



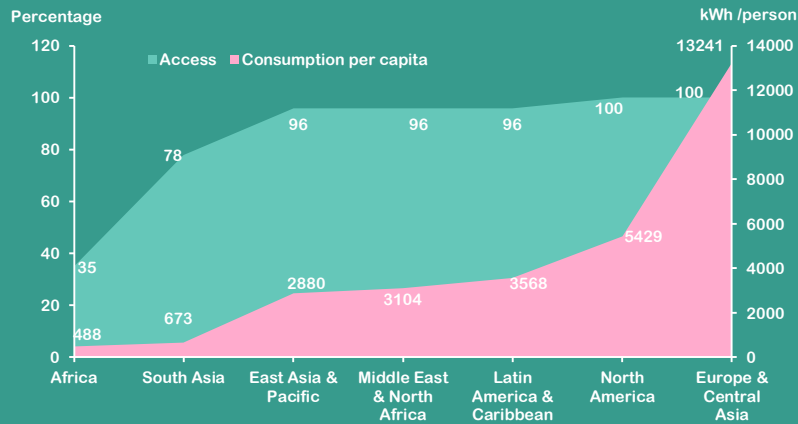
Power Transmission in Africa
2019 – Unearthing the
Opportunity Potential into Sub-
Saharan's Electricity
Transmission Sector till 2025

March 2019

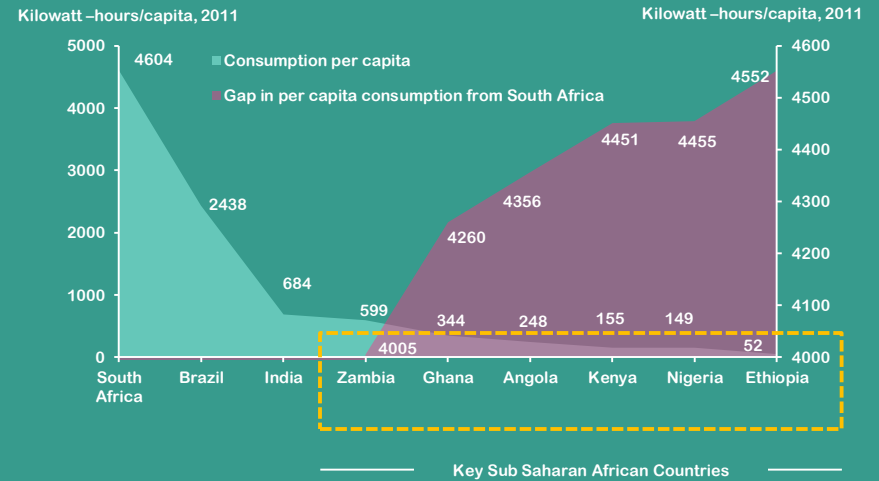
Exhibit 1

Power Consumption Situation in Sub Saharan Africa & Electricity Demand and Generation Projections Till 2040 – Depicting the Need for Expanding Power Transmission Network in the Country

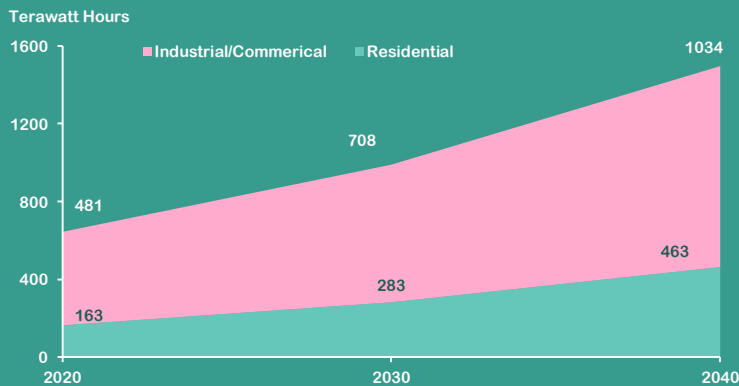
Access to Electricity & Consumption
(Percentage of Population, kWh per person per year)



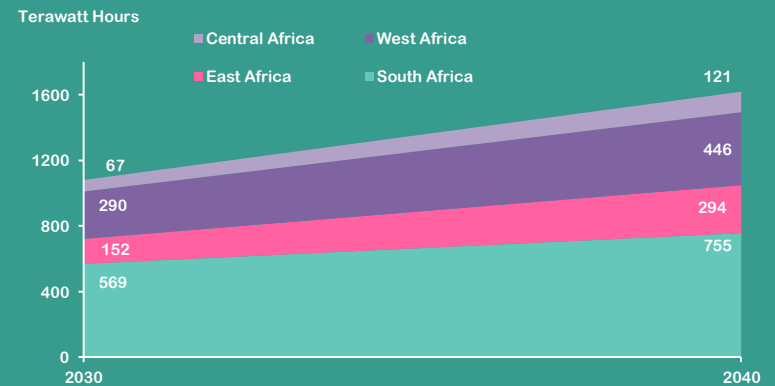
Sub Saharan Africa Power Consumption as Compared to Other Global Emerging Markets



Electricity Demand Estimations in Terawatt Hours for Sub-Saharan Africa by 2040



Projected Capacity Addition in Power Generation in Terawatt Hours for Each African Region by 2040



Why enincon's report upon "Power Transmission in Africa" ?

Inadequacy of Power Supply in Sub-Saharan Africa Makes it a Unique Market that Offers both Transformative Potential and Attractive Investment Opportunity

The Sub-Saharan Africa projected to see investments to the tune of USD 11 Billion in its Power Transmission Sector by 2025

Sub-Saharan Africa, a region known for its significant wealth in natural resources is amongst the fastest emerging markets in the world. But fall well short from other similar growing markets when it comes to economic prosperity. Electricity plays a very crucial role for economic growth. Infact, there exists a direct correlation between economic growth and electricity supply and if Sub-Saharan African countries needs to see faster economic growth, then they must focus on developing its power sector. There are three aspects of power sector supporting national development of any economy – availability, accessibility and affordability. In case of Africa, accessibility is a major concern. It is pertinent to note that only 35-40% of the total population in Africa has access to electricity. A primary cause for such poor quality of supply and low electrification rates lies with weak power networks. Addressing these challenges will require new approaches to development and funding into power transmission sector of the country. Since, a large funding gap is already affecting the Sub-Saharan Africa's power sector, this development cannot be done by country's public sector alone and hence brings a great opportunity for scaling up the private participation and investments from the private channels.

Current Situation of Power Transmission and the Identified Underlying Opportunity –

Of the thirty eight countries in Africa about nine have no transmission lines above 100 kV. The combined length of transmission in thirty eight countries in Africa is below 115,000 ckt. kms. Infact countries like Brazil and USA that have a small land mass boasts a longer transmission network than Africa at 125,640 ckt. Kms and at 257,000 ckt. kms. Hence, building more transmission lines and upgrading the existing transmission capacity is of utmost importance for overall development of power sector in the country. As Africa needs transmission both within and between countries, investments shall be required at both the national and regional levels. Africa needs to invest in long-distance lines, using both alternating current (AC) and direct current (DC) technologies, and to expand in-country transmission networks at a range of voltages. Infact, this untapped development so far has become a blessing in disguise for the country offering a tremendous scope for a massive investment inflow, as the willingness and interest to invest in Africa's energy sector is picking up globally. The energy market in Africa is all bullish as positive developments have taken place with setting up partnerships, such as the Africa European Union Energy Partnership and the Power Africa Initiative, entusing more funds. These initiatives and partnerships have come in light to electrify nearly 600 million households in the country till 2030. Some targets have been set up African development bank as well in this aspect that aims for – implementation of 160 GW of additional capacity, 230 million additional on grid connections and

an addition of nearly 75 million in off-grid connections by 2025. . Further, the country is also targeting to install nearly 5000 ckt kms of power transmission lines by 2030 and a power evacuation capacity of 7500 MW. To support these targets, massive investments to the tune of USD 45 Billion for additions in generation capacity and USD 25 Billion for transmission & distribution are to be needed. For raising such investments public sector funding alone shall not be enough to rely upon and hence there shall be an urgent need for attracting investments from private channels through collaboration of policy makers and industry players. To estimate this underlying opportunity enincon consulting llp is coming up with a research study indicating business potential in Africa's Power Transmission sector. The report is an attempt to identify the investment pockets for both domestic and international transmission players in Sub – Saharan Africa. The study provide answers to the key queries such as - what shall be power demand in Africa by residential , industrial and commercial consumers by 2025 ? What shall be the anticipated capacity additions in the power generation capacity of sub Saharan Africa by 2025 ? What shall be the anticipated country wise addition in the power transmission network by 2025? What shall be anticipated investment opportunity in Africa's power transmission sector by 2025? What is the current status of upcoming power transmission projects in Africa till 2025 ? What are the regulatory and policy barriers and the incentives/ initiatives taken by African government for encouraging funds from private sector and many more like this. The report shall be a direct guide for players seeking information on Africa's transmission sector for framing market entry and investment strategies.

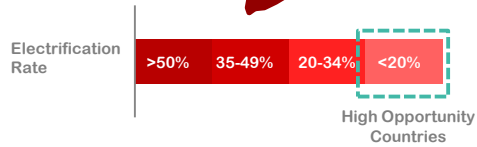
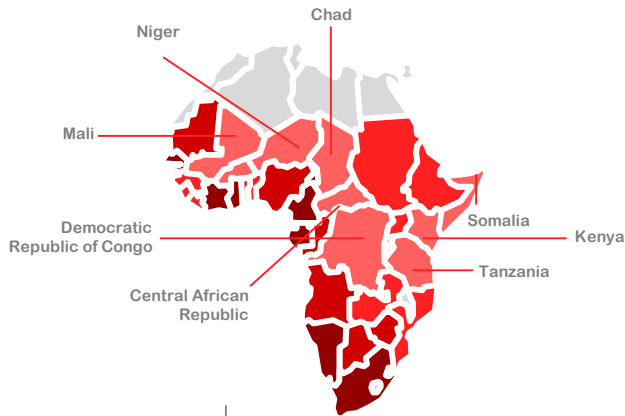
BUSINESS CASE FOR POWER TRANSMISSION SECTOR IN AFRICA

- Transmission network expansion to witness investments from private players to the tune of USD 3.2 Billion to USD 4.3 Billion annually between 2016-2040
- South Africa power utility Eskom, has announced plans to add about 6 500 km of high-voltage transmission lines and 46000 MVA of transformer capacity by 2028
- Nigeria plans to add over 190 new projects to boost power transmission, generation and distribution
- Africa targets to provide electricity connections to about 60 million new households by 2030
- About 5000 ckt. Kms of transmission line network targeted to be installed by 2030
- Africa targets to increase electricity generation capacity by 30,000 MW
- East African countries projects to witness peak demand/supply surplus of 3430 MW by 2025
- Kenya Power & Lighting Company plans to invest USD 15 Million on projects to improve electricity supply in the country by 2019
- South Africa's power utility Eskom is set to expand its transmission network after ADB approved financial assistance of USD 218 Million

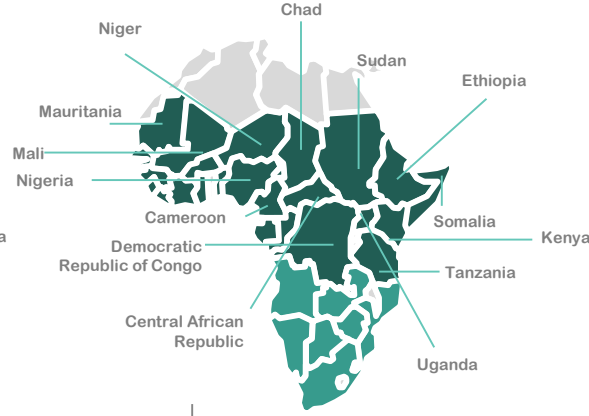
Exhibit 02

Charting Investment Opportunity in Africa's Power Transmission Sector – Identifying High Opportunity Zones

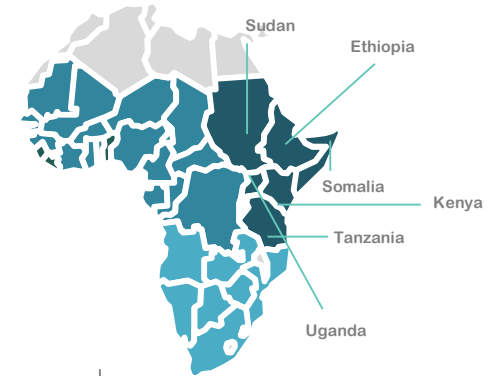
Electrification Rates (Sub Saharan) Africa as on 2018



Increase in Urbanization Rates (Sub Saharan) Africa by 2040 from 2018



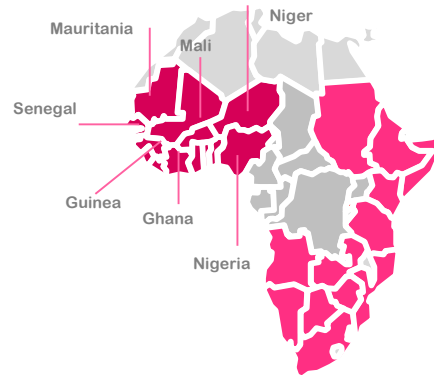
Increase Electricity Demand (Sub Saharan) Africa by 2040 from 2018



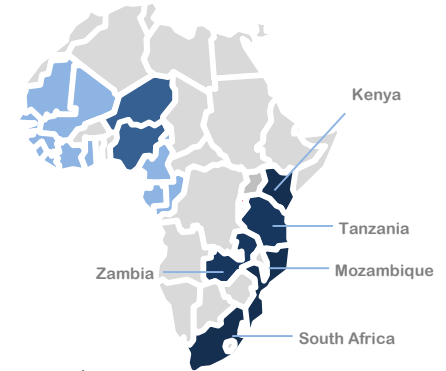
Anticipated Capacity Addition in Power Generation (Sub Saharan) Africa by 2040



Anticipated Investments for Upcoming Transmission Projects (Sub Saharan) Africa by 2025



Attracting Investments from Private Players (IPT) in Transmission Sector (Sub Saharan) Africa by 2025



KEY HIGHLIGHTS

- Track of all under construction, announced power transmission projects in east Sub Saharan African countries – Ethiopia, Somalia, Kenya, Tanzania
- Track of all under construction, announced power transmission projects in south Sub Saharan African countries –South Africa, Mozambique, Zambia, Zimbabwe, Botswana
- Track of all under construction, announced power transmission projects in central Sub Saharan African countries – Chad, Central African Republic, Democratic Republic of Congo, Gabon
- Track of all under construction, announced power transmission projects in west Sub Saharan African countries – Niger, Nigeria, Mali, Mauritania, Senegal etc
- Tracking business opportunity for independent power transmission players in key Sub Saharan African countries till 2025
- Track of all the investments planned (2016-2019 till date) by national and international development agencies in Africa for the growth of power sector in the country
- Assessing opportunity for the Indian power generation and transmission utilities in Africa's electricity sector till 2025
- Assessing opportunity for equipment manufacturers/suppliers for transmission towers, conductors and cables, insulators, transformers, switchgear etc till 2025

REPORT INSIGHTS

- Power demand-supply situation in Africa
- Power generation trends in Africa – Overview on capacity addition from conventional and renewable energy sources
- Power demand estimates for key countries in Africa till 2025
- Immediate opportunity wise categorization of electricity demand centres in African region till 2025
- Overview of current power transmission situation in Africa
- Transmission network expansion and track of key transmission projects in Africa
- Identifying major capacity addition pockets for renewable energy in Africa till 2025
- Opportunity assessment for building the subsequent transmission network for integrating the to be added renewable capacity

PRESS EXCERPTS

“ South Africa to receive USD 218 Million for expansion of transmission network till 2025 ”

Construction Review

“ South Africa power utility Eskom, has announced plans to add about 6 500 km of high-voltage transmission lines and 46000 MVA of transformer capacity by 2028 ”

Construction Review

MUST BUY FOR

- Power Transmission Utilities in India
- Power Transmission Utilities in Africa
- Independent Power Transmission Utilities in India , Africa and RoW
- Merchant Investors in Africa and RoW
- Power Distribution Utilities (DISCOMs) in Africa
- Power Generation Companies in India
- Power Generation Companies in Africa
- Original Equipment Manufacturers
- Renewable Power Developers
- Renewable Developing Agencies
- Government Agencies
- Research firms/ Institutes
- Project Consultants
- Industry Associations / Technical Consulting Group

KEY QUERIES ANSWERED

- What shall be the anticipated capacity addition in the power transmission lines in Sub Saharan Africa by 2025 ?
- What shall be the anticipated electricity demand in Sub Saharan African countries by residential sector till 2025 ?
- What are the projections for electricity demand from industrial and commercial sector of Sub Saharan Africa by 2025 ?
- How many transmission projects are anticipated to seek commissioning in Sub Saharan Africa by 2025 ?
- Which Sub-Saharan countries to be the hottest market for electricity development till 2025 ?
- Which Sub – Saharan countries to offer investment opportunity especially to the independent power transmission utilities by 2025 ?
- What are the regulatory and policy barriers and the incentives/ initiatives taken by African government for encouraging funds from private sector?
- What is anticipated resource wise power generation capacity addition in Sub Saharan Africa by 2025 ?

WHAT YOU CAN LEARN ? A SNAPSHOT

- An overview of power sector in Africa
- A track on the current electricity electrification scenario in Africa
- Current Regulatory & Policy Scenario for Electricity Generation in Africa & the Roadmap for Future Targets
- Track on the Contribution of Development Partners in Power Transmission Works in Africa
- Power Demand Estimations till 2025 for African Countries
- Power Demand – Supply Situation in Africa – Examining the Gaps and Demand Estimations Till 2025
- Anticipated Capacity Addition in the Power Transmission Network of African Countries till 2025 - Studying Key Countries
- Estimating the Business Opportunities for Transmission & Distribution for Encouraging Electricity Trade in – North African Region, East African Region, West African Region & South African Region
- Capacity Addition Targets for Renewable Energy in Africa – Estimating Likely Additions till 2025
- Opportunity Assessment for Power Transmission Equipment OEM's / Suppliers in Africa till 2025
- Track of upcoming power transmission projects in Africa
- Identifying Major Challenges Unlocking Regional Electricity Trade in Africa
- Tracking investment opportunity in Power Transmission Sector in Africa – Capturing PPP opportunity trends



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THANK YOU!

Happiness does not come from doing easy work but from the afterglow of satisfaction that comes after the achievement of a difficult task that demanded our best

- Theodore Isaac Rubin