Sustainable Development Goals (SDGs).
- **Current Efforts**: The government has initiated several projects and partnerships to increase renewable energy access, including rural electrification, decentralised energy solutions, and policy reforms. However, progress has been slow, particularly in rural areas.
- **Policy Challenge**: The primary policy challenge is the lack of a coherent and supportive framework that incentivises large-scale renewable energy investments and ensures the integration of these energy sources into the national grid. Financing and regulatory barriers further complicate efforts to scale up renewable energy access.
- **Pathways to Progress**: Key strategies to enhance renewable energy access include strengthening policy and regulatory frameworks, facilitating access to finance, promoting decentralised energy solutions, building technical capacity, and encouraging public-private partnerships.

Introduction

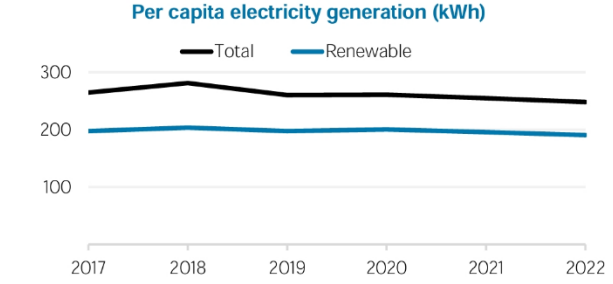
Cameroon, endowed with significant renewable energy (RE) potential, faces persistent challenges in ensuring widespread electricity access—the availability of reliable and affordable electricity services to households and businesses. The national electrification rate currently stands at around 63%, with rural areas faring worse at about 20% (World Bank, 2023). This limited access to electricity hampers economic development, particularly in education, healthcare, and small-scale industries, which are critical for improving livelihoods and reducing poverty. Scaling up renewable energy presents a viable pathway to bridging the energy access gap, promoting sustainable economic growth, and enhancing the country's resilience to climate change (Iweh, et al., 2023).

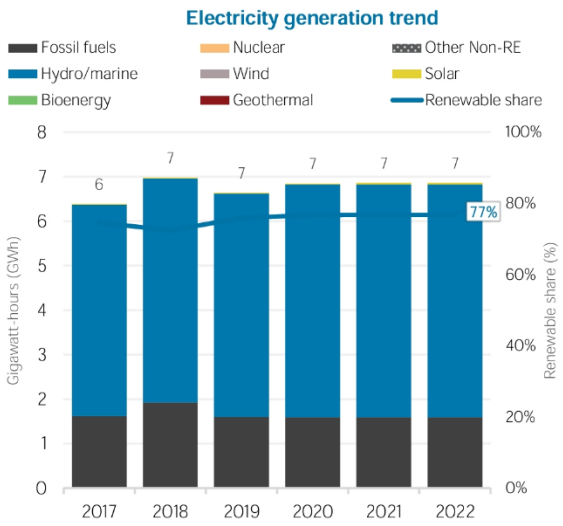
Current Energy Landscape in Cameroon

Cameroon's electricity generation predominantly relies on hydropower, which accounts for approximately 60% of the country's energy mix (See Figure 1). However, reliance on hydropower alone has proven to be increasingly unreliable due to fluctuating water levels caused by climate variability. The remaining energy supply is derived from costly thermal sources, which contribute significantly to greenhouse gas emissions. In 2022, 25% of electricity production came from thermal plants (World Bank, 2023). Despite the abundant renewable resources, such as solar, wind, and biomass, the penetration of these alternative forms of energy remains minimal, with solar energy contributing less than 1% to the national grid. Wind, bioenergy and geothermal account for 0% of electricity generation (IRENA, 2024).

Figure 1. Hydro and fossil fuels dominate electricity generation in Cameroon (Source: IRENA)

Generation in 2022	GWh	%
Non-renewable	1 593	23
Renewable	5 266	77
Hydro and marine	5 230	76
Solar	36	1
Wind	0	0
Bioenergy	0	0
Geothermal	0	0
Total	6 859	100





The Impact of Limited Electricity Access on Development

Limited electricity access in the country has far-reaching implications for development. In rural areas, where access is shallow, communities struggle with inadequate health services, as clinics lack reliable power for essential equipment and vaccine refrigeration. Educational outcomes are similarly affected, with schools unable to provide adequate lighting for evening classes or power for educational technologies. The lack of electricity also stifles economic activities, particularly in agriculture and small-scale industries, where processing, storage, and value addition are crucial for income generation. The resultant economic disparities further widen the gap between urban and rural populations, perpetuating cycles of poverty (Iweh, et al., 2023).

Low access to electricity significantly hinders communities' ability to adapt, making them more susceptible to the negative effects of climate change. Many rural areas depend on traditional biomass for cooking and have limited access to electricity, which restricts their capacity to participate in productive economic activities and embrace modern agricultural methods. These limitations directly impede their ability to adjust to climate-related challenges such as droughts, floods, and unpredictable weather patterns. For example, the absence of energy infrastructure undermines endeavours to enhance climate resilience in the Far North Region. This region, already at risk due to its arid climate, encounters additional obstacles in implementing adaptation strategies, such as better irrigation systems that rely on reliable energy sources. Without these systems, communities struggle to maintain agricultural productivity during dry periods, leading to food insecurity and financial difficulties.

Furthermore, the broader impacts of climate change, including rising temperatures and shifting precipitation patterns, are adding more pressure on already limited resources in energy-deficient communities. Inadequate energy access not only obstructs the implementation of crucial adaptation measures but also worsens the effects of climate change, perpetuating a cycle of growing vulnerability.

Cameroon's Renewable Energy Targets under International Climate Commitments

In alignment with its Nationally Determined Contributions (NDCs) under the Paris Agreement, Cameroon has committed to increasing the share of renewable energy in its energy mix as part of its broader climate obligations. Specifically, Cameroon aims to generate 25% of its energy from renewable sources other than hydropower by 2035

(Iweh, et al., 2023). This commitment is further reinforced by the country's objectives under the African Union's Agenda 2063 and the United Nations' Sustainable Development Goals (SDGs), particularly Goal 7, which calls for ensuring access to affordable, reliable, sustainable, and modern energy for all. Meeting these targets will require concerted efforts in policy reform, investment mobilisation, and the adoption of innovative technologies.

Current Efforts to Increase Renewable Energy Access

Cameroon has initiated several programs and projects aimed at increasing renewable energy access. Key initiatives are described in Table 1.

Table 1. Innitiative to boost renewable energy access in Cameroon

Rural Electrification Projects	The Rural Electrification Agency is actively working on expanding the national grid to rural areas. However, progress has been slow due to high costs and technical challenges.
Decentralised Renewable Energy Solutions	The government has begun to encourage using decentralised renewable energy systems, particularly solar home systems and mini-grids, to provide electricity to off-grid communities. Several pilot projects, supported by international donors and private investors, are underway in various regions.
International Partnerships	Cameroon has partnered with international organisations such as the World Bank, the African Development Bank (AfDB), and the United Nations Development Programme (UNDP) to finance and implement renewable energy projects. These partnerships enhance technical capacity, provide financial support, and facilitate technology transfer.
Policy and Regulatory Reforms	Recent efforts have been made to improve the regulatory environment for renewable energy. This includes the development of the National Renewable Energy Action Plan, which outlines strategies to promote RE deployment and attract private sector investment.

Policy Challenge: Bridging the Gap Between Potential and Reality

Despite these efforts, the expansion of renewable energy in Cameroon faces significant policy challenges that must be addressed to achieve meaningful progress. The primary policy challenge is the lack of a coherent and supportive framework that

incentivises large-scale renewable energy investments and ensures the integration of these energy sources into the national grid. The regulatory environment remains complex and often discourages private-sector participation (World Bank, 2023) (IRENA, 2024) while financing for RE projects is limited and difficult to secure (Iweh, et al., 2023) (US Department of Commerce, 2024).

Additionally, the current pace of rural electrification is insufficient to meet the population's needs, particularly in remote areas where grid extension is not feasible (World Bank, 2023). Decentralised solutions, though promising, have not yet been scaled up to the level required to impact electricity access rates significantly (IRENA, 2024) (US Department of Commerce, 2024).

Pathways to Enhance Renewable Energy Access

Energy access is a key enabler of resilience-building activities that can help communities cope with climate extremes. Investments in energy infrastructure, particularly in rural areas, are crucial for enabling these communities to implement effective adaptation strategies and reduce their vulnerability to climate change. However, this requires the right policies, sufficient finance, new energy production and distribution models, and strengthened public-private partnerships. (Table 2)

Table 2. Pathways to enhancing electricty access in Cameroon

Strengthening Policy and Regulatory Frameworks	More robust policies to promote renewable energy investments are needed. This includes offering tax incentives, simplifying licensing procedures, and establishing clear and consistent regulations supporting grid-connected and off-grid renewable energy projects.
Facilitating Access to Finance	Establishing financial instruments such as green bonds, concessional loans, and guarantees can reduce the financial risks associated with RE projects. International partnerships and donor support can also be critical in mobilising the necessary capital.
Promoting Decentralized Energy Solutions	Decentralised renewable energy systems such as mini-grids and solar home systems should be promoted to quickly scale up access, especially in remote areas. These solutions can provide reliable and affordable electricity, reducing the dependency on costly grid extensions.
Capacity Building and Technical Assistance	Investing in developing local technical expertise is crucial for the sustainability of RE projects. This includes training programs for technicians, policymakers, and entrepreneurs involved in the RE sector.
Public-Private Partnerships	Encouraging PPPs can accelerate the deployment of renewable energy projects by leveraging private sector efficiency and innovation with public sector support. This approach can help develop infrastructure and disseminate technology across the country.

Conclusion

By scaling up renewable energy, Cameroon has the potential to improve electricity access significantly. By addressing the existing policy challenges and enhancing efforts in finance, infrastructure, and technical capacity, Cameroon can increase energy access and fulfil its international climate commitments, positioning itself as a leader in sustainable energy within the Central African region.

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Disclaimer

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