

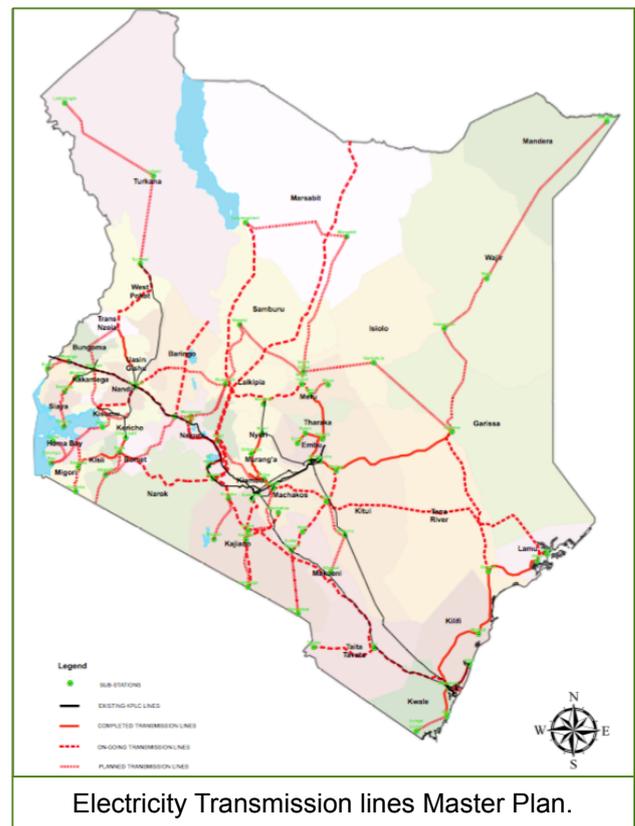
Impact of the Cost and Provision of Electricity on SMEs

Progress of Electrification in the Past 5 Years

The demand for electricity in 2016 was 1,586 MW and has peaked at 2,351 MW in June 2018 up from 1,770 MW at the beginning of the year largely resulting from the introduction of off-peak hours rates for manufacturers. The distribution network has been developed by the Kenya Electricity Transmission Company leading to an expansion in size and capacity. Kenya Power is currently operating 79,001 kilometres of high and medium voltage lines compared to 49,818 kilometres that were in place in 2013. KPLC has increased in subscribers from 4.9 million customers as at June 2016 to 6.7 million in June 2018. The government is pursuing its goal to provide 'universal electricity' by 2030. The generation mix as of 2018/19 was 48.28% Geothermal, 41.67% Hydroelectric and 8.95% Thermal.

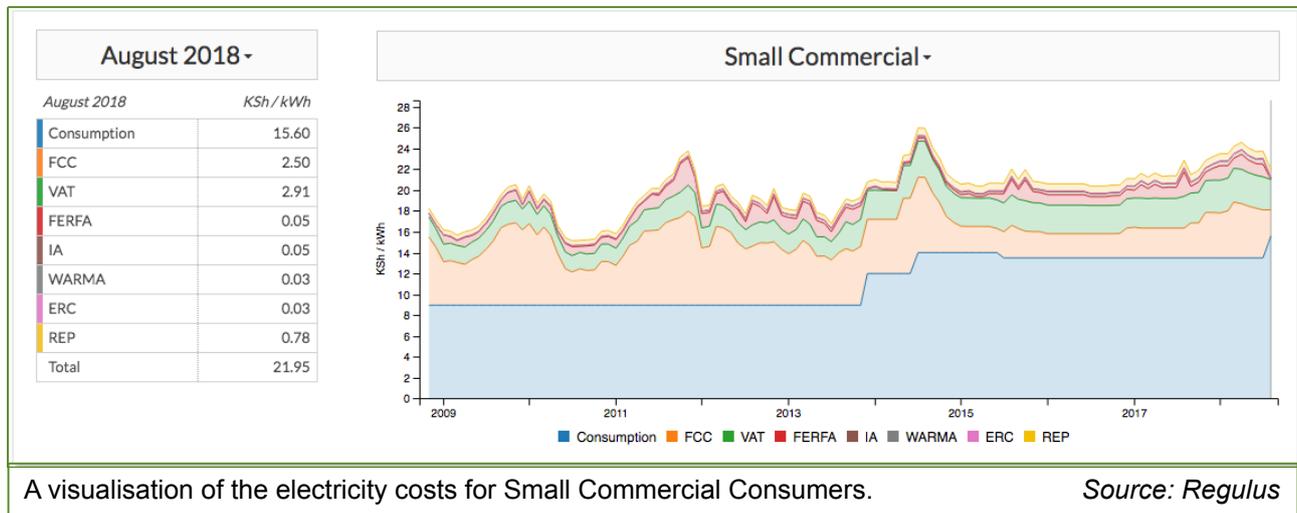
Manufacturing and Energy Development

The increase in demand for electricity can largely be attributed to the growth and development of the manufacturing sector as there is a great deal of reliance on electricity to enable the production process. The manufacturing sector is rising to match the growing population and increased demand in Kenya. The sector is in need for affordable and stable provision of electricity to allow for ease in production but this is a challenge as there are constant supply shocks resulting from the heavy reliance on hydroelectric power. The performance of Hydroelectric power plants is contingent on the levels of rainfall experienced thus there are spells of low output. This has led the government to pursue more stable sources of electricity focusing on wind and geothermal power plants. The dynamic relationship between manufacturing and electricity is key in the success of the Big 4 agenda as each factor directly contributes to the growth of the other.



A number of joint initiatives led by the government of Kenya in collaboration with development partners such as the World Bank, African Development Bank, USAID and KenGen among others are building upon the existing successes to expand the reach of the national grid so as to ensure more of the population has access to electricity. These initiatives have seen welcome diversification efforts with a greater focus on wind and geothermal sources to ensure they provide about 45% of electricity supply by 2022 compared to the 34% in 2017. The flagship projects are the Olkaria 140 MW Geothermal Plant and the Lake Turkana 310 MW Wind Power Plant.

KPLC and SMEs



One of the major concerns amongst manufacturers especially those who are small and medium enterprises are the constant fluctuations of the cost of electricity. As displayed in the graph above, the variable costs of electricity cause fluctuations whereas the consumption cost is relatively smooth. This leads to a scenario where companies are struggling to predict their electricity bills and are therefore ill-prepared for the unseen production costs. This hinders the manufacturing process and is often coupled with irregular supply of electricity due to the presence of power outages and disconnections. There are reports of inflation of power bills by the KPLC as per manufacturers as well as claims of negligence regarding the reading of meters leading for inaccurate numbers. These infractions are not conducive to an efficient and cost-effective manufacturing industry that seeks to supply the local market as well as export. Moreover there are constant shocks arising from the impact of oil prices and interest rates on the variable costs added to the electricity bill.

There is a noticeable gap in information surrounding price shocks as well as a lack of policy action to address such shocks. Mitigating these adverse effects would lower production costs and allow businesses to better plan their finances with fewer risks and uncertainties. This could be achieved through a greater mix of geothermal and wind energy while steadily reducing hydroelectric power reliance and the eradication of thermal energy production. This course of action would create a sustainable and cost efficient energy supply that functions on low carbon emissions. SMEs are less likely to be able to handle shocks in price and supply as they do not possess the resources to weather the shocks. A more pressing issue is that even with the grid expansion there are complaints of poor transmission and a general lack of distribution infrastructure that results in inconsistent supply as well as outright power outages that are detrimental to SMEs. Overall there does not seem to be a clear distinction between the types of SMEs and SCs to create a band of small-scale producers who are held to the same costs as businesses of that scale who are in production. This means that SMEs who are in manufacturing with power usage between 0-1,500 kWh are being subjected to the highest prices of all commercial consumers making their operation costs more expensive.

The electrification drive in Nakuru has demonstrated how better provision of electricity accelerates job creation through the slum electrification project - supported by the World Bank - and thereafter allows for the development of small businesses in the local community. The development of small enterprises improve the financial independence and wellbeing of communities as well as promotes innovation and entrepreneurship. The greater access of electricity could therefore be supplemented by cheap costs so as to allow the small businesses to thrive by lowering their production costs allowing them to increase their profit margins. A report from SEforALL researched in Kenya encourages the use of decentralised renewable energy as a cost-effective and fast option to expand access leading to increased socio-economic dividends. In Rwanda, the benefits of rural electrification saw an upshot in the number of enterprises being run significantly mills and welding shops and reduced costs by 3x as people switched from diesel to electricity. Paper studying electricity access to rural SMEs in Bangladesh concluded that there were favourable changes on the production costs, profit margin, development and modernisation of business, women empowerment, quality of life, and human development due to the electrification. The paper also encourages electrification as a method of developing micro enterprises. Impressively the concept of Industrial Prosumers of Renewable Energy (Industrial Prosumers) is most attractive where industrial operators produce a portion or all of their onsite power needs with renewable energy technologies (RETs) and sell the excess to the national/local grid or local community. KNCCI supports the advocacy by the Kenya Association of Manufacturers (KAM) in promoting access to quality, affordable and reliable energy as highlighted in their Manufacturing Priority Agenda for 2018. KNCCI further encourages efforts of Power Africa who are developing capacity with state-owned power sector entities to support legal and regulatory reform, notably the development of new Distribution and Transmission Grid codes.

Changes under the New Tariff

The intervention of the ERC kept proposed increases of the fixed charges by the KPLC at bay, the ERC boldly removed all fixed charges integrating them into the energy charges. The initial application wanted Small Commercial Power Consumers to pay a fixed charge of Kshs 300 in 2018/19 up from Kshs 150 in 2017/18 as well as a Kshs 6.35 increase per kWh prior to the ERC approval of the new tariff. The new tariff harmonisation by the ERC has split the small commercial (SC) category into two based on consumption: Small Commercial 0-1,000 kWh and Small and Medium Enterprises (SMEs) 1,001-15,000 kWh. The changes increase the predictability of tariffs and removes any fixed costs therefore there are no charges whatsoever when power is not being consumed. The new charges for Small Commercial and SME Consumers is now Kshs 15.60 up from Kshs 13.50. For Commercial Consumer in Band 1 the charges per kWh is now Kshs 12.00 up from Kshs 9.20. Regulus - a web technology consultancy - predicts that the new tariff will overall reduce costs for SC and SME consumers by Kshs 1.80 per kWh once variable costs are accounted for between July and August 2018. Furthermore we acknowledge the positive attitude proposed by the finance bill to allow for tax reductions of about 30% on electricity bills for manufacturers. One of the major benefits to large scale manufacturers over the past year has been the introduction of the off-peak usage hours that has stimulated cost reduction thus encouraged increased usage of electricity among Commercial Consumers. However this concession has not been offered to SC or SMEs due to lack of smart meters.

Recommendations

1. Environmental Protection and Reforestation Initiatives

The heavy reliance of the Kenyan National Grid on hydroelectric power raises the need for flowing rivers and healthy levels of water bodies to ensure good output levels from the hydroelectric power plants. The government needs to develop stricter rules to ensure the protection of the natural environment as well as undertake reforestation initiatives to promote rainfall thus creating more favourable weather conditions.

Action: Put into place policy protecting riparian land and mobilise resources to enable reforestation processes in key areas. This initiative to be supported by the Private Sector.

2. Integration of More Geothermal Plants and IPPs to the National Grid

The demand for energy in Kenya is steadily increasing and the initiatives to increase the grid capacity are commendable however the major concern for SMEs and the manufacturing sector in general is stable supply of electricity. This can be insured in the long term through geothermal power plant development however in the short run this can be better delivered by the promotion and integration of Independent Power Producers (IPPs) that can sell power to the grid.

Action: Review the Public Private Partnership Act to enable more private sector (Independent Power Producers) participate in the setup of geothermal plants.

3. Provision of Subsidies for Green Energy Development and Off-Grid Solutions

The expansion of the electricity transmission network is a slow and costly process that will eventually connect the entire country to the grid however there is an urgent need for smaller amounts of energy in hard-to-reach areas. This can be addressed through government subsidies to support green energy projects such as the pioneering M-Kopa solar power set that enables access to the small required amounts. These can even lead to the establishment and implementation of numerous off-grid solutions that are run independently thus not costing the government.

Action: Write policy providing subsidies for use and development of green energy projects and clearly outline the regulatory framework on off-grid solutions.

4. Development of Energy Codes and Publication of Best Practices

One major gap identified in the energy market is the lack of information. There is a need to provide basic information on pricing, provision and usage of electricity so as to better inform the commercial and domestic clients of their purchases. Moreover the ERC and KPLC should be encouraged to develop energy efficiency codes for buildings/areas as well as inform manufacturers of best practices to lower costs and increase efficiency.

Action: Mandate the ERC to develop an energy code and charge KPLC with the production of best practice informational material to be distributed to consumers.

5. Audit of KPLC Procurement and Service Delivery by the ERC

KPLC has been at the core of numerous complaints with regard to inconsistencies/wastage in procurement as well as inconsistencies/negligence in service delivery (including billing). As a government-majority owned company there is a right for the company to be accountable to the citizens it serves and therefore is liable to audits to combat the issues that are raising costs where there is no real need for prices to inflate.

Action: Write policy making KPLC accountable and commission audits for transparency.