

WORLD BANK POLICY BRIEF

Rethinking Electrification in Sub-Saharan Africa: Why We Should Stop Counting and Start Thinking Big

Who is this policy brief for?

Technical advisers with input to government policies on economic growth and transformation in Sub-Saharan Africa. This includes in ministries of energy, agriculture, finance, and planning.

Why was it prepared?

To inform deliberations on electrification policies and programs by presenting the best available evidence and policy implications based on this evidence.

FULL REPORT

The evidence summarized in this Policy Brief is described in detail in the full report: *Electricity Access in Sub-Saharan Africa: Uptake, Reliability and Complementary Factors for Economic Impact*.¹

SUMMARY

If African nations want to see their economies transform, the issue of electricity must be tackled head-on. Access is, however, only the starting point. Expansion needs investment too, and for that, utilities must recover their costs. Yet all over the region utilities are running at a loss. This report takes a broader look at the issue to show that the problem in Africa is not power but poverty. It shows that affordability, reliability, and coordination are the missing links to making utilities financially viable and expanding their consumer base.

The report emphasizes that access to electricity cannot be a stand-alone goal. Policymakers must rethink their approach to electrification by placing the productive use of electrification at center stage. Given the resource constraints, governments need to coordinate investments in other aspects of their infrastructure at the same time as they invest in electricity. Policies and programs need to focus on improving access to markets through better roads and expanding credit for new businesses. In this way, electricity could energize agriculture in rural areas and industry in urban areas.

Above all, this report shows that, to generate income, create jobs, and alleviate poverty in Africa, electricity has to be part of a package. On its own, it may not be enough to make a difference.

¹ Moussa P. Blimpo; Malcolm Cosgove-Davies. 2019. "Electricity Access in Sub-Saharan Africa : Uptake, Reliability, and Complementary Factors for Economic Impact (English). Washington, D.C. : World Bank Group.

KEY RECOMMENDATIONS

- 1 Recognize that electrification is a long-term investment and a necessary input for long-term economic transformation. Countries with financial capacity should advance the electrification agenda without delay.
- 2 Address demand constraints at all stages of the electrification process by (i) targeting and promoting productive use, (ii) prioritizing reliability, and (iii) coordinating with other sectors to take advantage of complementarities.

WHAT IS THE PROBLEM?

Access to electricity in the region is lower than it should be and, even when supply is available, it has not resulted in the level of uptake and consequently economic impacts we expected.

LOW ACCESS. Only 43% of people in the Sub-Saharan Africa region had access to electricity in 2016, the lowest of all regions in the world. Electricity access in the region could be over 65% if all households living under the electric grid could connect. For the 600 million people who live without electricity—80% of who live in rural areas—governments need to do more and they need to do it better.

LOW UPTAKE. Development efforts have focused primarily on supply-side issues to address the electrification access gap. Yet the share of households that live near the electric grid but that are not connected is high, with a median uptake of only 57% for 20 countries with comparable data. Pure demand-related factors account for about two-fifths of the access gap, with significant variations across countries and sub-regions. And, while alleviating demand constraints will increase uptake, a large share of the population still cannot afford to connect and use a reasonable amount of electricity, let alone purchase appliances that help generate income.

LOW CONSUMPTION, LOW RELIABILITY, HIGH COST. Electric power consumption in Africa is extremely low compared with other developing regions while the cost of supply is high. And reliability is a major constraint. The proportion of firms experiencing outages is higher than in any other region and a majority of enterprises in the region use generators as a coping strategy. Even in instances when power is available, brownouts are prevalent, thereby limiting end users' potential use of electricity.

LOW IMPACT. Although it is imperative to raise the level of access, that alone will not be sufficient for electricity to have the needed impact on reducing poverty and raising output. Higher levels of access need to be accompanied by greater consumption and better quality, as well as by affordable prices for consumers and sustainable tariffs for utilities, to achieve economic transformation in the region.

A FRAMEWORK FOR POLICYMAKERS

The optimal way to address problems of affordability for households and financial viability of service providers is to focus on **enhancing economic capabilities of communities by promoting productive use of electricity**, irrespective of the source (grid or off-grid).

Governments need to think beyond access and promote productive use through the provision of reliable electricity with adequate capacity. Aligning electrification rollout to job creation is also a crucial way to attract more investment and improve the financial viability of the sector.

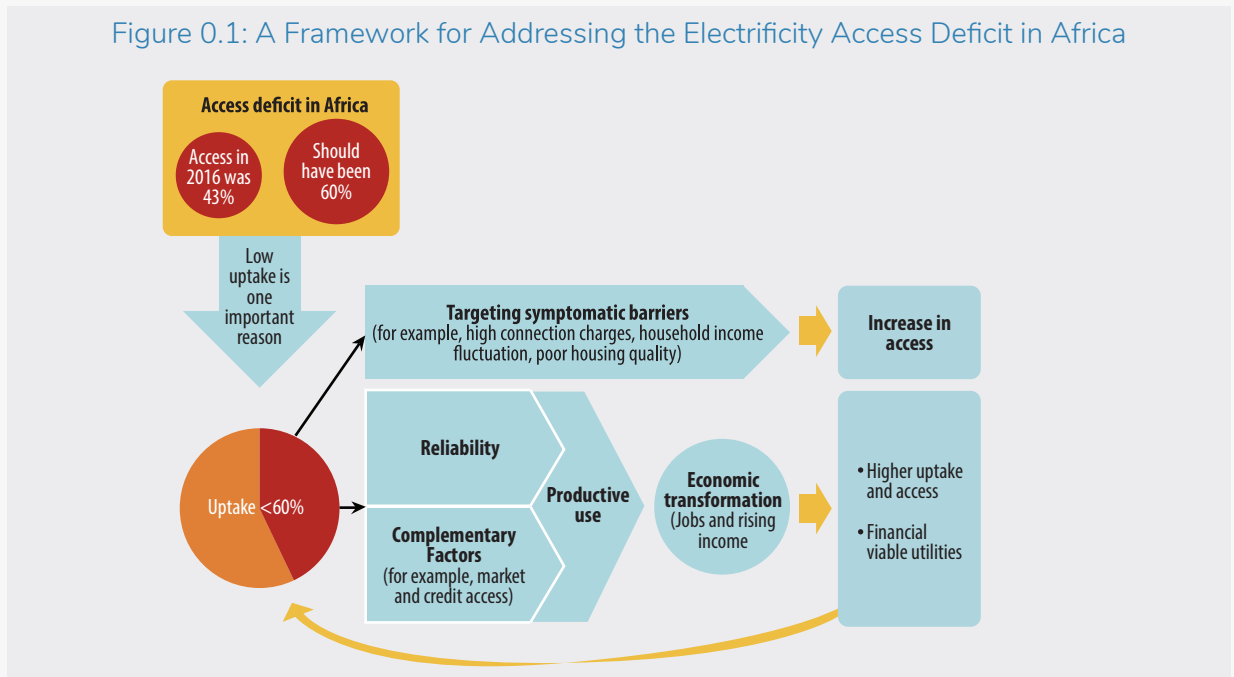
3 Take advantage of recent rapid technological advances to strategically promote productive uses, especially in rural areas not covered by the electric grid.

4 Rethink government strategies for the sector based on the recommendations listed above and elevate understanding of the key megatrends in the region that may affect electrification rollout.

Governments in Sub-Saharan Africa need to **focus more on providing reliable electricity, even if it comes at the expense of slower progress in expanding access**. Access without capacity and reliability will limit economic impact.

Electrification efforts in the region need to be **bundled with complementary investments** such as access to markets and credit and skills. This will hasten the economic impact of electrification.

Figure 0.1: A Framework for Addressing the Electrification Access Deficit in Africa



KEY POLICY IMPLICATIONS

To boost access, increase uptake, improve reliability and increase impacts, governments will need to rethink their electrification strategies based on the following principles:

- **Electrification is a long-term investment and a necessary input for long-term economic transformation.** Since short-term benefits are unlikely to cover development costs in the short run, government plans to increase access should focus on long-term benefits of electrification as a critical investment for sustainable economic progress. Many African countries could use rents from natural resources as a source of financing for electrification.
- **Demand constraints need to be addressed at all stages of the electrification process.** Households in Africa face many demand constraints including high connection fees and high

consumption tariffs, inadequate housing quality, and an inability to afford appliances. Use of smart meters, payment flexibility and ready boards may address some of these constraints, but such challenges are often symptoms rather than root causes of the access gap.

- **Addressing the root causes of the access gap will amplify the economic impacts of electrification.** Policymakers will need to
 - **target and promote productive use of electrification** to raise household income, support financial viability of utilities through higher consumption, enhance household ability to pay, and feed back into public finance through taxes for reinvestment;
 - **prioritize reliability** whenever access is provided; and
 - **coordinate with other sectors to take advantage of complementarities** such as infrastructure investment, access to finance, skills development, and public service delivery.
- **Governments need to take advantage of rapid technological advances to strategically promote productive uses.** Stand-alone solar solutions can provide options for low-capacity appliances. But further technological progress will be required to cost effectively support productive uses such as off-season farming, value-added agro-processing, and promoting small businesses such as hairdressers, eating establishments and tailors. This is happening already and needs to be promoted further.
- **A national electrification plan and an adequate regulatory framework will enhance successful electrification rollout.** The centerpiece of successful electrification rollout is the preparation and practical implementation in each country of a national electrification strategy that addresses in a systematic and coordinated manner the institutional, technical and financial aspects of electrification. A 2017 World Bank study finds that only half of 35 countries in Africa have an officially approved plan. An adequate regulatory framework will also help attract investment to fill the gaps where public funding falls short. Yet 8 out of 10 of the poorest performers in regulatory framework are African countries.
- **Key megatrends in the region will need to be considered for effective electrification rollout.** Urbanization, technological change, regional integration and climate change are key trends that could affect the efficiency of electrification efforts. Significant uncertainty about the evolution and timing of these factors complicates electrification planning but they will need to be taken into account in all power sector planning and development.

WHY IS IT URGENT TO ACT NOW?

The opportunity costs of delaying electrification are high: lack of electricity impedes the adoption of modern technology and lowers the quality of delivery of services such as health care, education, and other public services. It may also negatively affect how urbanization unfolds in the region. Evidence from Ethiopia suggests that rural electrification results in a 26% reduction in rural-urban migration. A slower rate of migration could help make the planning of urban electrification more manageable.

The Sustainable Development Goals (SDGs) consider energy to be a vital, crosscutting element of infrastructure that is critical for achieving many of the targets. SDG 7 calls for affordable, reliable, sustainable and modern energy for all by 2030. However, recent rates of growth in electricity access indicate that Africa will not meet this target. And, considering the low rates of uptake, electrification alone may not yield the timely economic impact in Sub-Saharan Africa unless it is coupled with other complementary factors such as market and credit.