
POWER FOR ALL RESEARCH SUMMARY

Electricity Access and Development in Sub-Saharan Africa

POWER FOR ALL

42%

HOUSEHOLD ELECTRIFICATION
RATE IN SUB-SAHARAN AFRICA

40%

PERCENTAGE OF THE TOTAL
GENERATION CAPACITY UTILIZED
IN SUB-SAHARAN AFRICA

20%

PERCENTAGE OF PEOPLE IN
KENYA SUFFERING FROM
SEVERE BLACKOUTS

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The World Bank published its latest Africa's Pulse biannual report in April 2018, with a focus on recent innovations in both delivery and governance of electricity access, and how different approaches impact economic development. Here we summarize their key findings.¹

Sub-Saharan Africa (SSA) still has the lowest household electrification rate in the world. But some governments are actively pursuing universal energy access, focusing on rural areas.

- » SSA's household electrification rate averaged 42 percent in 2016. This translates to 71 percent in the urban areas and 22 percent in the rural areas. (49,50)
- » Overall, there has been a marginal improvement (8 percent) in the share of people in rural areas in Sub-Saharan Africa with electricity access (56)
- » For example, the electricity access rate in Kenya increased from 23 to 50 percent between 2009 and 2016 in part due to the Government of Kenya's grid densification program, the Last Mile Connectivity Program, which targets grid connection for every household within a 600-meter radius of a transformer. (55, 56)
- » Rwanda also implemented its ambitious Electricity Access Rollout Program (EARP) in 2009. The project has increased national electricity access to more than 16 percent while lowering the cost of connection. (56)

Despite this, utilization of installed generation capacity is low across SSA.

- » On average, electricity generation in SSA was only 40 percent of the potential output given the installed capacity (96 GW as of 2015). (51)
- » The low level of industrialization in the region has led to low industrial energy consumption across Sub-Saharan Africa, except for industrialized countries like South Africa. (50)
- » Also, utility sector inefficiencies have resulted in under maintained and often inoperable generation capacity (51)
- » Extension of the national power grid to lightly populated rural and remote areas is usually a costly and under investment, and often has little impact on economic development because of the limited amounts that people can afford to pay for electricity. (48)

SSA's electricity sector also suffers from poor reliability, which itself greatly affects access, productivity and industrialization potential.

- » In Kenya and Tanzania, around one-fifth of the population studied in suffer from severe blackouts (some of the transformers were completely out of order) (68)
- » Reliability in Rwanda was fairly high during the EARP evaluation with only short outages occurring every couple of days. (68)
- » Firms will choose less electricity-intensive input mixes, which means less intensive use of modern electricity-powered machinery. These choices reduce overall productivity and forgo opportunities to benefit from technical advances in machinery-intensive sectors. (68)
- » Overall, unreliable electricity affects the size distribution of firms. (68)

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The World Bank finds that a number of non-technical challenges in SSA's electricity sector contribute to these inefficiencies.

- » Lack of commitment to advance electricity sector restructuring – vertically integrated natural monopolies remain the norm in over 80 percent of the countries in SSA due to ineffective regulatory reforms. (71)
- » Institutional and political weaknesses – the regulatory environment in many SSA countries is opaque. Concession and power purchase agreements, for instance, are rarely subject to independent scrutiny. Many countries also have unclear standards and procedures.(72)
- » Lack of regulatory capacity and competency – Most regulatory agencies in Africa are still developing capacity and competency, due to non-availability of key skills and experience. This makes them vulnerable to external political pressures. (73)
- » Inadequate coordination among government agencies and weak sector planning – the majority of SSA countries have inadequate planning capacity and end up contracting out this function to consultants. (73)
- » Problematic tariff structures, leading to poor financial viability of electric utilities – underpricing is the largest component of the utilities' quasi-fiscal deficits in the region, accounting for 40 percent of these deficits. (74)

The World Bank provides a number of key recommendations for SSA to improve sectoral efficiency, reliability and access.

- » Increased inclusion of mini-grids and cost-effective tariffs – in some countries, electricity access is provided by dedicated small hydro plants that serve remote anchor load consumers with high energy demand who can justify such investments. (57) Subsidization for mini-grids may be a solution for further increasing access. (78)
- » Local participation – evidence based electrification planning (78) and the inclusion of local communities in planning provides a sense of ownership of electricity infrastructure. Support for capacity building in construction, maintenance, and operation of infrastructure is also needed (58)
- » Political commitment and public investment – strong political will and commitment toward electrification is fundamental. Although private sector participation is important, public financing and/or regulatory support are also critical (58)

Share the Message: While there are many challenges to electricity service provision in SSA, many solutions for improved governance exist.

- » Substantial cost reductions in home-scale solar power production provide opportunities to improve the quality of life for households without access to electricity in SSA's more lightly populated, rural and remote areas.
- » SSA can also greatly benefit from innovations in power sector regulation and corporate management being implemented in other areas of the world over the last three decades.
- » More transparent and less politicized operations of utility companies, and stronger and more independent regulatory bodies are critical to universal energy access in SSA. (49)

Sources:

1. World Bank Group. 2018. Africa's Pulse, No. 17, April 2018. Washington, DC: World Bank. All page numbers are in parentheses.