



Kenya Power

FIVE YEAR CORPORATE STRATEGIC PLAN

2016/17 - 2020/21



Kenya Power



FOREWORD AND INTRODUCTION



The 5-Year Corporate Strategic Plan (2016/17 – 2020/21) provides a roadmap for our mandate, highlighting our major priority areas of focus for the next five years. It champions the strategic themes of infrastructure development, network management, customer centricity, loss reduction, and resource alignment as the pillars for strategy formulation. This is aimed at strategically positioning the company at the center of social economic development of the country as it continues to work towards providing reliable and competitively-priced power to all.

The plan also recognizes the aspirations of all stakeholders in the power sub-sector and brings an optimal balance of competing interests. The generation mix, network growth, and average tariff progression will all lead to more competitively-priced electricity to the customer while at the same time ensuring sustained profitability for the company. Customer and economic criteria are given supreme consideration in strategy selection given that energy is a major productive input in the economy and that the company's sustainability depends on increasing prosperity in the operating environment.

With all planned measures executed and the objectives achieved, it's expected that within the next five years:

- The customer base of the company will have grown by a minimum of 6 million customers by 2021; with a target to connect a total of 1.2 million customers annually both through grid extension and off-grid solutions.
- The infrastructure will be expanded at all levels and capacity increased in line with the planned additional 5,000 MW;
- The existing network will be modernised and automated to ensure efficient system management and speedy identification and resolution of faults within the network;
- System losses will be reduced from the current level of 19.4% to below 10% and;
- Last but not least, resources will be well aligned to ensure optimal usage and productivity.

These high expectations keep the company at the coalface of demanding and urgent tasks which I am confident will be achieved by a trusted and dedicated brand of women and men who are driven by the need to realize the dreams and aspirations of the country.

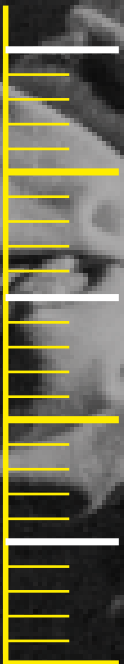
“strategically positioning the company at the center of social economic development of the country as it continues to work towards providing reliable and competitively-priced power to all.”

Hon. Kenneth Marende, EGH

CHAIRMAN, BOARD OF DIRECTORS



Kenya Power



OVERVIEW OF THE STRATEGIC PLAN



The 5-year strategic plan is guided by the intent of the company to achieve its Vision of “providing a world class power that delights our customers” and in fulfilling its mandate in the national economic development agenda.

The corporate strategy aims to deliver projects and initiatives that will strengthen and cement Kenya Power competitive advantage and secure its profitability in addition to improving power supply reliability, increase access, and price competitiveness. This will be structured around five thematic areas namely: customer centricity, infrastructure development, network management, loss reduction, and resource alignment. These five themes will be at the centre of the desired end-state of the company as expressed in the following eight strategic objectives over the five-year planning horizon:

- Improved energy-generation mix that is efficient, reliable, and competitively priced;
- Increased customer connectivity to a customer base of over 9 million customers.
- Improved electricity supply quality that exceeds customer expectations; reduce cost of doing business; and increase sales revenue which all lead to improved delivery of customer services;
- A modern, efficient, and responsive electricity system infrastructure that encompasses electricity demand growth;
- A robust distribution system that facilitates the 5,000+MW generation expansion plan;
- Reasonable return to shareholders for their investment;
- Good corporate governance and management for enhanced efficiency and service through internal capacity development and resource alignment; and
- Diversified business revenue leveraging on the existing assets and innovation.

Although this is a very ambitious and costly power network infrastructural investment program, it will go a long way in sustaining the company’s growth and expansion agenda while ensuring that quality, reliable and cost reflective electricity supply. On the same note, the company remains keenly aware that it provides an essential service as an input in productive activity and residential life in the modernizing economy and as such, recognizes customer satisfaction as a core objective.

Towards this end therefore, the strategic initiatives and programs will be implemented with equal sensitivity to favorable progression of customer satisfaction indicators as it has for the progression of its financial and operational indicators. The company is optimistic that its profitability will increase with the continued sales and demand growth in the plan period.

This will arise from the accelerating growth of the economy, massive infrastructural investment taking place in the country, and a vibrant domestic private sector. These five themes will be carried through to the Regional and County Plans, in line with the devolved County Units and salient features of each of the Regions and Counties.

With the support and dedication of the management and staff, I am confident that the company will be able to achieve and even surpass the set targets and play its role in the social economic development of this country.

Dr. Ben Chumo, OGW

MANAGING DIRECTOR & CHIEF EXECUTIVE OFFICER



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LIST OF ACRONYMS AND ABBREVIATIONS

| | | | |
|----------|--|--------|---|
| ADSS Fib | All Dielectric Self Supporting Fibre Optic Cable | GDC | Geothermal Development Company Ltd |
| AFD | French Agency for Development | GDP | Gross Domestic Product |
| AfDB | African Development Bank | GOK | Government of Kenya |
| AMR | Automatic Meter Reading | GPOBA | Global Partnership for Output Based Aid |
| CAIDI | Customer Average Interruption Duration Index | GPS | Global Positioning System |
| Capex | Capital Expenditure | GWh | Gigawatt hour |
| CFL | Compact Fluorescent Light Bulb | H2 | Horizon 2 |
| CSR | Corporate Social Responsibility | HV | High Voltage |
| DA | Distribution Automation | HVDC | High Voltage Direct Current |
| DCS | Design and Construction System | IAD | Internal Audit Department |
| DMS | Distribution Management System | ICT | Information and Communication Technology |
| DSM | Demand Side Management | IDA | International Development Agency |
| E/hse | Electricity House | IMS | Incidences Management System |
| EAC | East African Community | IOs | Internal Orders |
| EAT | Earnings After Tax | IPPs | Independent Power Producer |
| EIB | European Investment Bank | IT & T | Information Technology and Telecommunications |
| ERC | Energy Regulatory Commission | KEEP | Kenya Electricity Expansion Project |
| ERM | Enterprise Risk Management | KEMP | Kenya Electricity Modernisation Project |
| ESIA | Environment and Social Impact Assessment | KenGen | Kenya Electricity Generation Company Ltd. |
| FDB | Facilities Database | | |
| FIT | Feed In Tariff | | |
| FTTH | Fibre to the Home | | |



LIST OF ACRONYMS AND ABBREVIATIONS

| | | | |
|-----------|---|--------|--|
| KENINVEST | Kenya Investment Authority | PBT | Profit Before Tax |
| KETRACO | Kenya Electricity Transmission Company Ltd. | PPA | Power Purchase Agreement |
| Kms | Kilometers | RAP | Resettlement Action Plan |
| KPIs | Key Performance Indicator | RE | Rural Electrification |
| KPLC | The Kenya Power and Lighting Company | REA | Rural Electrification Authority |
| Limited | | RMU | Ring Main Units |
| KShs | Kenya Shillings | S,I | Supply Install |
| Kv | Kilovolt | s/s | Sub Station |
| kWh | Kilowatt hour | SAIDI | System Average Interruption Duration Index |
| LCPDP | Least Cost Power Development Plan | SAIFI | System Average Interruption Frequency Index |
| L&T | Labour and Transport | SCADA | Supervisory Control and Data Acquisition |
| LNG | Liquid Natural Gas | SCOT | Strengths Challenges Opportunities and Threats |
| LRA | Local Reading Application | SMEs | Small and Medium Enterprises |
| LV | Low Voltage | T&D | Transmission and Distribution |
| MSD | Medium Speed Diesel | TMR | Transport Mileage Returns |
| MV | Medium Voltage | TMS | Transport Management System |
| MVA | Megavolt Amperes | TXs | Transformers |
| MVAR | Megavolt Amperes Reactive | UNFCCC | United Nations Framework Convention on |
| MW | Megawatt | | Climate Change |
| MWh | Megawatt hours | UPS | Unlimited Power Supply |
| NEMA | National Environment Management Authority | USD | United States Dollar |
| NERA | National Electrification and Renewable Energy | WFM | Work Flow Management |
| | Authority | | |



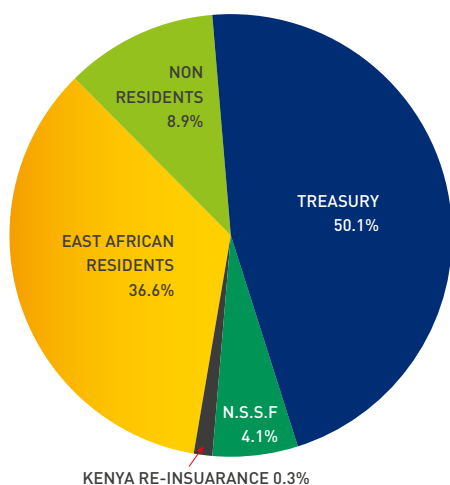
KENYA POWER

1.1 Mandate of the Kenya Power and Lighting Company Limited

1.1.1 Legislative Mandates

The Kenya Power and Lighting Company Limited (KPLC) is established as a Limited Liability Company under the Companies Act, Cap 486, Laws of Kenya. Its mandate, as obtained from its Memorandum of Association, is the production, supply and sale of electricity. However, the mandate to produce or generate electricity has since been taken over by the Kenya Electricity Generation Company (KenGen) - which was formed in 1998 - as well as Independent Power Producers. KPLC is a listed company with approximately 49.9% of its shares publicly traded on the Nairobi Securities Exchange and 50.1% of its shareholding is owned by the Government of Kenya.

Figure 1.1 Ownership of the Kenya Power and Lighting Co. Ltd as at 30th June 2016



The main law governing KPLC's operations and the energy sector as a whole is the Energy Act No. 12 of 2006. The Energy Regulatory Commission (ERC) established under this Act regulates the activities of the company to ensure compliance with the law and other legal requirements.

Policy Mandate

The current policy framework relating to the electricity sub-sector, in which KPLC is a major player, is captured in Sessional Paper No. 4 of 2004. This policy lays the framework upon which cost-effective, affordable and adequate and quality energy services are to be made available to the domestic economy on a sustainable basis over the period 2004 - 2023. The Ministry of Energy and Petroleum, as KPLC's parent ministry, provides overall leadership, oversight, guidance and direction to ensure full implementation of the policy.

The Kenya Power and Lighting Company

KPLC has the mandate to purchase bulk electricity supply, transmit, distribute and retail electricity to end-use customers throughout Kenya. Its purpose, responsibilities and core functions as a commercial state corporation in Kenya are stated in its Vision and Mission Statements and are expressed in its relationships with other key players in the power sub-sector and in its contributions to the country's long-term public policy and national development objectives, supply of electric energy to consumers.

Mission

The mission statement is the overall framework within which KPLC's strategies are formulated. The mission statement is:

“Powering people for better lives”

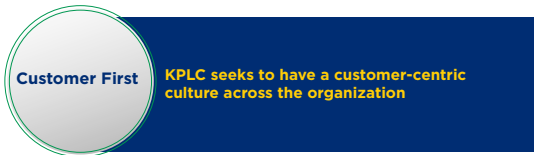
Vision

The statement that captures the medium to long-term aspirations of the Company is:

“To provide world class power that delights our customers”

1.4 Core Values

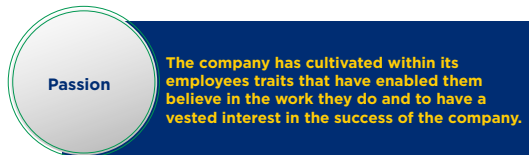
The ideals by which the company strives to carry out its operations and conduct its business are embodied in the following:



Customer First KPLC seeks to have a customer-centric culture across the organization



One Team The company thrives in a culture of working together contributing to the overall performance flows.



Passion The company has cultivated within its employees traits that have enabled them believe in the work they do and to have a vested interest in the success of the company.



Integrity The company has been sensitizing its employees on upholding their integrity as an important quality of great leadership in the company's business.



Excellence The company has proved to be consistent in its performance in striving to provide world-class power that delights its customers.

1.5 Planned Policy Initiatives

The Energy Act of 2006 and the Energy Policy are currently under review to align them to the 2010 Constitution. This has culminated in the development of the new National Energy Policy and Energy Bill, 2015 that proposes, among other things:

- i. National government to put in place a collaborative framework with the County Governments in planning and developing distribution networks and transferring them to duly licensed distributor(s) to operate and maintain them so as to have only one distributor in a given area at any particular time for efficiency, safety and technical effectiveness of the national grid.
- ii. As the distribution network expands through the various institutions as a result of increased generation and enhanced transmission, it would be necessary to ensure efficient distribution
- iii. The devolved structure in the energy sector calls for careful implementation of an open access system in distribution to be given due consideration to safeguard existing obligations and commitments.
- iv. Regularly review the electricity market to facilitate competition in retail of electricity
- v. Develop and implement the legal, regulatory and institutional framework for competitive electricity market and support regional integration of the power system to enhance regional power trade.
- vi. Provide a mechanism for determination of wheeling charges.
- vii. Setting of connection charges on the basis of affordability rather than cost, with options for payments in installments.
- viii. Develop and implement the requisite legal and institutional framework to designate one transmission licensee to be the system operator.
- ix. Introduction of penalties and compensation to electricity power customers due to power outages.
- x. Formulate a national electrification strategy to fast track consumer connections with a view to achieving universal access to electricity by 2020.

1.6 Potential Impact of Energy and Petroleum Bill 2015

The Energy Bill seeks to implement the new National Energy Policy. A central aspect of the Bill is that it brings to an end legal impediments to competition in electricity distribution and retailing. The bill allows for licensing of distribution companies as separate entities from electricity retailers and allows for new entrant companies to connect new customers from existing or new substations. The following are the key considerations affecting the competitive transformation of the electricity distribution sub-sector:

- i. Kenya Power, with its long history in the business, starts as the dominant distributor and retailer with countrywide operations already in place in the most commercially viable areas. The company will also remain well placed to continue extending its services to new areas of supply.
- ii. Kenya Power may lose its System Operator function as the bill stipulates that the System Operator shall not be involved in direct or indirect buying or selling of electricity. Thus the energy dispatch function associated with the National Control Centre is likely to be transferred to an independent transmission company.

- iii. New distribution entrants will for the most part be seeking to invest in areas presently unserved by KP by building mini-grids or off-grid power supply solutions. These areas are predominantly in remote or sparsely populated locations where the Rural Electrification and Renewable Energy Corporation (successor to REA) will be the major competitor.
- iv. New distribution and retail entrants may also seek to extend the supply value chain of captive generation by directly serving communities or project membership surrounding captive renewable generation. This scenario would be particularly attractive to investors in mini-hydro projects. However, the success and sustainability of these projects would depend on the pricing of energy supplied to the project customers as compared to national grid supplied energy.
- v. There presently are geographic cross subsidies in electricity tariffs as well as economies of scale in the existing national grid, which has enabled Kenya Power to supply electricity throughout the country at a uniform tariff. New distribution entrants in peripheral areas without access to large numbers of commercially viable customers will, however, be faced with high cost and high tariff operations. To operate profitably they will have a tariff regime more costly to consumers as compared to the prevailing pricing in the national grid.
- vi. New distribution entrants may find profitable operations where they are able to connect and serve large power customers. However, geographic limitations and inability to obtain a steady stream of new large power applicants would provide very little room for growth in business.
- vii. Service level agreements (SLAs) will have to be entered into between different entities connected along the same electricity power supply value chain in order for end customers to be assured of high quality power supply. Without SLAs that provide technical safeguards and which specify obligations and liabilities of contracting entities, it would be unlikely for new entrants, in particular new retailers, to be able to set up business.

Based on the foregoing, Kenya Power is not likely to see any significant deviation from its present growth forecast in the medium term period arising from new entrants in power distribution and retail business. However, the enactment of the bill would call for measurement of market share of all competing electrical energy distributors and retailers for purposes of national energy planning and performance monitoring.

“Kenya Power, with its long history in the business starts as the dominant distributor and retailer with countrywide operations.”

A nighttime photograph of a city street. In the background, there are illuminated skyscrapers under a dark blue sky with some clouds. In the foreground, a worker wearing a hard hat and safety vest stands on the right side of the road. The road is filled with light trails from moving vehicles, creating a sense of motion. A large, semi-transparent white circle is centered over the image, containing the text 'SITUATIONAL ANALYSIS'. A thick yellow ring is partially visible, framing the white circle.

SITUATIONAL ANALYSIS

SITUATIONAL ANALYSIS

OPERATING ENVIRONMENT, SCOT ANALYSIS AND LESSONS FROM THE PAST STRATEGIC PLAN

2.1 Overview of the Operating Environment

KPLC undertook an environmental scan to identify and assess factors within its operating environment that would impact on the execution of its mandate. This was especially important since the country legislations and policies are being reviewed to align them to the 2010 constitution.



Political Factors

Political factors likely to impact on the company during the planning horizon:

- i. Devolution of Government is reshaping the process of service delivery. As development planning is now devolved to county government, the company has to now treat counties as the basic planning units for network development plans and integrate by a bottom-to-top approach.
- ii. Elections due in the year 2017 may raise pressure for decision making to be in the interest of public opinion at the expense of commercial best interests. There will also be raised emphasis on the social obligation activities such as completing pending rural electrification and other power projects within counties.
- iii. International relations, especially with neighbouring countries, affect the level of insecurity and thus the business climate.
- iv. A regulated tariff-setting process, under the direction of public policy, has led to irregular timing of tariff reviews. Public policy expediency has taken precedent over scheduled tariff reviews that are needed to timely accommodate new revenue requirements for the sub-sector.

- v. The East African Community countries -- Kenya, Uganda, Tanzania, Rwanda and Burundi -- are increasingly seeking to bring about a more integrated East African economy. This will increase market size for local industries and thus raise power demand. It can be noted that in 2010 the EAC countries formally agreed to an expanded free trade area and launched their own common market for goods, labour and capital within the region with the goal of creating a common currency and eventually a full political federation.
- vi. Other political factors that may likely influence energy consumption during the plan period include global and regional policy changes, government financial policies and changes in taxation.

2.1.2 Economic Factors

- i. Factors forming the basis for high business growth potential for the company during the planning horizon include positive GDP growth, population growth, continued displacement of traditional forms of energy consumption and the economic consequences of recently discovered natural resources. In the context of the country's Vision 2030 Economic Development Plan, these factors allow for ambitious sales and peak demand growth expectations.
- ii. Major economic factors with potential to adversely affect the company's business continue to include the movement of fuel prices, exchange rates, interest rates and inflation affecting input costs. The effect of these factors in raising end-user cost of electricity lowers the competitive advantage, potential sales and profitability of the company.
- iii. Given that large commercial and industrial customers account for 57% of total sales but only 0.1% of total customers, any change in the number of these large-power customers will have an appreciable effect on total sales. Thus a close correlation will exist between the company's business growth prospects and the level of direct investment that will occur in the country. Of particular importance will be Vision 2030 flagship projects in the medium-term plan period, including Konza Technocity, Light Rail, Standard Gauge Railway, Lamu Port and new pipelines which, when implemented, are estimated to create new demand exceeding 1,900MW.
- iv. Competition in the electricity sub-sector from self-generation by customers or non-KPLC supply to large-power customers may not rise significantly due to the substantial price disadvantage of non-grid thermal electricity. However, a growing number of large power consumers who have access to cheap energy resources, such as sugar and tea producers, are applying to become Feed-In Tariff (FIT) or IPP generators to the national grid in addition to supplying power to themselves. This would entail loss of a significant amount of sales to the company.
- v. During the plan period, economic shocks are invariably expected to occur given the volatile nature of the operating environment. At present, economic effects of the acts of terrorism are having both direct and indirect consequences to the outlook of business. These include raising the cost of providing security to company installations, loss of significant amount of sales from the tourism industry and discouragement to many potential investors who would be prospective power customers.
- vi. Economic shocks can also be expected from crises in foreign economies as witnessed in the 2010 collapse of financial markets in western developed countries. The capacity of foreign contractors to implement major power projects in this country can be severely affected by withdrawal of financiers. Recently, in 2015, there has been a significant appreciation of the US dollar increasing the impact of exchange rate risk on the cost of doing business. External economic events can also have positive consequences on the domestic power sub-sector such as the major fall in international crude oil prices in late 2015.

vii. Recent natural resource discoveries will be a major source of business opportunities within the plan period. In the medium term, new power demand from extractive industries which are within reach of the national grid, especially titanium and coal, will be a significant source of demand growth. In the longer term, the construction of new pipelines and other facilities to serve the oil and gas industries will also significantly raise power demand. Eventually, the nascent coal, oil and gas industries will provide substantial lower-cost electricity generation resources for this country to underpin its growing economic prosperity.

Social Factors

- i. Rising education and literacy levels in the country's population entails changing lifestyles. The shift from traditional to modern is associated with a greater percentage of the population seeking electricity connection. This has been a major contributor to the acceleration in customer applications and connectivity experienced in recent decades.
- ii. Continued poverty levels in the country means electricity will remain out of reach to millions of people in spite of subsidies provided by the Rural Electrification programme and by the life-line domestic tariff.
- iii. Vandalism and crime against company assets entails a substantial direct material financial cost to the company as well as lost sales revenue and customer inconvenience resulting from outages caused by vandalized equipment. At a current average of 20 transformers vandalized per month, the company faces direct losses of about Sh 5 million monthly on these items alone. While lobbying lawmakers has achieved success in recent years in bringing about stiffer penalties for vandalism, the company still has to continue engaging communities as partners in ending the vice.
- iv. The company will continue to find necessity for diverse reasons to implement strategies for community engagement. This will especially be in regard to promoting public safety against the dangers of electricity infrastructure, marketing initiatives to drive the customer connectivity campaign, promotion of new company services and facilities, and the implementation of corporate social responsibility initiatives. Community activism has occasionally interrupted progress on power project development. Issues such as wayleaves, land compensation and undesirable environmental effects have often been reasons behind community resistance to projects.

2.1.4 Technological Factors

- i. Introduction of new technologies provides many potential benefits to the company. Typical objectives that will be served by new technologies will include reducing power losses, operational cost savings, lowered peak demand, new or increased revenue streams, improved long-term growth prospects and improved customer satisfaction.
- ii. The major new technologies that will be implemented by the company during the plan period will aim to increase SMART grid capabilities of the network. The new technologies will apply to metering solutions and automation of the power grid. The installation of fibre optic cables on power lines up to the "last mile", besides facilitating SMART grid (two-way communications with customer meters), will also allow the company to engage in partnerships with telecommunications companies in provision of retail broadband services to customers.
- iii. Change in technology use by the public can also affect the pattern of power demand growth. For example, the need for all schools and other public institutions to adopt digital technology will require all public institutions to be connected to the national grid in the next few years and will significantly raise the level of power demand. Use of energy-efficient equipment by customers may also play a significant role in the variation of demand of electricity.

2.1.5 Environmental Factors

Several factors in the physical environment will influence the outcome of the company's operations during the planning period. These include:

- i. Drought and hydro risk can potentially cause a significant change in the end-user tariffs charged on monthly basis given that 35% of power generation capacity in 2015/16 was hydro and that the standby alternative to hydro power is the much more expensive diesel power.
- ii. International environment protection policies require that efforts are made to reduce greenhouse gas emissions in production processes. Thus, these requirements will be taken into account in Public Power Agreements (PPAs) the company will enter into with power generators.
- iii. Easy access by customers to renewable sources of energy can significantly impact on the level of electricity sales. For example, the increased use of solar panels for water heating and the continuing use of wood fuel for cooking are detrimental to the company's electricity sales. While use of renewable energy sources that degrade the environment, such as wood fuel, should be discouraged, the use of solar and wind energy, where economic, should be encouraged as part of the overall energy development plan.
- iv. Other environmental factors with a bearing on operations include territorial, geographic and climatic considerations such as distance to the grid, elevation, population density, temperature and other weather attributes. These factors affect project design and implementation costs, operations and maintenance costs, and commercial viability of investments in network assets.
- v. The company also recognizes that its Demand Side Management (DSM) initiatives, by reducing the need for thermal generation during the daily system peak demand, qualify for tradable carbon credits. In this regard, the company's ongoing Compact Fluorescent Light (CFL) initiative targeting distribution of 3.3 million CFL bulbs to households is being registered with United Nations Framework Convention on Climate Change (UNFCCC) to earn revenue from carbon credits. Another company project, Energy Efficient Transformers, is also being registered for carbon credits.

2.16 Legal Factors

- i. The Legal and Regulatory environment is set to be reformed in the planning period as a result of the expected enactment of the Energy Bill 2015. The institutions to be created under this act will include: the Energy Regulatory Authority, Energy and Petroleum Institute, Rural Electrification and Renewable Energy Corporation and Energy and Petroleum Tribunal.
- ii. The Act will require integrated energy planning at both the national and county levels of government within the framework of the National Energy Policy.
- iii. The act will also specify the legal rights of stakeholders in regard to rights of way wayleaves, and use of land for energy resources and infrastructure besides setting licensing requirements for electricity generation, transmission and distribution.
- iv. An introduction to the operations of the power market that will arise from the new Energy Act will be provision of a Wholesale Spot Market. It is intended that the market provides a mechanism for determining the price of electricity not covered by bilateral contracts between sellers and purchasers of electricity. This will call for open access by generating companies to the national transmission grid to be facilitated and will lead to greater competition in electricity supply.

- v. The licencing of small power projects by County Governments is an amendment to the Energy Bill 2015 that has been proposed by ERC. When enacted, this measure will be expected to significantly increase the number of FIT generation projects seeking to connect to the national grid and may also create independent mini-grids in areas where the mini-generation projects are economically viable.

2.2 Strength Challenges Opportunity and Threats (SCOT) Analysis

The KPLC SCOT analysis serves to identify the internal factors (Strengths and Challenges) and external factors (Opportunities and Threats) that are most relevant to the achievement of the company’s goals and gives an indication of whether the goals are attainable. This analysis furthermore provides the basis for strategy formulation to exploit strengths and opportunities and mitigate challenges and threats in order to achieve the medium term goals.

| | |
|--------------------------|---|
| <p>Strengths</p> | <ul style="list-style-type: none"> • Providing an essential service • High demand • Ability to readily adapt to a changing and modernizing operating environment • Company presence in all counties • Well trained and highly skilled workforce • High revenue collection rates • Ability to attract external funding from both public and private, domestic and international sources • Ability to sustain high growth rates in new customer connectivity • Automation – Substations automation, reduces response times |
| <p>Challenges</p> | <ul style="list-style-type: none"> • Insufficient transmission and distribution network redundancy • Inadequate capacity to absorb all the loan capital financing available • High internal construction costs • High transmission and distribution operating costs • Power supply quality remains unsatisfactory • Uncoordinated planning among infrastructural developers • Low level of workforce engagement • Staff Costs as a % of Transmission and Distribution Costs (current 50%-60% to 30 - 35%) • Insufficient project commitment and post-implementation analysis, including business project re-engineering upon completion of new projects such as automation |

| | |
|-----------------------------|---|
| <p>Opportunities</p> | <ul style="list-style-type: none"> • Long-term growth market due to current low level of market penetration • New business ventures in Fibre Optic telecommunications and consulting • Formation of counties • Good potential for sourcing cheap power from neighbouring countries • Lower cost energy from economies of scale as the power system expands • Street lighting opportunities increasing linkages with county governments and sales |
| <p>Threats</p> | <ul style="list-style-type: none"> • Adverse hydrological conditions • Difficult wayleaves acquisition • Vandalism of transformers, electricity line cables and accessories • Encroachment on electricity line wayleaves • Unfavourable land use i.e. low population density in rural areas leading to high connectivity cost • Illegal electricity connections and theft of electricity • Limitations due to regulatory conditions • Erratic international oil prices • Delays in tariff reviews • Insecurity and acts of terrorism leading to loss of business • Self-generation by customers, especially the use of renewable sources such as solar and wind • Inability to absorb all new generation to be installed in the short to medium term may substantially raise capacity costs. • Levies and taxes imposed by County Government and other Government/regulatory bodies. |

2.3 Lessons from the Past Informing Current Strategy

Past power sector reforms and development initiatives have not yet brought about sufficient improvements in the performance of the sub-sector entities. This is notable in the following areas:

- i. Competition in generation by introduction of IPPs did not eliminate occurrence of power shortages as seen in the period 1997 to 2013. Hence emphasis emerged on implementing an ambitious generation expansion plan since 2013. However, in the period June 2013 to June 2015 there has been 34% generation capacity expansion against only 12% rise in peak demand. Thus, an oversupply situation has now arisen entailing a new challenge of demand creation.
- ii. The implementation of Rural Electrification programme has increased electricity access to the rural population. However, rural access to electricity remains at less than half of the urban access rate despite extensive subsidies for rural power connectivity development. In view of the fact that the majority of households are within the rural areas, electric power continues to remain out of reach for millions of these households. Thus accelerated new customer connectivity continues to be a core strategy.

- iii. Despite reforms in the industry structure (vertical unbundling), a revised Energy Act, tariff structure, and in utility regulation, power prices in real terms and operating costs have still risen by a greater per cent. From end of 2009/10 to end of 2015/16 there has been a cumulative 77% increase in the average power purchase cost per unit as compared to a 52% increase in average revenue (non-fuel) per kWh. Greater emphasis is now being placed on increasing the contribution of cheaper renewable energy sources in the generation mix to lower the unit cost of electricity. Improving operational and system efficiencies are also core strategies to reduce hidden and avoidable costs to lower the future revenue requirements of the sub-sector and keep tariffs at a minimum.
- iv. Heavy capital expenditure to upgrade and expand electrification (approximately Kshs 157 billion by KPLC in the past 5-years (2010 - 2015) has been associated more with connectivity as compared to load growth. In the 5 year period over 2.5 million new customers were connected (179% growth) as compared to increase in peak demand of 374MW (31.3%) and sales growth of 25.0%. Substantially increased sales and demand growth rates are possible arising from increased utilization of this larger distribution capacity that has already been put in place.
- v. The Eastern Africa regional power pool has not yet succeeded in raising cross-border trade in power beyond token levels as total power trade with three neighbouring countries amounted to only 1.3% of total generation in 2014/15. With expected commissioning of the new Uganda-Kenya interconnector in 2017 and the Ethiopia-Kenya interconnector in 2018, regional power exchange is expected to rise to about 6% of KPLC's total energy trade under the 5,000+MW generation expansion plan.
- vi. The power market with peak demand at 1,586MW by June 2016 is likely to still be too small to provide enough room for efficient lowest unit cost operations by multiple players in the sub-sector. Thus, besides realignment of operations of existing entities to match the devolved county government structure, no major structural change in the power sub-sector is anticipated in the medium term.
- vii. The tariff structure up to present provides no incentive to flatten the daily load curve by raising night-time energy demand thus leading to idle time for much of the base load generation. A flat time of use tariff has not encouraged customers to shift more consumption to late night hours, which would entail higher utilization of existing generation capacity. Implementation of a tariff structure that distinguishes peak, off-peak and shoulder time periods in rate setting would encourage night-time energy consumption especially by industries. This can initially be implemented on a pilot basis to gauge customer response and should be refined so as to fully cover fixed costs as well as remain revenue neutral to the company. The shift of a significant amount of demand from peak to off-peak hours would improve the generation mix leading to lower average tariffs.
- viii. Despite an increase in generation capacity by 657.5MW in the period since March 2013 - June 2016) leading to 34% reserve capacity margin as at June 2016, many new investments in the economy that could absorb the surplus generation are hampered by deficiencies in the transmission and distribution network. This is particularly the case with primary industries in the agricultural and mining sectors where investors encounter an absence of power grid in remote areas. Furthermore, in spite of the current surplus generation capacity the company is still not able to export enough energy to Uganda (UETCL) due to weak transmission link. The 5000MW generation expansion plan should be accompanied by a transmission and distribution expansion plan that identifies and aims to reach areas with high economic potential but that are currently underserved.

ix. Summary of the performance for 2015/16

Table 2.1 below summarizes the performance of the company against set out targets

| | Actual 2014/15 | Target 2015/16 | Actual 2015/16 | % Change |
|--|----------------|----------------|----------------|----------|
| Total Customers | 3,611,904 | 4,757,983 | 4,890,373 | 3% |
| Annual New Customers Connected | 843,899 | 1,000,000 | 1,253,196 | 25% |
| Estimated Population Access to Electricity | 45% | 56% | 60% | 7% |
| Breakdowns per 1000 customers per month | 9.22 | 7.5 | 6.39 | 17% |
| Average Repair Response Time hours | 4.92 | 3.5 | 2.82 | 24% |
| Customer to Staff Ratio | 333 | 432 | 439 | 2% |
| Total Sales (GWh) | 7,655 | 8,000 | 7,912 | -1% |
| Length of HV and MV network | 59,459 | 62,659 | 63,321 | 1% |
| Generation Capacity (MW) | 2,299 | 2,334 | 2,309 | -1% |
| Operational Efficiency | 20.30% | 20% | 18% * | 11% |
| Debt Age (all customers) (days) | 40.01 | 40.00 | 44.61 | -10% |
| Total Assets (Kshs Mill) | 275,493 | 277,644 | 265,946* | 4% |
| Annual Capital Expenditure (Kshs Mill) | 41,914 | 34,241 | 30,215 * | 13% |
| Profit Before Tax (Ksh Mill) | 12,110 | 12,000 | | |

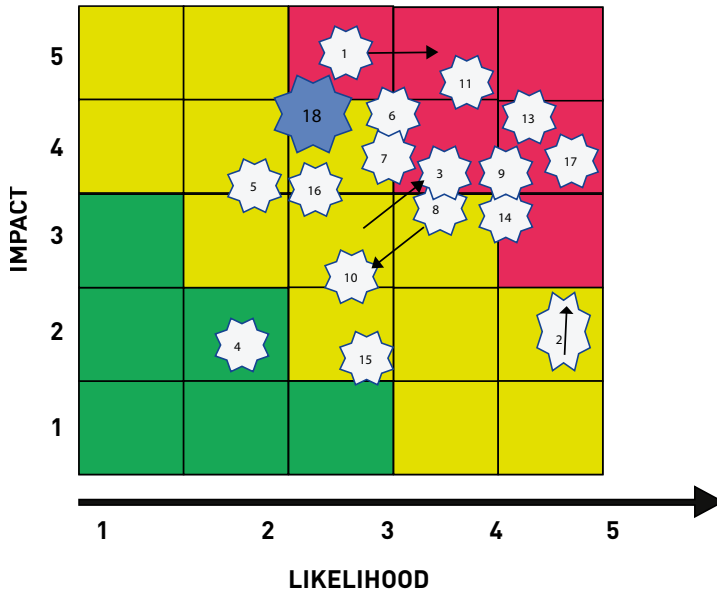
Note: *As at end of 3rd Quarter 2015/16

The Table 2.1 shows actual results performance results achieved in 2015/16 for selected KPIs as compared to the targets agreed with stakeholders. In the period preceding the strategic plan, the company exceeded stakeholder expectations in regard to new customer connectivity, supply quality improvement and in lowering operating costs as a percentage of revenue. Network expansion, sales growth, generation capacity increase were almost at par with expectations. However, customer debt age worsened, which was associated with widening of the customer base in the ordinary (small power) customer category.

2.4 Enterprise Risk Management

Enterprise risk management is an integral part of strategic management in any organization and ensures long term viability and sustainability of the Company. Kenya Power recognizes the presence of risks, both within the organization and externally that continually affect the organization's strategy implementation. In this regard, Kenya Power prepares and evaluates the Corporate Risk Profile every quarter (3 months) to evaluate the need to continue implementing activities or a need to redirect strategy. Figure 2.1 overleaf shows the Corporate Risk Profile (Heat Map) as at 30th September 2015.

Figure 2.1 Corporate Risk Profile (Heat Map) –September 2015



| Risk | |
|------|---|
| 1. | Legal and Regulatory Environment |
| 2. | Increasing competition |
| 3. | Failure to meet customer needs and expectations (Reputational risk & legal liabilities for the service charter standards) |
| 4. | Inadequate succession planning and talent Management |
| 5. | Political risk & uncertainties |
| 6. | Financial and market risks |
| 7. | Cash flow/liquidity risk |
| 8. | Pressure on power network/infrastructure due aging, expansion and contractors |
| 9. | Contractual/third party liability |
| 10. | Logistics, distribution and supply chain failure |
| 11. | Technology failure/system failure and interdependency |
| 12. | Outsourcing (Contractor and contracts management) |
| 13. | Computer crime and fraud |
| 14. | Fire health and safety related risks |
| 15. | Low productivity/staff morale |
| 16. | Increased exposure to security, terrorism, fraud sabotage and ethical risks |
| 17. | Insufficient demand growth raising demand risk for uptake of the additional 5,000 megawatts |
| 18. | Natural disasters such as El Nino weather phenomenon |

The background is a photograph of a city skyline at sunset. The sky is a mix of soft pinks, oranges, and purples. In the foreground, there are silhouettes of buildings and power lines. A large, bright yellow circular graphic is centered on the page, with a white circle inside it. The text is placed within the white circle.

**STRATEGIC
THEMES AND
STRATEGIC
OBJECTIVES**

3. STRATEGIC THEMES AND STRATEGIC OBJECTIVES

3.1 Introduction

Over the years, the Kenyan electricity market has been evolving, as have been electricity markets all over the world. The demand for electricity has grown, the technologies have changed, there is more emphasis on renewable sources of energy and erratic weather conditions are more prevalent. There is also the increased drive towards open access to electricity driven by the demand for quality supply and customers' heightened awareness. These and more changes and growth areas require a focused strategy for KPLC to maintain its competitive advantage and focus on being a market leader in this sector.

To guide KPLC in the next five years, this strategic plan highlights five (5) main themes. These are namely:



3.2 Strategic Objectives

The five themes will be the centre of the desired end state of the company as expressed in the following eight strategic objectives:

- i. Improved energy generation mix that that is efficient, reliable and competitively priced;
- ii. Increased customer connectivity to a customer base of over 9 million customers.
- iii. To improve electricity supply quality that exceeds customer expectations, reduce cost of doing business and increase sales revenue. These will in overall improve the delivery of customer services;
- iv. A modern, efficient, and responsive electricity system infrastructure that encompasses electricity demand growth;
- v. A robust distribution system that facilitates achievement of the 5,000+MW generation expansion plan;
- vi. Good corporate governance and management for enhanced efficiency and service through internal capacity development and resource alignment;
- vii. Diversified business revenue leveraging on the existing assets and innovation; and
- viii. To give reasonable return to shareholders for their investment.



INFRASTRUCTURE DEVELOPMENT

3.3 Theme 1: Infrastructure Development

One of the key enablers of the economic development agenda and aspiration of the Country as documented in the country development plan Vision 2030 is the supply of quality, reliable and affordable electricity to all Kenyans by the year 2030. Given the expansive nature of the country and the population distribution pattern, power line infrastructural expansion is critical if the Vision is to be achieved and electricity availed to all citizenry. Towards this end, a detailed grid expansion plan has been developed aimed at putting in place infrastructure that will support electricity supply, at the least cost, to over 6 million customers by 2021.

Increased focus and capital investment in network expansion both in power line extensions and establishment and/or refurbishment of substations will play a critical role in serving the growing customer base and in improving power supply quality. Without this expansion and upgrade of the power network economic growth would be severely constrained, especially in regard to industrial and commercial activities.

Infrastructure development in the planning period aims to address three major strategic objectives:

- i. Expand and upgrade the network capacity;
- ii. Increase accessibility to the grid network; and
- iii. Reduce technical losses.

Expansion and upgrade of the distribution substation capacity and power lines is necessary to absorb and distribute the 5000+ MW of new generation that will come in to the system in the medium-term planning horizon. This expansion is also necessary to meet the goal of universal access to electricity by 2020.

Table 3.1 Infrastructure Development Strategic Objectives and Performance Indicator Targets

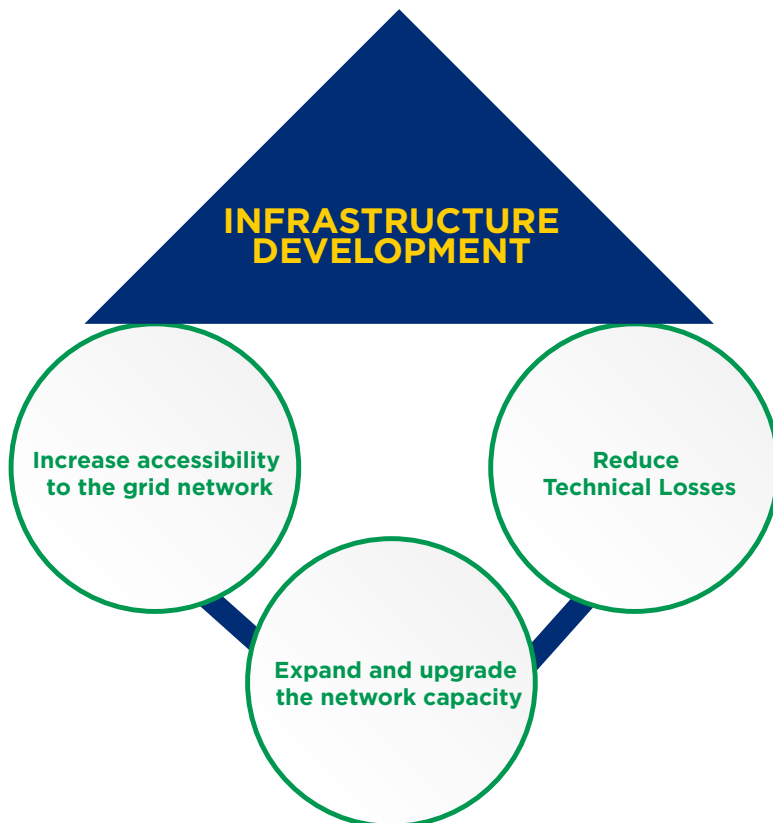


Table 3.1 Infrastructure Development Strategic Objectives and Performance Indicator

| Strategic Objective | Strategic Initiative | Key Performance Indicators 2020/21 Targets |
|--|---|--|
| <p>1. To expand the grid network infrastructure to reach and serve over 80% of the population.</p> | <ul style="list-style-type: none"> • Construction of new bulk supply points • Construction of new distribution substations • Construction of new MV power lines • Efficient and timely procurement for turnkey projects • Effective project implementation management • Improve contractors construction quality standards • Improve transport and logistics for network development • Lobby Government for legislation to compel counties to provide wayleaves and underground tunnels for utilities • Kenya Power will take the lead on undergrounding and wayleaves issues and will convene all stakeholder utilities • Initiating undergrounding in emerging business centres, such as Upper Hill, ahead of new buildings so as to avoid difficulties and higher costs when this is done late • Preparation of a report on an undergrounding strategy that can lead to a legislation • Follow the master plan for transmission and distribution as closely as possible in regard to project scheduling and priorities • Kenya Power to invest in short distance transmission lines to reach load centres in cases where KETRACO is not progressing on projects of strong interest to the company | <ul style="list-style-type: none"> • 20 new bulk supply points • 1,237.5 MVA of new bulk supply substations capacity • 116 new primary substations • 6,225MVA of new sub-station capacity • 3,768kms new MV lines constructed |

| Strategic Objective | Strategic Initiative | Key Performance Indicators 2020/21 Targets |
|--|--|--|
| <p>2. To upgrade the grid network infrastructure capacity to absorb the additional 5000+MW</p> | <ul style="list-style-type: none"> • Upgrade of primary substations • Upgrading overloaded transformers • Upgrading low voltage network to create more capacity • Re-siting transformers and creating new ones to improve supply quality • Construct mini grids in off-grid areas | <ul style="list-style-type: none"> • 41 primary substations upgraded • 100% of secondary transformers replaced or repaired • 10 mini grids targeting off grid customers |



**NETWORK
MANAGEMENT**

3.4 Theme 2: Network Management

For the company to remain competitive and ensure its longevity, the need for an efficient and robust system cannot be understated. The adoption of network automation, system reinforcement and use of modern technologies will improve supply reliability and therefore reduce losses. Self-healing technology employed will give the company and the customers the much needed comfort that should faults occur, electricity supply will be rapidly restored to affected customers. Modernization therefore, allows for remote monitoring and system control which will reduce the losses in transmission and distribution, enhance electricity supply reliability and by extension secure revenue growth. A number of strategies have been proposed to improve the robustness of the network to provide supply reliability and ensure that customers are highly satisfied and system stability is maintained. The cost of not modernizing and optimizing the network would be a steep rise in outages, which besides lowering customer satisfaction, would entail loss of revenue to the company. In addition, power outages affecting the productivity of customers would in aggregate lower economic growth.

The electricity distribution strategic plan has identified automation as one of the key factors likely to impact positively on the power market and on operations of the company during the planned period. This will be achieved through the continual automation efforts on the distribution grid, undergrounding of MV and LV feeders (based on economic viability), use of aerial bundled conductors and live line maintenance work to reduce planned outages. The benefits of these initiatives include:

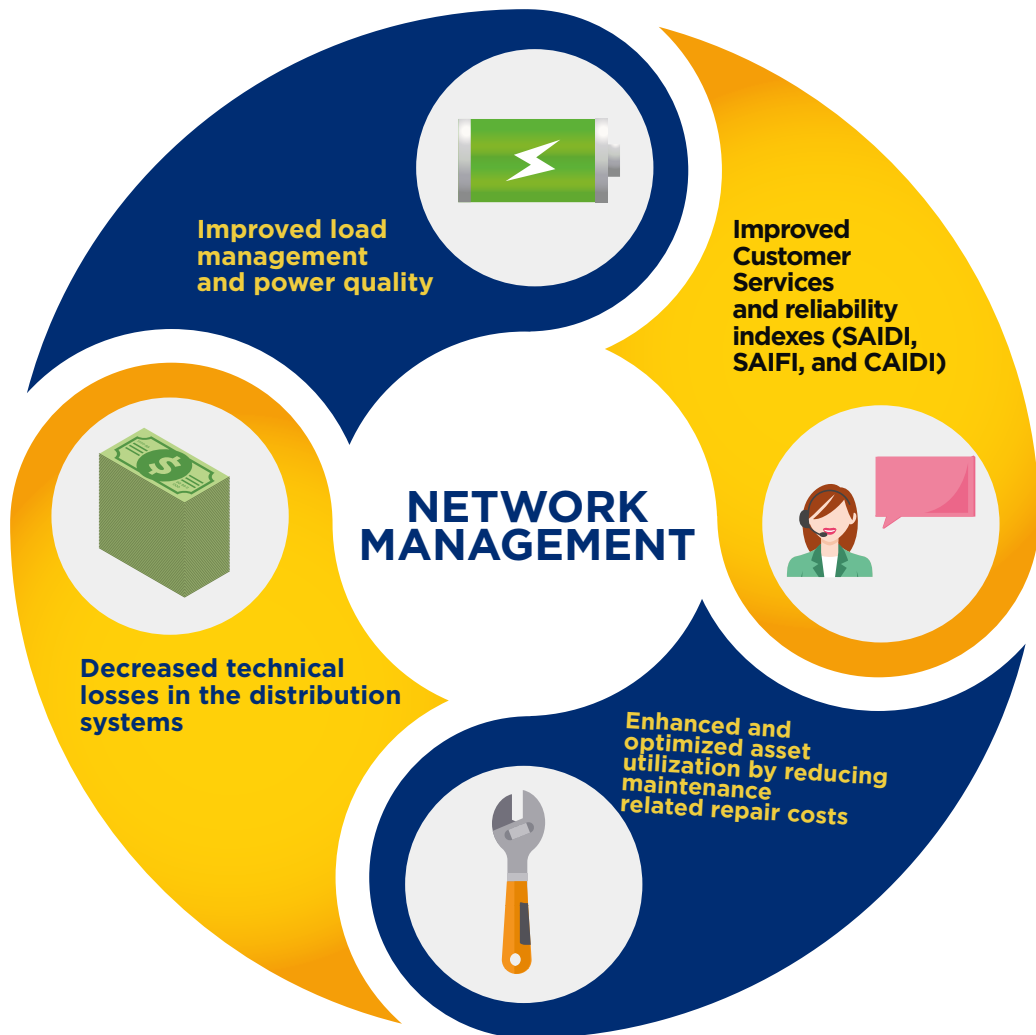


Table 3.2 Network Management Strategic Objectives and Performance Targets

| Strategic Objective | Strategic Initiative | Key Performance Indicators 2020/21 Targets |
|---|---|--|
| <p>1. To improve Power Supply Quality</p> | <ul style="list-style-type: none"> • Automation to improve transmission and sub-transmission substations and feeder management • Automation of equipment at primary substations for faster supply restoration • Undergrounding of overhead MV + LV network to eliminate • 3rd party interference with the lines & reduce way leave costs/ challenges • Refurbishment works on distribution substations • Linking of substations by MV interconnectors to improve reliability • Projects prioritization based on CBA • Improve the capacity and performance of the company's Electrical Plant workshops in regard to transformers repairs and maintenance • Extend live line maintenance in the distribution network after carrying out cost benefit analysis | <ul style="list-style-type: none"> • Customer Satisfaction Index 75% • Air Break Switches Automated 50% • RMUs Automated 70% • No of substations added to the SCADA system |

| Strategic Objective | Strategic Initiative | Key Performance Indicators 2020/21 Targets |
|---|---|---|
| <p>2. To improve power supply reliability</p> | <ul style="list-style-type: none"> • Provision of alternative supplies to major customers • Replacement of 74,000 wooden poles with concrete • System audits to identify weak points in the network • Trace clearance both on MV and LV Lines • Protecting and securing infrastructure, company premises, and assets against vandalism and insecurity • Introduction of feeder breakers on MV lines in place of auto-reclosers in small substations • Introduction of sectionalisers on MV spurs • Measure % of existing feeders, substations, primary substations and MV constructed under N-1 criterion • Initiate accurate calculation and monitoring of SAIFI, CAIDI and SAIDI power supply quality indices using the completed FDB system • Project prioritization based on cost-benefit analysis with focus on industrial areas and large power customers • Initiate rapid response motorcycles for faster emergency response. Increase proactive communication to customers and the public about power maintenance outages • Extending installations with ABC (insulated) cables which do not require tree cutting • Maintenance activity | <ul style="list-style-type: none"> • Repair response time (CAIDI) of 1 hour • LV breakdowns per 1000 customers at 1.5 per month • Feeder breakers on MV lines (82 No.) • 970 sectionalisers on MV lines • Primary substations with N-1 70% • Primary feeders with N-1 65% |



**CUSTOMER
CENTRICITY**

3.5 Theme 3: Customer Centricity

Customer satisfaction has powerful implications for the success of the company in the power market. Customer satisfaction surveys and customer relationship management metrics are being used to guide management on the importance of fulfilling customers' expectations. Upward moving customer satisfaction will entrench market share and increase revenue. However, when these indicators drop it is a warning of customers' disengagement that can lower sales and profitability. Thus, the company recognises that its future in a progressively competitive market will depend increasingly on improving its customer satisfaction ratings by addressing operational issues that are the basis of customer electricity experience.

The company is focusing on raising customer satisfaction by improving the reliability and quality of electricity supply across the country. To do this, the company, within the planning period, will address issues relating to adequate generation capacity, customer connectivity, sales, customer service and demand creation all aimed at reducing operational costs and increasing revenue.



Table 3.3 Customer Centricity Strategic Objectives and Performance Indicator Targets

| Strategic Objective | Strategic Initiative | Key Performance Indicators 2020/21 Targets |
|--|--|--|
| <p>1. To avail adequate power to meet growing demands at least cost</p> | <ul style="list-style-type: none"> • Procure power from 44 new power stations between 2015/16 and 2019/20 - both least cost and FIT projects -totalling 2,725 MW • Generation capacity mix • change from Hydro 35.7 %, Thermal (MSD) 35.9%, Geothermal 26%, Cogeneration • 1.1%, Wind 1.1% and solar 0.03% • in 2015, to Hydro 17% , Geothermal 26%, • Thermal 16%, Cogeneration 1% ,Wind 11%, Solar 1%, Coal 20% and imports 8% in 2021 | <ul style="list-style-type: none"> • Installed Capacity of 5,024MW • Thermal energy generation to be at 9% of total generation • Average generation tariff is expected to fall from US cts/ kWh 12.89 in 2015 to US cts / kWh 11.44 in 2021 |
| <p>2. To accelerate customer connectivity by connecting seven million new customers by 2021.</p> | <ul style="list-style-type: none"> • Implement Last Mile Connectivity project • Implement pre-investment schemes to fast-track connectivity • Rollout of the 3 step new connection process to reduce connectivity timelines • Automatic generation of quotations facilitated by FDB system • Line maximization • Group schemes • Slum electrification (GPOBA Schemes). • Off grid mini grids solutions | <ul style="list-style-type: none"> • New customers connected targeted at 1,200,000 per year over 5 years • Population Connectivity reaching 100% |
| <p>3. To improve electricity supply quality to exceed customer expectations</p> | <ul style="list-style-type: none"> • Refurbishment works on distribution network and substations | <ul style="list-style-type: none"> • Customer satisfaction 75% • Population connectivity reaching 90% |
| <p>4. To enhance customer satisfaction by improving customer service delivery</p> | <ul style="list-style-type: none"> • Enhance customer relationship management structures • Customer segmentation to guide the development of an effective engagement strategy • Implement in-depth customer service training for all members of staff • Creation/remodelling of customer service centres • Implementation of rapid response teams | <ul style="list-style-type: none"> • Improved Customer Satisfaction Survey (CSS) index to 75% |

| Strategic Objective | Strategic Initiative | Key Performance Indicators 2020/21 Targets |
|-------------------------------------|--|--|
| | <ul style="list-style-type: none"> • Separation of customer service from commercial services functions • Implementation/ enforcement of a uniform dress code for all customer facing-members of staff • Outsource meter reading, revenue collection and customer service functions • Complaints management module is to be upgraded and a web based application installed for use by customers • Modern customer care applications that interact with customers including Twitter and Facebook will be integrated • Extend use of Automated Meter Reading technology to improve revenue collection and reduce energy losses. | |
| 5. To reduce cost of doing business | <ul style="list-style-type: none"> • Partnerships with financial institutions to offer financing to potential customers • Allow for new connection payments to be made through the bills and to be subject to disconnection in case of non- payment. • High connection charges for many customers will be reduced by the GPOBA and Last Mile projects | <ul style="list-style-type: none"> • Connection fee affordable and paid by 100% of power applicants • No of new customers connected at 1.2 million annually • Electricity tariffs reflecting average generation cost falling from US cts / kWh • 12.89 in 2015 to US cts / kWh 11.44 in 2020 |
| 6. To increase sales revenue | <ul style="list-style-type: none"> • Increased focus towards 100% revenue collection • Install 2.8 million smart meters to better capture customer consumption data and facilitate two way communications and improve load management • Acquire a Debt Collection Management Module • Continued roll-out of Automatic and Prepaid Meter Systems • Expand street lighting project across the country | <ul style="list-style-type: none"> • Sales growth averaging 6% annually • 30 days for receivables • 2.8 million Smart Meters installed |

| Strategic Objective | Strategic Initiative | Key Performance Indicators 2020/21 Targets |
|---|---|--|
| | <ul style="list-style-type: none"> • Grow demand among existing customers through reduced electricity costs • Improve the robustness of the network to reduce customer outages • Reduction in commercial losses and power theft by new initiatives such as outdoor metering • Increased sales from new customers • Premium customers to have dedicated lines • Additional methods for vending pre-paid tokens besides MPESA such as use of sms without cost • Introduction of centrally controlled pre-paid accounts allowing them to be movable if customers change premises • Introduction of self-service kiosks as a substitute to banking halls and introducing a small fee for customers using banking halls • Converting defaulting post-paid customers to pre-paid • Marketing and customer education campaigns to promote use of electrical appliances | |
| 7. To facilitate electricity demand growth of 6% annually | <ul style="list-style-type: none"> • Accelerate new connections towards universal electricity access by 2020 from approximately 52% access rate in December 2015 • Connect Vision 2030 Flagship projects to provide 1927MW in new demand. Vision 2030 flagship projects, namely the ICT Park, light rail, standard gauge railway, Port of Lamu, new pipeline pumping stations and resort citiesShould Vision 2030 projects not be timely realised the company will be pursuing the following additional strategies: | <ul style="list-style-type: none"> • Peak demand of 2,864MW • System capacity factor of 56% • Sales reaching 11,408 GWh • Sales growth averaging 6% annually • Population connectivity reaching 90% |

| Strategic Objective | Strategic Initiative | Key Performance Indicators 2020/21 Targets |
|---------------------|---|---|
| | <ul style="list-style-type: none"> • Ensuring that effective collaborations are followed with private sector organizations such as KAM and KEPSA to provide sufficient power infrastructure for expansion of existing business and to meet the needs of new investors • Ensuring that electricity infrastructure closely follows the development of new roads so as to timely capture new demand arising from new urban and commercial centres • Support to GOK efforts to attract many new large-scale investments which, together with normal growth from existing and new ordinary customers, should contribute over 2,000MW in new demand • Improve the corporate brand and image promotion to enhance engagement with private sector stakeholders. This is to include sponsoring public engagement events such as sports tournaments and heightened media and advertising presence • Timely deliver new transmission and distribution infrastructure to facilitate planned generation and demand growth | |

Off-grid Mini grids

To achieve universal access, the company will also be focusing on bringing on board customers away from the existing grid within areas zoned initially as “off-grid.” These areas are considered to be far away from the main interconnected grid especially in the northern part of the country where the population is scattered across the vast land areas. The company is currently considering deployment of off-grid mini grids in these areas through use of hybrid sources of energy such as solar-diesel and wind plants. It is estimated that about 10% of the population will receive access to electricity through this means.

A close-up photograph of a male worker in a yellow hard hat, safety glasses, and heavy-duty gloves working on electrical equipment. The worker is focused on his task, using a pair of red-handled pliers. The background is a bright, overcast sky. A large, semi-transparent yellow circular graphic with a white center is overlaid on the image, containing the text "LOSS REDUCTION INITIATIVES".

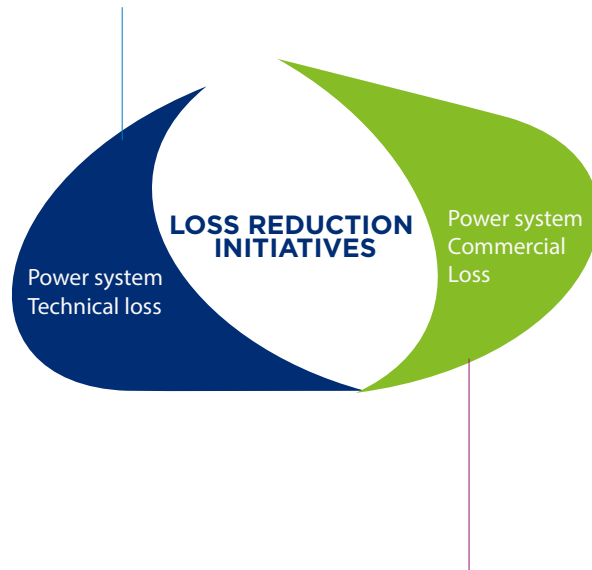
**LOSS REDUCTION
INITIATIVES**

3.6 Theme 4: Loss Reduction Initiatives

Network losses represent a major cost in the delivery of energy hence the conscious drive to have it carefully monitored and managed. A reduction in energy losses creates a proportional increase in the trading margin reflected in the company's Income Statement. The company targets to reduce system losses from double to single digits over time, improving the energy balance, reducing energy purchase costs and increasing revenue. To achieve this, the company will invest in system management tools and bulk digital metering solutions that will allow a more robust data collection to effectively understand and monitor consumer behavior, network impact and control energy usage. This increased understanding and access to information will enable the company to more easily overcome the challenges of system losses by implementing appropriate modern, more efficient and cost saving technologies such as outdoor metering and smart meters.

Loss reduction to improve profitability within the planning period targets systems losses declining from 19.4% in 2015/16 to below 10% by 2020/21. This will be achieved by focusing on the following two objectives:

To reduce power System Technical Losss by 2%



To power System Commercial loss by a total minimum of 9.5%

The loss reduction projections above are based on the assumption that all initiatives and programs identified below will be implemented within the planning period.

The loss reduction project will result in increased gross profit resulting from reduced power purchase costs and revenue increase.

Note: The value of 1 percentage point reduction in system losses in the current situation of surplus generation capacity translates to approximately Ksh.766 million annual power purchase cost savings at present. As there is no significant load shedding at present, sales increase due to loss reduction may come only from some of the commercial losses translating to additional sales. One percentage point reduction in commercial losses, if translated into additional metered sales will result in approximately Ksh 1.3 billion additional annual revenue.

Table 3.4 Loss Reduction Strategic Objectives and Performance Indicator Targets

| Strategic Objective | Strategic Initiative | Key Performance Indicators 2020/21Targets |
|--|--|--|
| <p>1. To reduce power System technical loss by 2% over the next five years</p> | <ul style="list-style-type: none"> • Distribution system reinforcement and upgrade projects with loss reduction benefits • Intensifying power system maintenance • Improving power factor by installing more capacitors at 11kV level • Extending the MV network to shorten LV lines, where losses are highest • Increasing the number of distribution transformers to shorten LV lines • Reconnector MV feeders, attend to poor joints / connectors • Reconfigure heavily loaded feeders / add s/stns near loads • System studies to determine network sites having highest losses and thereafter implement remedial actions • Reconductoring of MV feeders lines • Install capacitor banks on MV feeders | <p>Technical Losses at 9.1%</p> |

| Strategic Objective | Strategic Initiative | Key Performance Indicators 2020/21Targets |
|---|--|---|
| <p>2. To reduce Commercial Loss by 7.5% in the next five years.</p> | <ul style="list-style-type: none"> Regular global sweeps and inspections of meter installations Outdoor metering for large power customer Metering distribution feeders Install meters in distribution transformers for energy balancing. Acquire meter data control centre Acquire and implement energy balance module Acquire a debt collection management module GPOBA programme for providing power to peoples' settlements on-going Roll out smart metering for domestic and small commercial customers consuming above 500 kWh per month Roll out pre-paid meter systems to majority of domestic and small commercial customers Upgrade of computer hardware/software for the billing system Frequent anti power theft campaigns | <ul style="list-style-type: none"> 6,000 outdoor meters installed 1,000 distribution feeders metered 50,000 distribution transformers metered 2.8million smart meters installed Prepaid meters installed Global sweep carried out 100% 100% meter reading coverage Anti-power theft campaigns carried out |



**RESOURCE
ALIGNMENT**

Theme 5: Resource Alignment

Introduction

Implementation of the strategic initiatives under the themes explained above over the five-year planning horizon will require an enormous amount of resources. This can be generally grouped into human and financial resources.

3.7.1 Human Resources Requirements

The company underwent structural re-organization that has seen the company increase the number of its operational regions from nine to ten and further devolved its activities to each of the 47 counties by opening up county offices. This is complemented by the company's overall focus of having the right mix in Human Capital to deliver on the key corporate strategic objectives. Towards this end, the company will strive to achieve the following strategic objectives that ensure that human resources are aligned to the business strategies and initiatives:

- a. Talent management;
- b. Developing leadership capability;
- c. Organizational culture realignment to strategy and structural changes;
- d. Enhancing staff welfare and retention strategies; and
- e. Providing suitable work environment by ensuring that facilities are available for use, in good and optimal condition.

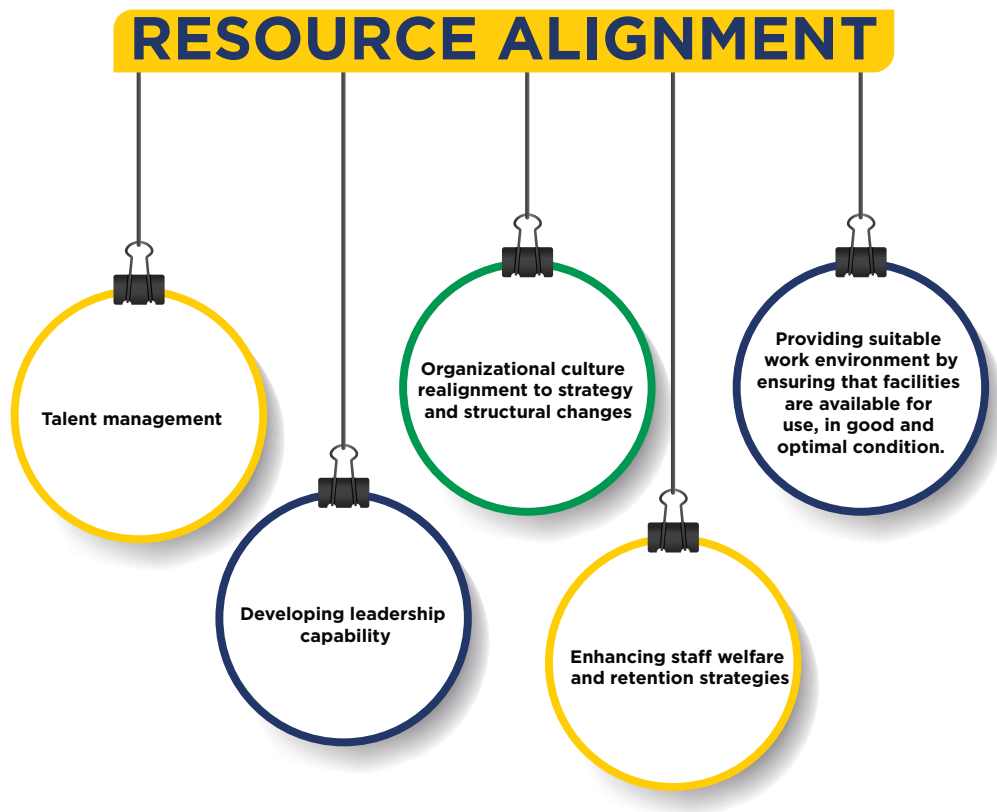


Table 3.5 Human Resource Strategic Objectives and Performance Indicator Targets

| Strategic Objective | Strategic Initiative | Key Performance Indicators 2020/21 Targets |
|----------------------------------|---|---|
| Talent management | <ul style="list-style-type: none"> • Identification of critical roles and critical talent • Undertaking competency mapping • Developing a comprehensive manpower plan • Implementing needs-based training programmes • Managing staff costs • Improve employee productivity | <ul style="list-style-type: none"> • Competence mapping report • 3 successors candidate per position • Productivity index of 77% • Sales per employee of 1,340 • Staff costs as a % of transmission and distribution costs at 30% • 100 % of employees trained as per the needs assessment report |
| Developing leadership capability | <ul style="list-style-type: none"> • Implementing leadership development programmes • Implement staff engagement meetings and activities • Engage a reputable consulting firm to design an effective staff | <ul style="list-style-type: none"> • 1,000 management staff trained on leadership • Staff engagement index of 80% |

| | | |
|--|---|--|
| <p>Enhancing staff welfare and retention strategies</p> | <ul style="list-style-type: none"> • Implement staff engagement meetings and activities • Encourage staff participation in extracurricular activities | <ul style="list-style-type: none"> • Staff engagement index of 80% |
| <p>Organizational culture realignment to strategy and structural changes</p> | <ul style="list-style-type: none"> • Culture change programs • Encourage employee mentorship programmes | <ul style="list-style-type: none"> • Customers and Employee satisfaction index of 75% |
| <p>Provide suitable work environment</p> | <ul style="list-style-type: none"> • Maintenance, renovation, rehabilitation and redecoration of existing facilities • Asset management • Construction of offices, depots and stores in partnership with RBS • Expansion and refurbishment of existing facilities • Securing of existing facilities • Replacement, rationalization and disposal of obsolete furniture and equipment | <ul style="list-style-type: none"> • Work environment index of 92% • Completion of projects (e-plants, depots, stores and e-houses, boundary walls and security works and installations to 100% • Implement 100% preventive maintenance, small and major R&M works identified in the master plan. • Annual identification and disposal of obsolete equipment's and furniture |

3.7.2 Staff Projections for 2016-2021 Period

Staff growth is mainly determined by number of customers and the size of the network operated by the company measured as the customer to Staff ratio and sales per employee. A linear relationship between the above parameters and staff growth would ignore other efficiency dynamics and lead to a very high number of employees. A provision of 2% staff growth has been made based on the following assumptions:

- i. Processes mechanization and automation will be stepped up allowing for a modest increase in technical staff;
- ii. Improved network maintenance and refurbishment will reduce the need for more maintenance staff;
- iii. Staff in support functions will remain at current levels;
- iv. Productivity levels will continue improving;
- v. Annual sales growth will improve to 6% consistent with the expected 5,000+MW generation plan demand creation initiatives; and
- vi. Annual connectivity will be 1 million customers.

Based on the above, the table 3.6 below indicate the expected staff growth and sales per employee in the period.

Table 3.6 Projected No. Of Customers, Staff and Sales

| Month/ Year | No. Of Customers | No. Of Staff (2% Growth/Year) | Customer: Staff Ratio | Sales/Employee |
|-------------|------------------|----------------------------------|-----------------------|----------------|
| 15-Jun | 2,330,962 | 10,465 | 223 | 628 |
| 16-Jun | 2,757,983 | 10,590 | 260 | 685 |
| 17-Jun | 3,611,904 | 10,845 | 333 | 715 |
| 18-Jun | 4,611,904 | 11,062 | 417 | 774 |
| 19-Jun | 5,611,904 | 11,283 | 497 | 839 |
| 20-Jun | 6,611,904 | 11,509 | 575 | 908 |
| 21-Jun | 7,611,904 | 11,739 | 648 | 984 |

3.7.3 Funding Requirements for Implementation of the Strategic Plan

Energy projects are capital intensive and will therefore require a lot of funding more so now that majority of the projects and initiatives planned for implementation are geared towards expanding and refurbishing the grid network. It is estimated that a total of 2,133Million US Dollars (US\$) will be required over the next five years to finance the strategic plan as shown in table 3.7 below.

Table 3.7 Summary of the Strategic Plan Financial Requirements

| | Strategic Objective | Estimated Amount Required (Ksh.Million) | Estimated Amount Required (US \$Million) |
|---|----------------------------|---|--|
| 1 | Infrastructure Development | 20,000 | 198 |
| 2 | Network Modernization | 49,480 | 490 |
| 3 | Customer Centricity | 31,580 | 313 |
| 4 | Loss Reduction | 111,345 | 1,102 |
| 5 | Resource Alignment | 7,200 | 71 |
| | Total | 219,605 | 2,174 |

The projects will be implemented over the five year period with the capital expenditure for each year estimated as below:

Table 3.8 Summary of the financial requirements

| Year | Planned (US\$ M) | | | | | |
|---------|------------------|---------|---------|---------|---------|-------|
| | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | Total |
| Capital | 491 | 432 | 430 | 421 | 400 | 491 |

The funds will be sourced internally and externally by either reinvesting profits or borrowing under competitive terms.

3.7.4 Financial Strategies

The following financial strategies are to be pursued:

- i. Operational efficiency improvement by keeping growth in T&D costs lower than growth in electricity revenue (non-fuel) by an average difference of 4% (percentage points) annually;
- ii. Revenue gains from new customer connections (approximately 5% on average of annual total revenue);
- iii. System losses reduction to increase gross profit by the equivalent of 1.3% of total revenue for each one percentage point loss reduction;
- iv. Financial gains from improvement in electricity supply quality entailing increased sales from reduced aggregate interruption time; and
- v. Growth in new revenue streams from diversified business in particular the leasing of fibre optic telecommunications capacity.

3.7.5 Financial Projections

Based on implementation of this development and growth plan under the assumption of adequate tariff level, Profit Before Tax is expected to rise from Ksh 12,255 million in 2014/15 to Ksh 13,009 million in 2019/20. Total assets are expected to grow from Kshs 275,493 million to Kshs 438,384 million over the same period. (See Table 3.9.) These growth projections are based on the assumptions and financial strategies explained below and are also subject to the sensitivity factors as described.

3.7.6 Major Assumptions

The following major assumptions are associated with these results:

- Allowable system losses level is assumed making fuel cost recovery almost the same as fuel cost;
- Tariff revision approved in 2015/16 to commence in 2016/17 and on 3-year schedule;
- Thermal generation in energy mix declines to 9%;
- Annual Average total sales growth of 6% ;
- Connection of Vision 2030 Flagship projects and other large-scale investments to absorb the new 5,098MW of generation of which 652.5MW is already commissioned and 2,726 MW is to be completed in the plan period.

3.7.7 Sensitivity Factors around Revenue and Profit Projections

The major sensitivity factors that will affect revenue and profit during the plan period are the following:

- i. Continued growth in the national economy as reflected by GDP that will raise energy demand by all customers as well as ensure viability of market penetration as new customers are connected.
- ii. Achievement of the ambitious sales and consequential revenue targets associated with absorbing the new 5,098MW of generation capacity will depend on the success of the Vision 2030 Flagship projects implementation as well as other major large scale investments occurring in the country.
- iii. Capacity charges payable to IPPs arising from the investment in the new generation plant poses a major risk to profitability if demand is insufficient to absorb the new capacity.
- iv. Tariff adjustment approval according to the scheduled 3 year intervals will be needed to take account of the revenue requirements of new generation PPAs, as well as changes in the operating cost structure and levels of the company.
- v. The reduction in power system losses will have an appreciable effect on the cost of energy.
- vi. The movement of the bulk supply tariff as a result of the changing generation mix and imported fuel prices will determine the extent to which the fuel cost surcharge has to be applied to raise revenue.
- vii. Finance costs as a result of large scale borrowing to finance capital expenditure will have an appreciable effect on pre-tax profits.
- viii. Staff costs as a percent of total transmission and distribution cost will have an appreciable adverse effect on profitability if it worsens from the present 49%.
- ix. New technologies such as the proposed smart grid will have an appreciable positive effect on the company's operating efficiency and will reduce T&D costs as a percent of revenue.

3.7.8 Projected Financial Performance

The projected Financial Performance during the plan implementation period is shown in Table 3.9 below.

Table 3.9 Projected Financial Performance 2016/17 to 2020/21

| | 2016/17 | | 2017/18 | | 2018/19 | | 2019/20 | | 2020/21 | |
|-----------------------------------|-----------------|--|-----------------|--|-----------------|--|-----------------|--|-----------------|--|
| | Projected | | Projected | | Projected | | Projected | | Projected | |
| Units purchased (GWh) | 10,356 | | 10,926 | | 11,527 | | 12,161 | | 12,740 | |
| System losses | 18.90% | | 18.40% | | 17.90% | | 17.40% | | 16.90% | |
| Total sales –(GWh) | 8,394 | | 8,923 | | 9,503 | | 10,149 | | 10,587 | |
| Profit & Loss Accounts | | | | | | | | | | |
| Revenue | | | | | | | | | | |
| Electricity sales | 88,976 | | 94,584 | | 100,732 | | 107,579 | | 112,279 | |
| Forex recoveries - Power purchase | 2,756 | | 2,894 | | 3,038 | | 3,190 | | 3,350 | |
| Company operations | 2,150 | | 2,279 | | 2,416 | | 2,561 | | 2,714 | |
| Fuel cost recoveries | 15,821 | | 16,770 | | 17,776 | | 18,843 | | 19,973 | |
| Total revenue | 109,703 | | 116,527 | | 123,962 | | 132,173 | | 138,316 | |
| Power purchases | | | | | | | | | | |
| Non-fuel | (52,395) | | (55,015) | | (57,766) | | (61,232) | | (64,906) | |
| Forex cost | (2,756) | | (2,894) | | (3,038) | | (3,190) | | (3,350) | |
| Fuel cost | (15,981) | | (16,939) | | (17,956) | | (19,033) | | (20,175) | |
| Sub-Total | (71,132) | | (74,848) | | (78,760) | | (83,455) | | (88,431) | |
| Gross margin | 38,571 | | 41,678 | | 45,202 | | 48,718 | | 49,886 | |
| T&D cost | (20,902) | | (22,183) | | (25,213) | | (26,929) | | (27,221) | |
| Depreciation | (7,106) | | (7,800) | | (8,400) | | (8,942) | | (9,423) | |
| Sub-Total | (28,008) | | (29,983) | | (33,613) | | (35,871) | | (36,644) | |
| Gross margin as % Sales | 35% | | 36% | | 36% | | 37% | | 36% | |
| Total operating income | 10,563 | | 11,695 | | 11,589 | | 12,847 | | 13,242 | |
| Other operating income | 7,208 | | 7,840 | | 8,407 | | 7,909 | | 8,328 | |
| Net finance (income)/cost | (4,366) | | (5,626) | | (5,367) | | (5,223) | | (5,667) | |
| Profit/(Loss) before tax | 13,405 | | 13,909 | | 14,630 | | 15,533 | | 15,903 | |

Table 3.10 Balance Sheet

| Fixed and Current Assets (KShs million) | | | | | |
|--|----------------|-----------|-----------|-----------|-----------|
| | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 |
| | Projected | Projected | Projected | Projected | Projected |
| Total assets | 340,511 | 371,850 | 407,284 | 438,384 | 471,771 |
| Equity and liabilities | (KShs million) | | | | |
| Total equity and liabilities | 340,511 | 371,850 | 407,284 | 438,384 | 471,771 |

Table 3.11 Financial Performance Indicators

| | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|
| | Projected | Projected | Projected | Projected | Projected |
| Current ratio | 1.42 | 1.38 | 1.34 | 1.241 | 1.201 |
| Debt service coverage | 2.07 | 1.66 | 1.42 | 1.56 | 1.52 |
| Self- financing ratio | 63% | 61% | 60% | 63% | 65% |
| Days' receivable | 60 | 59 | 59 | 58 | 58 |

3.8 Links to Grid Network Development and Maintenance Plan

Kenya Power Grid Development and Maintenance Plan

The Grid Development Plan attached provides a detailed power supply value chain with activities that centre on the committed, planned and future electricity generation, transmission and distribution projects. In summary, the document is arranged as follows:

- i. **Load forecasting** - This encompasses the review of load forecast assumptions, pertinent variables, historical data set and methodology, taking cognizance of the future macro-economy.
- II. **5000+MW Generation Plan** - It discusses the medium-term planned generation projects under the 5000+ MW programme, the time frame and the long-term requirements necessary to meet the growing national load at least cost. It also includes a review of the expected energy mix that would be applicable with the introduction of the different generation sources.
- III. **Transmission Network Development Plan** - It provides a detailed summary of both the committed and future transmission projects including the regional grid interconnections requirements. The projects are mainly developed by KETRACO as identified and planned under the least cost power development plan.
- IV. **Distribution Infrastructure Development Plan** - The plan indicates the need for the company to invest in the distribution and transmission infrastructures (66kV Network) for the short-term period of 2016-2021. The plan proposes the required system reinforcement, upgrades and network expansion program that ensures that the network is robust and reliable to transmit and carry the load demands as and when it grows and more so with the injection of the new 5,000MW generation.
- V. **Network Management Plan** - In a bid to ensure 100% network asset maintenance and automation, the Network Management Strategic Plan has put in place plans to reinforce, upgrade, underground (based on economic viability and prudent resource use) and refurbish the network. This is aimed at reducing the interruptions per 1,000 index, increased customer satisfaction and a well maintained network.

Other plans that are linked to this strategic plan although not part of the plan include the Least Cost power development plan, 5000+MW development plan, Ministry of Energy and Petroleum strategic Plan and the Vision 2030 Medium Term Plan.



RESOURCE MOBILIZATION

RESOURCE MOBILIZATION

4. FINANCING THE DEVELOPMENT PLAN

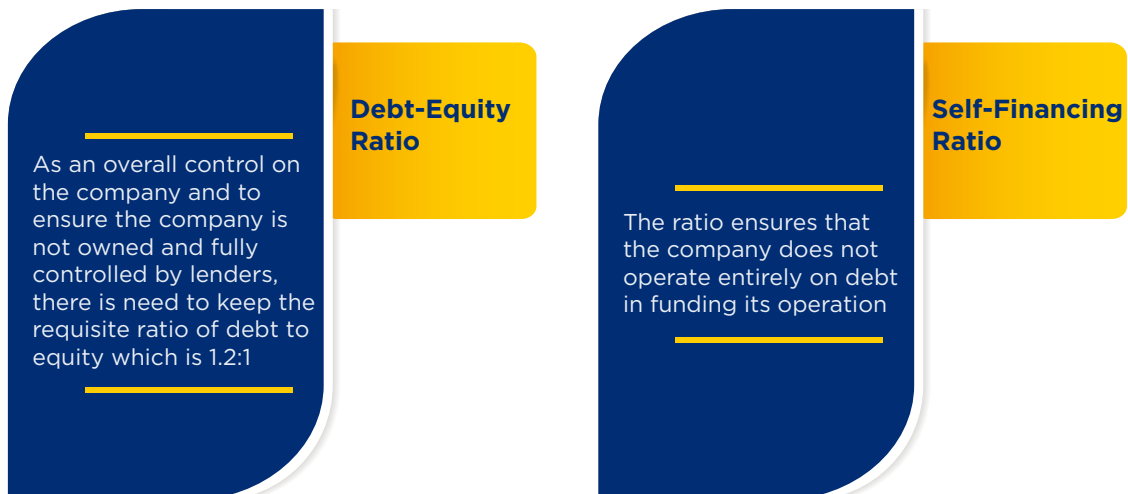
4.1 Funding Framework and Policy

Recognizing the capital intensive nature of the company's investments, the modest regulated returns and the long investment recovery period, a framework and policy is necessary to define the mix of loans by tenor and costs so that the impact to the company remains within sustainable levels.

The company will observe the following requirements with regards to loans:

- a) Self-Financing Ratio** - It defines the level at which the company can finance its projects and looks at the ability of the company to supplement its loan funds. The self- financing ratio assumes that the lending should be matched in acceptable ratios with own funds. In the case of KPLC, the self-financing ratio is at 25%. The ratio ensures that the company does not operate entirely on debt in funding its operation.
- b) Debt-Equity Ratio** - This measures the company's financial leverage calculated by dividing the total debt by the equity. As an overall control on the company and to ensure the company is not owned and fully controlled by lenders, there is need to keep the requisite ratio of debt to equity which is 1.2:1. The company will continue measuring this ratio with the aim of ensuring that it is being monitored at all times.

A comprehensive evaluation of the company's operations and finances is currently underway with the help of the World Bank which, when completed, will provide a clear definition on the levels of borrowing and the components of the borrowed moneys. This will be completed by the end of fiscal period 2016/17 and will form a clear basis for defining a comprehensive funding policy in the company.

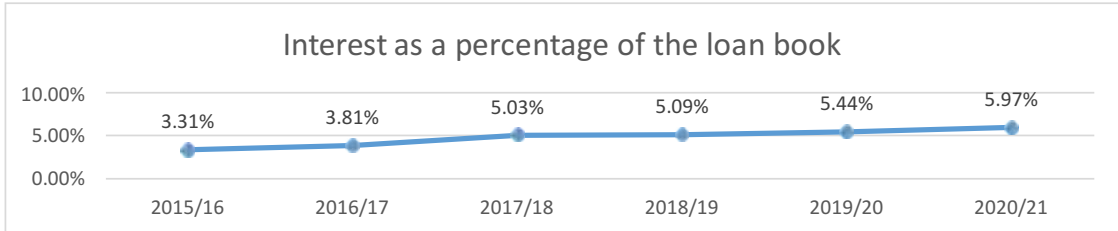


4.2 Status and Trends of Significant Financial Ratios

Interest as a Percentage of the Loan Book

An important aspect the company needs to manage is the funding costs, which at the moment averages below 6%.

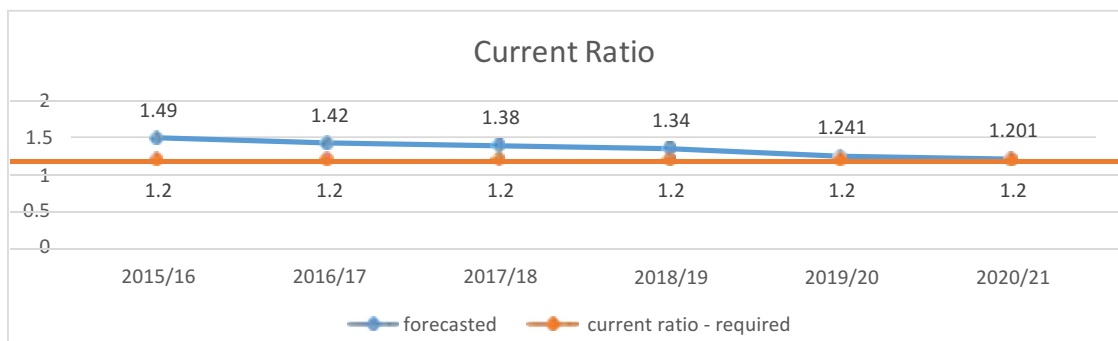
Figure 4.1 Interest as a Percentage of the Loan Book



From the graph Fig 4.1 above, it can be deduced that the interest as a percentage of the loan book stands at 3.31% during the financial year of 2015/2016. This rate is expected to remain steady touching 5% in the financial year 2017/2018 through 2019/2020.

Current ratio should be >1 - The current ratio defines the solvency and liquidity of the company. The ratio compares the current assets against the current liabilities and indicates the ability of the company to meet its recurrent obligations.

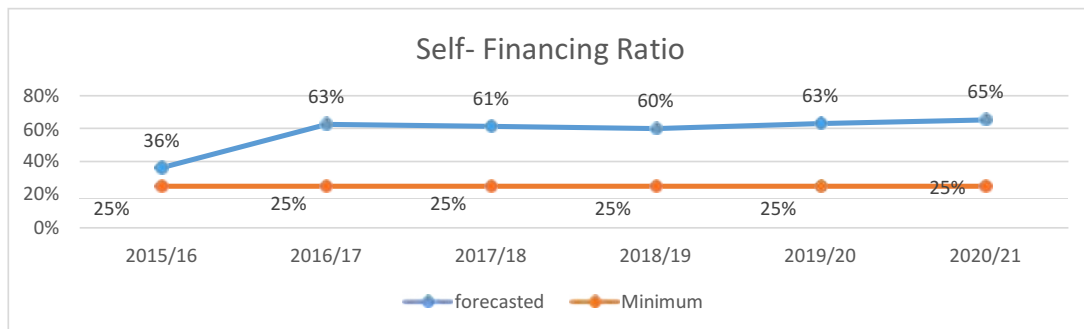
Figure 4.2 Current Ratio



From Fig 4.2, the ratio in 2015/16 is 1.49 which is slightly better than the minimum ratio of 1.20. As the years progress, the ratio declines gradually towards the one set by most of the lenders.

Self-Financing Ratio should be 25% - This is measured by taking the profitability of the company excluding depreciation and comparing with the total loan expenditure.

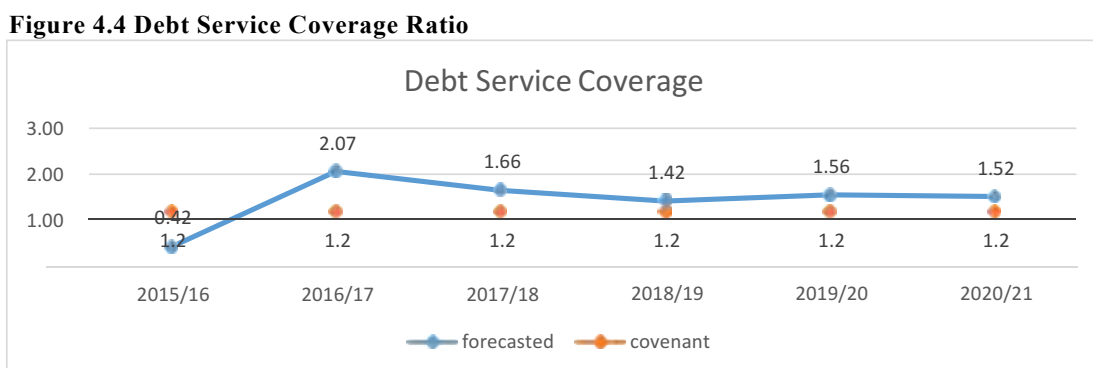
Figure 4.3 Self-Financing Ratio




The SFR rate is expected to remain strong over the period. As shown in figure 4.3 the rate is well in excess of the 25% set by the lending covenant throughout the projection period.

Debt Service Coverage Ratio of 1.2 - This measures the extent to which the company is able to generate resources to be able to repay its debt obligations as they fall due. The ratio looks at the profits plus depreciation during the year as a ratio of principal debt repayment and interest.

Figure 4.4 Debt Service Coverage Ratio



The DSCR is slightly above the covenanted level except in years 2016 due to the huge repayment of refinance facilities and in 2018 when it is expected to dip as repayment of facilities currently on moratorium takes effect.



**STRATEGIC PLAN
IMPLEMENTATION
AND MONITORING
FRAMEWORK**

STRATEGIC PLAN IMPLEMENTATION AND MONITORING FRAMEWORK

5 IMPLEMENTATION OF THE STRATEGIC PLAN

5.1 Implementation Strategy

The Board of Directors will provide strategic direction towards ensuring that this strategic plan is implemented effectively. The implementation matrix contained in Annex I provides a framework to guide the Board and top Management of KPLC in translating strategic objectives into actions and reporting performance levels. The matrix will be operationalized within the five-year period through annual performance contracts of the Board, Management and the Staff.

Specifically, management shall:

- Adopt a comprehensive implementation programme that will involve awareness creation to all staff for effective cascading of the plan;
- Link the Strategic Plan to the Performance Contracting targets. In this respect, activities in the strategic plan implementation matrix will be implemented through annual Performance Contracts of the Board, CEO & MD and top Management to ensure compliance to the strategic plan. This is in tandem with ISO and other Quality Management standards and practices;
- Prepare and submit relevant monthly, quarterly and annual reports based on the various functions and informed by best practice;
- Undertake a mid-term review of the strategic plan to ensure continued alignment to Government's Second Medium-Term Development Plan of Vision 2030;
- Undertake end-of-term review to not only determine success but also lessons learnt; and
- Automate monitoring and evaluation of implementation of the strategic plan to improve efficiency in reporting, analysis and follow up.

5.2 Performance Reporting Structure

Accountability for performance will be cascaded in alignment with the organization structure as follows:

- Corporate KPIs and targets are set at the Board level in the context of the annual Performance Contract. This contract contains a combination of KPIs reflecting the company's objectives and public policy objectives.
- The Corporate KPIs are all assigned to the MD & CEO's performance contract which is expanded to include other high priority KPIs to which the MD & CEO is accountable.
- All the KPIs in the corporate and MD & CEO's performance contracts are cascaded to the relevant divisional and functional heads and drilled down to management staff with reference to their specialised contributions.
- Corporate operational KPIs are also disaggregated into regional, county and branch components with targets customized to each level and organisational unit.

5.3 Key Corporate Performance Indicators

The KPIs considered most reflective of the strategic themes of customer centricity, network expansion, infrastructure modernization, loss reduction and resources alignment are shown in table 5.1 below. These KPIs will be tracked and evaluated against yearly targets to determine the success in achievement of the medium-term objectives.

Table 5.1 Key Performance Indicators for Monitoring and Evaluation

| Strategic Performance Measures | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 |
|--|----------------|----------------|----------------|----------------|----------------|----------------|
| 1. Infrastructure development | | | | | | |
| New HV and MV Power Lines (Kms) | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 |
| Number of New Bulk Supply Points | 2 | 1 | 1 | 1 | 0 | 0 |
| Number of New Primary Substations Completed | 21 | 20 | 20 | 4 | 4 | 4 |
| Number of New Distribution Substations Completed | 0 | 250 | 630 | 120 | 0 | 0 |
| 2. Network Management | | | | | | |
| Air Break Switches Automated (11kv 33kv) | 40% | 50% | 70% | 80% | 100% | 100% |
| RMUs Automated | 35% | 40% | 70% | 80% | 100% | 100% |
| Breakdowns per 1000 Customers/month | 6.39 | 6.09 | 5.89 | 5.69 | 5.49 | 5.29 |
| Avg. Response Time(CAIDI) | 2.82 | 1.8 | 1.5 | 1 | 1 | 1 |
| No of Substations Refurbished | 30 | 14 | 14 | 14 | 14 | 14 |
| 3. Customer Centricity | | | | | | |
| New Generation Capacity Procured (MW) | 42 | 142 | 1,269 | 567 | 556 | 556 |
| Energy Purchase (GWh) | 9,817 | 10,341 | 10,895 | 11,478 | 12,093 | 12,740 |
| Peak Demand (MW) | 1,585 | 1,750 | 1,959 | 2,205 | 2,494 | 2,834 |
| Average Retail Tariff US cts /kWh | 14 | 13 | 13 | 13 | 13 | 13 |
| Average Bulk Supply Cost US cts per kWh | 12.46 | 12.3 | 12.14 | 11.71 | 11.44 | 11.4 |
| New Customers Connected Annually | 1,253,196 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 |

| Strategic Performance Measures | | | | | | |
|----------------------------------|---------|---------------|---------------|---------------|---------------|---------------|
| | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 |
| Customer Satisfaction Index | 78.30% | 67% | 69% | 71% | 73% | 75% |
| 4. Loss Reduction | | | | | | |
| System Efficiency (%) | 80.60% | 81.10% | 81.60% | 82.10% | 82.60% | 83.10% |
| Commercial loss Reported | 4.04% | 4.04% | 4.04% | 4.04% | 4.04% | 4.04% |
| Technical Loss Reported | 15.36% | 14.86% | 14.36% | 13.86% | 13.36% | 12.86% |
| Annual Sales GWh | 7,912 | 8,386 | 8,890 | 9,423 | 9,988 | 10,588 |
| 5. Resource Alignment | | | | | | |
| Productivity Index | 73% | 74% | 75% | 76% | 77% | 78% |
| Sales Per Employee (kWh) | 774 | 839 | 908 | 984 | 1,065 | 1,153 |
| Staff Costs as a % of T&D costs | 54% | 44% | 39% | 30% | 30% | 30% |
| Customer - Staff Ratio | 417 | 497 | 575 | 648 | 719 | 787 |
| Engagement Index | 70% | 72% | 74% | 76% | 78% | 80% |
| Work Environment Index | 80% | 83% | 86% | 89% | 92% | 92% |
| Acquisition of Land and Premises | 45 | 45 | 45 | 45 | 45 | 45 |
| Total Assets | | 109,703 | 116,527 | 123,962 | 132,173 | 138,316 |
| Total Revenue | | 109,536 | 116,661 | 124,247 | 132,324 | 160,362 |
| Profits Before Tax (KShs) | | 13,405 | 13,909 | 14,630 | 15,533 | 15,903 |

ANNEX: STRATEGIC PLAN TARGET CHAIN MATRIX

Strategic Theme 1: Infrastructure Development

| Specific Objective | Activities | Key Performance Indicators | Assumptions | Responsibility | Resources (Ksh. Million) | Target | | | | |
|--|--|---|--|----------------------------|--------------------------|----------|----------|----------|---------|---------|
| | | | | | | 2016/ 17 | 2017/ 18 | 2018/ 19 | 2019/20 | 2020/21 |
| To expand and upgrade the network capacity to absorb the 5000+MW | Construction of new distribution substations totaling 6225MVA with 3,767.83 kms of associated MV power lines | MVA of new Bulk supply substations capacity | Availability of competent construction firms | Infrastructure Development | 18,400 | 360 | 400 | 400 | 0 | 0 |
| | | No of new bulk supply points | | | | 1 | 1 | 0 | 0 | |
| | | No of new Primary substations | Continuous monitoring of contractors | | | 20 | 20 | 4 | 4 | |
| | | No of Distribution substations added (IDA) | | | | 250 | 630 | 120 | 0 | 0 |
| | | New LV lines constructed (Km) | Incl. Electrification Project | | | 3,000 | 8,000 | 1,500 | 1,500 | |
| | Primary Substations under N-1 criterion MV Constructed under N-1 criterion Upgrade of primary substations Effective project implementation management | New MV lines constructed | - | | 2,500 | 2,500 | 2,500 | 2,500 | | |
| | | No of upgraded Primary Substations | Availability of competent construction firms | 20 | 8 | 8 | 2 | 2 | | |
| | | Length of line constructed under N-1 | | Infrastructure Development | 5 | 0 | 0 | 0 | 0 | |
| | | No of New Lines MV Constructed under N-1criterion | | | 180 | 0 | 0 | 0 | 0 | |
| | | No. of Primary substations Upgraded | Availability of competent construction firms | | 17 | 0 | 1 | 4 | 4 | |
| Scada Upgrade % of Completion Rate % of Cost Efficiency | Capacity of Primary substations upgraded (MVA) | | Infrastructure Development | 276 | 0 | 180 | 92 | 92 | | |
| | Scada Upgrade | - | | 0 | 30 | 28 | 5 | 5 | | |
| | % of Completion Rate | Project management system exists | | 100% | 100% | 100% | 100% | 100% | | |
| % of Cost Efficiency | | | 100% | 100% | 100% | 100% | 100% | | | |

| Specific Objective | Activities | Key Performance Indicators | Assumptions | Responsibility | Resources (Ksh. Million) | Target | | | | |
|--|---|--|--|----------------------------|--------------------------|---------|---------|---------|---------|---------|
| | | | | | | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 |
| To reduce technical losses within the system by 0.5% | Installation of Automatic Load Break Switches | No. of Automatic Load Break Switches Installed | Availability of Competent Construction Firms | Infrastructure Development | 2,000 | 400 | 400 | 200 | 0 | 0 |
| | Installation of Reactive Power Compensators | Reactive Power Compensators Installed | | | | 9 | 0 | 0 | 0 | 0 |
| | | Capacity of Reactive Power Compensators Installed (MVAR) | | | | 191.5 | 0 | 0 | 0 | 0 |
| Total Cost of Theme | | | | | 49,480 | | | | | |

Strategic Theme 2: Network Management

| Specific Objective | Activities | Key Performance Indicators | Assumptions | Responsibility | Resources (Ksh. Million) | Target | | | | |
|---|--|---|---|----------------------------------|----------------------------|---------|---------|---------|---------|---------|
| | | | | | | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 |
| To improve Power Supply Quality | Automation to improve transmission and sub transmission substations and feeder management | RMUs Automated | Automate 85 RMU in 5 years | Network Management | 200 | 25 | 20 | 20 | 20 | 20 |
| | | Use of Aerial bundled Conductors in kilometers | Deplete current stock of 125 km in 3 years | Network Management | 100 | 50 | 25 | 0 | 0 | 0 |
| | Automation of equipment at primary substations for faster supply restoration | Air Break Switches Automated | 500 switches to be automated | Network Management | 1,000 | 125 | 125 | 125 | 125 | 125 |
| | | Automation GIS/FDB coverage | - | ICT | 800 | 100% | 0 | 0 | 0 | 0 |
| | | Refurbishment works on distribution substations | No of substations refurbished | - | Infrastructure Development | 8,300 | 14 | 14 | 14 | 14 |
| To improve power supply reliability to over 90% | Provision of alternative supplies to Major customers | % of Major customers with alternative lines | - | | 561 | 100% | 100% | 100% | 100% | 100% |
| | Trace Clearance both on MV and LV Lines | Average Number of low voltage Breakdowns per 1000 customers per month | Each feeder owner will be empowered to use tree cutting day workers throughout the year | Network Management | 3,150 | 7.3 | 7.1 | 6.9 | 6.7 | 6.7 |
| | | Customer Satisfaction index | Survey completed as scheduled. | Customer service | 20 | 75% | 80% | 85% | 90% | 90% |
| | Protecting and securing infrastructure, company premises and assets against vandalism and insecurity | No of theft reported | - | Company Secretary & Corp Affairs | | 29 | 25 | 22 | 19 | 19 |
| | | Level of Transformer Vandalism | Cooperation with the local administration and governments | Company Secretary & Corp Affairs | 5,860 | 171 | 146 | 125 | 107 | 107 |
| | % of success rate in prosecution of vandalism cases | | | Company Secretary & Corp Affairs | | 90% | 90% | 90% | 90% | 90% |

| Specific Objective | Activities | Key Performance Indicators | Assumptions | Responsibility | Resources (Ksh. Million) | Target | | | | |
|----------------------------|--|---|-------------|--------------------|--------------------------|---------|---------|---------|---------|---------|
| | | | | | | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 |
| | Intensifying power system maintenance through Boresha Joint Operations, individual teams and L&T contractors | Average number of low voltage breakdowns per 1000 customers per month | - | Network Management | 10,000 | 7.5 | 7.3 | 7.1 | 6.9 | 6.7 |
| Total Cost of Theme | | | | | 20,000 | | | | | |

Strategic Theme 3: Customer Centricity

| Strategic Objective | Activities | Key Performance Indicators | Assumptions | Responsibility | Resources (Ksh. M) | Target | | | | |
|---|--|---|---|-------------------|--------------------|----------|----------|----------|---------|---------|
| | | | | | | 2016/ 17 | 2017/ 18 | 2018/ 19 | 2019/20 | 2020/21 |
| To avail adequate power to meet growing demands at least cost | Procure power from 44 new power stations between 2015/16 and 2019/20, both least cost and FIT projects, totaling 2,774 MW | Additional Power Procured in MW. | All the 5000MW + projects will be implemented | Business Strategy | 0 | 1,269 | 567 | 556 | ^^ | |
| | | Installed Capacity MW | Generation projects will be commissioned as scheduled | Business Strategy | 0 | 3,901 | 4,468 | 5,024 | ^^ | |
| | % of Thermal energy generation | Political and economic stability of the country | Business Strategy | 0 | 21% | 18% | 16% | 16% | | |
| | Average generation tariff | | Business Strategy | 0 | 12.3 | 12.14 | 11.71 | 11.44 | 11.44 | |
| | Generation capacity mix to change from Hydro 35.7 %, Thermal (MSD) 35.9%, Geothermal 26%, Cogeneration 1.1%, Wind 1.1% and solar 0.03% in 2015, to Hydro 17% , Geothermal 26%, Thermal 16%, Cogeneration 1% , Wind 11%, Solar 1%, Coal 20% and imports 8% in 2021. | Installed Capacity | | Business Strategy | 0 | | | | | |

| Strategic Objective | Activities | Key Performance Indicators | Assumptions | Responsibility | Resources (Ksh. M) | Target | | | | |
|--|---|--|---|----------------------------|--------------------|----------|----------|----------|---------|---------|
| | | | | | | 2016/ 17 | 2017/ 18 | 2018/ 19 | 2019/20 | 2020/21 |
| To accelerate customer connectivity by connecting five million new customers by 2020 | Implement last Mile project | No. of new households connected | Sustained government subsidy on electricity connection costs | Customer Service | 13,500 | 188,520 | 62,840 | 0 | 0 | 0 |
| | Implement pre-investment schemes to fast-track connectivity | New customers connected under the schemes | | Customer Service | 9,670 | 15,000 | 30,000 | 50,000 | 50,000 | 50,000 |
| | Rollout of the 3 step new connection process to reduce connectivity timelines | Connection timelines for business customers | Availability of all necessary materials | Customer Service | 10 | 30 | 30 | 30 | 30 | 30 |
| | | Connection timelines for ordinary customers | For customer connection | Customer Service | 50 | 43 | 43 | 35 | 30 | 30 |
| | Automatic generation of quotations facilitated by FDB system | % GIS coverage | All offices are linked and connected to the FDB system | ICT | 800 | 52% | 100% | 100% | 100% | 100% |
| | Line maximization | No. of lines identified for maximization | 5 Major Refurbishment projects/County/ per annum @ KShs 100M/ county (235 no of projects/Year | Network Management | 0 | 235 | 235 | 235 | 235 | 235 |
| | Group Schemes Slum Electrification (GPOBA) | No. of groups schemes implemented/ connected | Availability of group schemes | Infrastructure Development | 3,500 | 72 | 65 | 70 | 68 | 60 |
| | Establishments of Off-grid Mini grids | No of mini grids established | Availability of potential sites | Business Strategy | 2,000 | 800 | 800 | 800 | 800 | 800 |

| Strategic Objective | Activities | Key Performance Indicators | Assumptions | Responsibility | Resources (Ksh. M) | Target | | | | |
|---|--|-----------------------------------|---|------------------|--------------------|----------|----------|-----------|-----------|-----------|
| | | | | | | 2016/ 17 | 2017/ 18 | 2018/ 19 | 2019/20 | 2020/21 |
| To improve electricity supply quality to exceed customer expectations, reduce cost of doing business and increase sales revenue | Increased focus towards 100% revenue collection | Days for receivables | Adoption of latest technology in revenue collection and billing | Customer Service | 200 | 35 | 35 | 30 | 30 | 30 |
| | | % collection of billing | | | | 100% | 100% | 100% | 100% | 100% |
| | | % of customers on E-billing | | | | 100% | 100% | 100% | 100% | 100% |
| | | % of meter reading coverage | | | | 80% | 80% | 90% | 95% | 95% |
| Acquire a Debt Collection Management Module | Debt collection System in place | Resulting from the ICS Upgrade | ICT | 1,030 | 50% | 100% | 100% | 100% | 100% | 100% |
| | Partnerships with financial institutions to offer financing to potential customers | No. of institution in partnership | Agreements signed with financial institutions for customer electricity connection | Finance | 20 | 6 | 7 | 8 | 9 | 9 |
| Allow for new connection payments to be made through the bills and to be disconnectable in case of non-payment | Efficient Loan Management System in Place | | Finance | 100 | 20% | 100% | 100% | 100% | 100% | 100% |
| | Prepaid Meters | - | | 6 | 782,000 | 500,000 | 400,000 | | | |
| | Smart Meters | - | | 15 | 8,000 | 500,000 | 600,000 | 1,000,000 | 1,000,000 | 1,000,000 |

| Strategic Objective | Activities | Key Performance Indicators | Assumptions | Responsibility | Resources (Ksh. M) | Target | | | | |
|---|--|---------------------------------------|---|---------------------------------------|--------------------|------------------|-----------|-----------|-----------|-----------|
| | | | | | | 2016/ 17 | 2017/ 18 | 2018/ 19 | 2019/20 | 2020/21 |
| To facilitate electricity demand growth of 8% annually. | Accelerate new connections so customer base towards universal access by 2020 | Electricity connectivity access level | Availability of all necessary materials | Customer Service | 50 | 59% | 70% | 78% | 84% | 90% |
| | | Domestic Customers | For customer connection | | | 4,406,682 | 5,384,112 | 6,361,542 | 7,338,972 | 8,117,758 |
| | | Small Commercial | | | | 199,244 | 221,244 | 243,244 | 265,244 | 287,244 |
| | | Large Power | | | | 10 | 6,548 | 7,118 | 7,688 | 8,258 |
| Support to GOK efforts to attract many new large scale investments, which together with normal growth from existing and new ordinary customers should contribute over 2,000MW in new demand | Additional new demand (MW) | Sales growth (Gwh) | Joint efforts with other ministries and authorities to encourage investment | Business Strategy Customer Service | 200 | 100 | 20 | 70 | 200 | 10 |
| | | | Sustained economic growth | | | Customer Service | 400 | 8,000 | 8,784 | 10,371 |
| Total Cost of Theme | | | | | 31,580 | | | | | |

Strategic Theme 4: Loss Reduction Initiatives

| Specific Objectives | Activities | Key Performance Indicators | Assumptions | Responsibility | Resources (Ksh. Million) | Target | | | | |
|--|---|---|--|----------------------------|----------------------------------|---------|---------|---------|---------|---------|
| | | | | | | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 |
| To reduce power System Technical Loss by 2% over the next five years | Distribution System Reinforcement and Upgrade projects with loss reduction benefits | Level of technical losses | | B/ Strategy | | 11.1% | 10% | 9.2% | 8.9% | 9.1% |
| | | No of primary sub-stations constructed | Projects are implemented and commissioned as per schedule | Infrastructure Development | Covered under Network Expansion | 20 | 20 | 20 | 4 | 4 |
| | | Average number of low voltage Breakdowns per 1000 customers per month | | Network Management | Covered under Network Management | 7.5 | 7.3 | 7.1 | 6.9 | 6.7 |
| | | No of feeders commissioned with Reactive Power Compensation installed | The projects are part of the MV and LV extensions targeted for construction. | Business Strategy | | 1,285 | 50 | 50 | 0 | 0 |
| | | Length of MV Lines constructed (Kms) | | Infrastructure Development | | 0 | 295 | 630 | 120 | 0 |
| | | Study Reports | | Business Strategy | | 90 | 30 | 30 | 30 | 30 |

| Specific Objectives | Activities | Key Performance Indicators | Assumptions | Responsibility | Resources (Ksh. Million) | Target | | | | | |
|--|---|--|--|---|-----------------------------------|----------------|---------|---------|---------|----------|--------|
| | | | | | | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/12 | |
| To reduce power System Commercial Loss by 7.5% over the next five years. | Regular global sweeps and inspections of meter installations | % Levels of Commercial losses Reported | - | Customer Service | 500 | 6.8% | 5.3% | 3.8% | 2.3 % | 0.8% | |
| | GPOBA programme for providing power to peoples settlement on going | No of schemes | Increased connection reduces incidences of electricity theft | Infrastructure Development | Covered under Customer Centricity | 72 | 65 | 70 | 68 | 60 | |
| | Roll out smart metering for domestic and small commercial customers consuming above 500 kWh per month | New connections | Reduce commercial losses | Customer Service | 18,200 | 0 | 500 | 600 | 700 | 800 | |
| | Roll out Pre-paid Meter Systems to majority of domestic and small commercial customers | No. to be Retrofitted | - | - | Customer Service | 370 | 12,500 | 20,000 | 20,000 | 0 | 0 |
| | | Prepaid installed (New) | Availability of the meters | - | Customer Service | 6,000 | 750,000 | 500,000 | 400,000 | 0 | 0 |
| | | Retrofitting | - | - | Customer Service | 59,500 | 2,000 | 5,000 | 10,000 | 0 | 0 |
| | Acquire meter data control Centre | Smart Meters installed(new) | - | - | Business Strategy | 15,000 | 8000 | 500,000 | 600,000 | 1000,000 | 0 |
| | | Retrofitting | - | - | Business Strategy | 0 | 8,000 | 5,000 | 10,000 | 20,000 | 20,000 |
| | Acquire & implement energy balance module | Reduce commercial losses | - | Availability of the required system in the market | Business Strategy | 100 | 0 | 100% | 0 | 0 | 0 |
| | Total Cost of Theme | | | | | 111,345 | | | | | |

Strategic Theme 5: Resource Alignment

| Specific Objective | Activities | Key Performance Indicators | Assumptions | Responsibility | Resources (Ksh. Million) | Target | | | | |
|--------------------------------|--|--|---|----------------------------------|--------------------------|---------|---------|---------|---------|---------|
| | | | | | | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 |
| Talent Management; | Implementing needs based training programmes | 5 training days per employee | Availability of employees with the required expertise or skills | Human Resources & Administration | 738 | 3 | 3 | 4 | 5 | 5 |
| | Implementing leadership development programs | Leadership training days per employee | | | 239.2 | 3 | 3 | 4 | 5 | 5 |
| | Undertaking competency mapping; Identification of critical roles and critical talent | Completion of Exercise | Sales growth projects are attained | | 39 | 100% | 100% | 100% | 100% | 100% |
| | Implementing succession planning | No. of candidate successors per position | | | 6 | 2 | 3 | 3 | 3 | 3 |
| | Improving employee productivity | Productivity Index | | | 13.4 | 74% | 75% | 76% | 77% | 78% |
| | | Sales per employee | | | 0 | 839 | 908 | 984 | 1,065 | 1,146 |
| Leadership Development | Managing staff costs | Staff Costs as a % of T&D costs | - | Human Resources & Administration | 0 | 44% | 39% | 30% | 30% | 30% |
| | Controlling staff numbers growth | Customer: Staff ratio | Availability and Adoption of new technologies | | 0 | 497 | 575 | 648 | 719 | 800 |
| Enhancing Staff Welfare | Improving employee engagement | Engagement Index | - | Human Resources & Administration | 13.6 | 72% | 74% | 76% | 78% | 80% |

| Specific Objective | Activities | Key Performance Indicators | Assumptions | Responsibility | Resources (Ksh. Million) | Target | | | | |
|---|--------------------------|--------------------------------------|-----------------------------|----------------------------------|--------------------------|---------|---------|---------|---------|---------|
| | | | | | | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 |
| Organizational culture realignment to strategy and structural changes | Cultural change programs | Improved customer satisfaction Index | Staff willingness to change | Human Resources & Administration | 100 | 80% | 85% | 85% | 85% | 85% |

| Specific Objective | Activities | Key Performance Indicators | Assumptions | Responsibility | Resources (Ksh. Million) | Target | | | | | | | | |
|-----------------------------------|--|---|---|----------------------------------|----------------------------------|--------------|---------|---------|---------|---------|------|--|--|--|
| | | | | | | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | | | | |
| Provide suitable work environment | Premises and office support services Management of leases Statutory compliance | Work environment index | Stable political and social environment | Human Resources & Administration | 1,000 | 83% | 86% | 89% | 92% | 92% | | | | |
| | | | | | 1,000 | | | | | | | | | |
| | | | | | 95 | | | | | | | | | |
| | Asset management | Replacement, rationalization and disposal of obsolete furniture and equipment | | | | | | | | | | | | |
| | Construction of offices, depots and stores in partnership with RBS | Completion of projects | | | | 1 | 1 | 1 | 1 | 1 | | | | |
| | Expansion and refurbishment of existing facilities | Works to E-plants, depots, stores and e-houses | | | | 2 | 2 | 2 | 2 | 2 | | | | |
| | Maintenance, renovation, rehabilitation and redecoration of existing facilities | Preventive maintenance, small and major R&M works identified in the master plan | - | | Human Resources & Administration | 400 | 40% | 60% | 80% | 100% | 100% | | | |
| | Securing of existing facilities | Boundary walls and security works and installations | - | | Human Resources & Administration | 500 | 3 | 4 | 4 | 4 | 4 | | | |
| | Total Cost of Theme | | | | | 7,200 | | | | | | | | |





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