



The Electricity Access Gap and its Implications for Human and Economic Wellbeing in Africa



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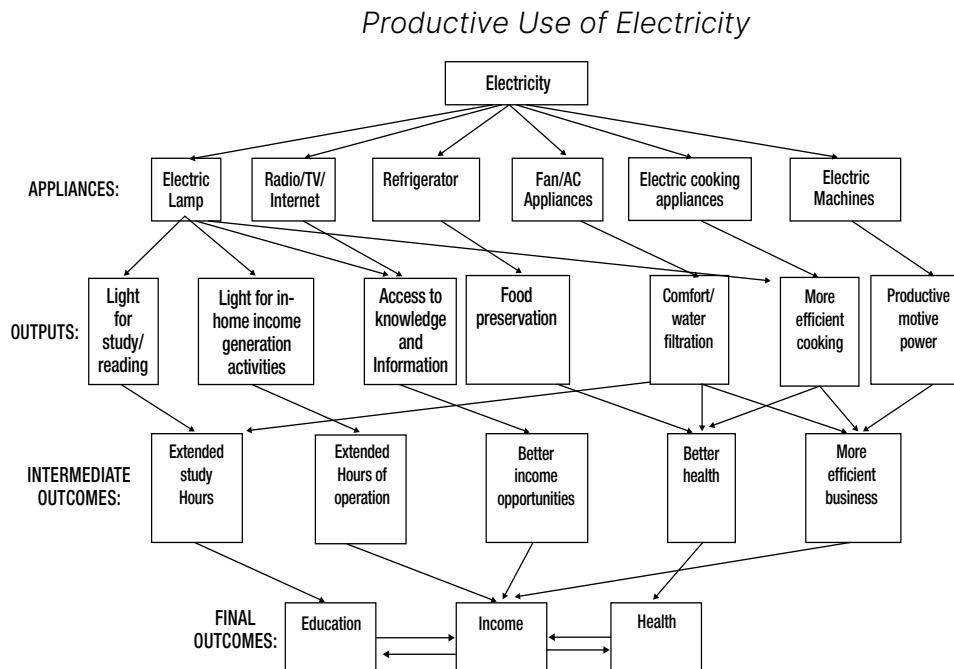
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Policy Brief



Introduction

Affordable and clean electricity plays a central role in modern human development, providing the necessary infrastructure for health, education, and economic activities. In Africa, however, there remains a significant gap in electricity access, which has profound implications for human wellbeing and economic growth. This article explores the current state of electricity access in Africa, the impacts on human wellbeing, and the economic consequences of this gap, while suggesting potential solutions to bridge this divide.



Khandker et al., "Welfare Impacts of Rural Electrification: A panel data Analysis from Vietnam," 2013; IEA, "World Energy Outlook 2022"

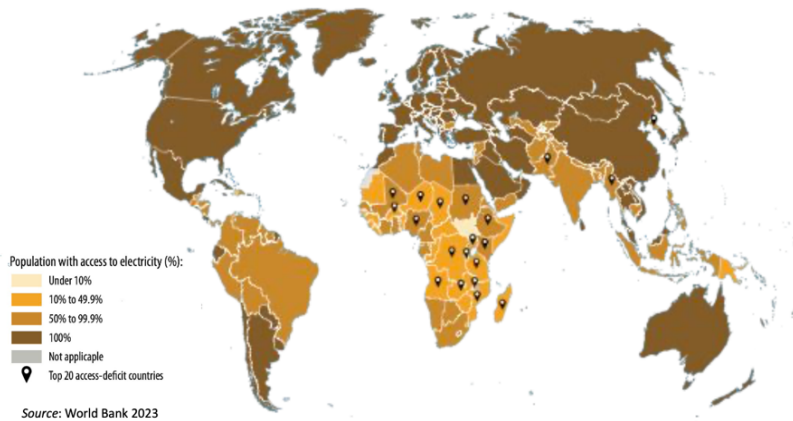
The Current State of Electricity Access in Africa

The electricity access gap in Africa is stark, with large segments of the population lacking reliable and affordable electricity. According to data in the provided document, several African countries have electrification rates below 50%. For instance, in countries like Chad and Burundi, the electrification rate is as low as 11% and 9%, respectively. This indicates that millions of people are living without the benefits of modern energy services.

Graphical data from the document highlight the disparity between urban and rural areas. Urban areas have higher access rates due to better infrastructure and economic investment, while rural areas lag significantly behind. This urban-rural divide exacerbates existing inequalities and hinders overall national development.

The Energy Access Gap

An estimated 675 million people globally – mostly in Sub-Saharan Africa – still live without access to electricity. The world is not on track to meet SDG7 by 2030.¹



Top 3 access-deficit countries:

- **Nigeria: 86 million**
- **DRC: 76 million**
- **Ethiopia: 55 million**



Implications for Human Wellbeing

- 1. Health:** Limited electricity access affects healthcare delivery in multiple ways. Health facilities without reliable electricity cannot store vaccines effectively, operate life-saving medical equipment, or provide adequate lighting for medical procedures. This leads to higher morbidity and mortality rates.
- 2. Education:** Without electricity, schools cannot provide proper lighting, heating, or cooling, making learning environments less conducive. Furthermore, students are unable to study after dark, limiting their educational attainment. Access to digital learning resources is also constrained, putting students at a significant disadvantage in the global economy.
- 3. Quality of Life:** Electricity improves quality of life by providing access to modern amenities such as lighting, refrigeration, and communication tools. In its absence, people rely on inefficient

and often harmful sources of energy like kerosene, which can cause respiratory problems and other health issues.

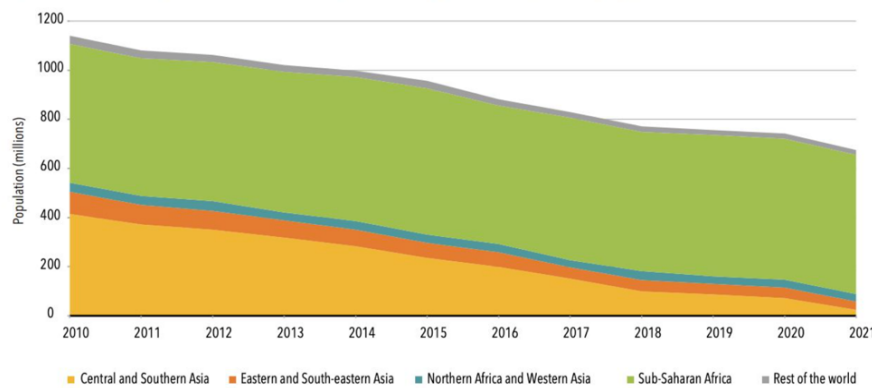
Economic Impact

The electricity access gap severely hampers economic activities across Africa. Reliable electricity is fundamental for businesses, from small enterprises to large industries. The lack of electricity means reduced productivity and increased costs, as businesses may need to invest in alternative power sources such as generators, which are expensive and environmentally unfriendly.

- 1. Agriculture:** In rural areas, where agriculture is the primary economic activity, the lack of electricity limits the use of modern irrigation systems, food processing, and storage facilities. This results in lower agricultural yields and increased post-harvest losses, directly affecting food security and farmers' incomes.

2. **Industry and Commerce:** Industrial growth is stunted by power shortages. Manufacturing processes require a consistent and reliable power supply, and without it, operational costs increase and production levels decrease. This makes African products less competitive in the global market.
3. **Entrepreneurship:** For small and medium-sized enterprises (SMEs), electricity is crucial. The absence of reliable power curtails the growth of SMEs, which are vital for economic diversification and employment creation. Entrepreneurs face significant barriers in scaling their businesses, leading to slower economic growth.

Global Electricity Access 2010-2021



Source: World Bank 2023.



Note: Between 2010 and 2021, the population without electricity access in Central and South Asia decreased dramatically from 414 million to 24 million. In contrast, Sub-Saharan Africa saw minimal progress in reducing the number of people without access during the same period.

Bridging the Gap: Solutions and Recommendations

To address the electricity access gap in Africa, a multidimensional approach is required. Key strategies include:

1. Investment in Renewable Energy:

Africa has abundant renewable energy resources, including solar, wind, and hydroelectric power. Investing in these resources can provide sustainable and reliable electricity to underserved areas. Off-grid solar systems and mini-grids are particularly effective in rural areas where extending the national grid is not feasible.

2. Infrastructure Development:

Significant investment in electricity infrastructure is required to extend the grid and improve the reliability of existing networks. This involves upgrading transmission and distribution systems to reduce losses and increase efficiency.

3. International Cooperation and Funding:

International donors and financial institutions can play a critical role by providing funding and technical assistance. Initiatives like the World Bank's electrification projects and the African Development Bank's "New Deal on Energy for Africa" are pivotal in mobilizing resources and expertise.

- 4. Policy and Regulatory Reforms:** Governments need to create conducive environments for investment in the energy sector. This includes clear policies, incentives for renewable energy projects, and frameworks that encourage public-private partnerships. Reducing bureaucratic barriers and corruption is also essential to attract investment.
- 5. Community Involvement and Education:** Engaging local communities in planning and implementation ensures that solutions are tailored to their needs and are more sustainable. Educational programs on the benefits and uses of electricity can also enhance community support and participation.

Our Conclusion

The electricity access gap in Africa is a critical issue that affects human wellbeing and economic development. Addressing this gap requires comprehensive strategies involving renewable energy investments, policy reforms, infrastructure development, and international cooperation. Improving electricity access in African countries can enhance healthcare, education, and economic activities, leading to sustainable development and improved quality of life for their populations.

Credit: The graphics used in this article were gotten from Stephen J. Lee. Postdoctoral Associate, MIT Center for Energy and Environmental Policy Research

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