
POWER FOR ALL RESEARCH SUMMARY

Making Sub-Saharan African Utilities Financially Viable

POWER FOR ALL

1.5% GDP

AVERAGE COST OF UTILITY
SUBSIDY IN SSA

51%

SSA COUNTRIES WHERE
UTILITIES CANNOT COVER
OPERATING COSTS

62%

UNDER THE GRID HOUSEHOLDS
IN NIGERIA WHO CITE HIGH
CONNECTION COSTS AS A
REASON FOR NOT CONNECTING
TO THE GRID

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A 2017 World Bank report, *Making Power Affordable for Africa and Viable for Its Utilities*, analyzes the financial viability of utilities in sub-Saharan Africa (SSA) using utility revenue and operations cost records. The report finds many SSA utilities face huge deficits, and will require a combination of increasing operational efficiency, raising tariffs, and optimizing their generation mix to achieve financial viability.¹

The vast majority of sub-Saharan African utilities are financially unsound.

- » Quasi-fiscal deficit is defined as the difference between the net cash a utility collects and the revenue needed to fully cover its capital and operating costs - an implicit subsidy to utilities. (vii)
- » The quasi-fiscal deficit averages 1.5% of GDP across all SSA countries, and was over 5% of GDP in 3 countries. (vii, 8)
- » In only 19 out of 39 SSA countries could utilities cover their operating costs, and in only 2 countries could utilities cover both their operating and capital costs. (vii)
- » There is no correlation between quasi-fiscal deficit (or utility subsidy) and improved energy access, economic development, or reduced poverty. (13)

A combination of increasing operational efficiency and raising tariffs will be needed to fully cover utilities' costs.

- » Outside of South Africa, 30% of quasi-fiscal deficits are due to transmission and distribution losses, 20% are due to bill collection losses, and 10% are due to overstaffing. These losses can be eliminated by increasing operational efficiency. (11)
- » The additional 40% of deficits are due to underpricing, or the amount of deficit that would remain even after full operational efficiency was achieved. (11)
- » In fact, after increasing operational efficiency, two thirds of countries would still need to raise tariffs to fully cover costs. (29)

Current tariff structure already makes affordability a barrier for low-consumption households.

- » Under the commonly employed increasing block tariff (IBT) for instance, customers are charged lower rates for lower blocks of electricity consumption. But because the lower rates for the first block of electricity apply to all customers, including affluent customers, this subsidy is inefficient. (8)

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- » Under a volume-differentiated tariff (VDT), customers are charged a single unit rate for all electricity consumed, dependent on total kWh consumed. This directly targets low-consumption households however, overshooting the unit cap for the first electricity block leads to a massive increase in effective unit energy charge, making it difficult to take advantage of the subsidy, especially where multiple households share a meter. (9)
- » Even where tariffs are affordable, the upfront cost of connecting to the grid can be very high (up to about 400% of monthly income in Madagascar), resulting in multiple families connecting to the same meter to defray connection costs. (20)

Distributed renewables can be a more affordable and reliable way to increase energy access, improving the viability of SSA utilities:

- » The cost of rural grid extension in Tanzania is US\$2,300 per household² and in Kenya connection costs can be as high as US\$370³, while across SSA a 15W solar home system (SHS) costs US\$9 per month for 36 months (roughly US\$110 per year).^{4,5}
- » Analysis by the International Energy Agency (IEA) finds that DRE offers the least-cost solution for three-quarters of the additional connections needed in sub-Saharan Africa.⁶

Share the Message

DRE enhances climate security by providing a safe sustainable alternative to the toxic kerosene and diesel used in hundreds of millions of unelectrified households. Switching to DRE will rapidly reduce emissions, improve lives, and set emerging economies on a critical low-carbon path to energy access. Share these messages with key stakeholders:

- » Utilities can barely cover their current operating costs, let alone invest in further grid expansion.
- » In many countries, tariffs would need to be raised on existing customers just to cover current costs to utilities.
- » DRE should be prioritized as a cost-effective way to increase electricity access without needing to rely on cash-strapped utilities to invest in transmission grid expansion.

Sources:

1. The scope of this study does not include rural electrification, where off-grid renewables would be more cost-effective than grid expansion. The study also did not discuss the potential to decrease electricity generation costs by optimizing the electricity mix (e.g. by adding more solar to decrease reliance on imported diesel)
2. Africa Progress Panel (2015) Power, People, Planet: Seizing Africa's Energy and Climate Opportunities
3. Kojima et. al (2016) Who uses Electricity in Sub-Saharan Africa? Findings from Household Surveys, 54.
4. IRENA (2016) Solar PV in Africa: Costs and Markets, 11.
5. World Resources Institute (2016) Stimulating Pay-As-You-Go Energy Access in Kenya and Tanzania: The Role of Development Finance, 8.
6. International Energy Agency (2017) World Energy Outlook