

PARLIAMENT
OF KENYA
LIBRARY



THE NATIONAL ASSEMBLY
PAPERS LAID

DATE: 14 MAR 2023

DAY:
TUESDAY

TABLED BY: DEPUTY LEADER OF MAJORITY PARTY
THE TABLE: IMZEVU MWA LI

PERFORMANCE AUDIT REPORT ON

IMPLEMENTATION OF THE LAST MILE CONNECTIVITY PROJECT

BY

THE MINISTRY OF ENERGY AND PETROLEUM

AND

THE KENYA POWER AND LIGHTING COMPANY



THE NATIONAL ASSEMBLY

DATE: 14 MAR 2023

DAY:
TUESDAY

TABLED BY: DEPUTY MAJ

MARCH 2023

CLERK AT THE TABLE:

VISION

Making a difference in the lives and livelihoods of the Kenyan People

MISSION

Audit services that impact on effective and sustainable service delivery

CORE VALUES

Independence

Credibility

Relevance

Accountability

Integrity

MOTTO

Enhancing Accountability

FOREWORD BY THE AUDITOR- GENERAL

I am pleased to present this Performance Audit Report on the Implementation of the Last Mile Connectivity Project by the Kenya Power and Lighting Company and the Ministry of Energy and Petroleum. My Office carried out the audit under the mandate conferred on me by Section 36 of the Public Audit Act, 2015. The Act mandates the Auditor - General to examine the economy, efficiency and effectiveness with which public money has been expended pursuant to Article 229 (6) of the Constitution of Kenya, 2010.

Performance, financial and compliance audits form the three-pillars of the audit assurance framework that I have established to give focus to the varied and wide scope of the audit work done by my Office. The framework is intended to provide a high level of assurance to stakeholders that public resources are not only correctly disbursed, recorded and accounted for, but their use results in positive impacts on the lives and livelihoods of the citizens. The main goal of our performance audits is to ensure effective use of public resources and promote service delivery to the citizens.

Our performance audits examine compliance with policies, obligations, laws, regulations, standards, and also whether the resources are managed in a sustainable manner. They also examine the economy, efficiency and effectiveness with which public resources have been expended. I am hopeful that corrective action will be taken in line with our recommendations in the report.

The report is submitted to Parliament in accordance with Article 229 (7) of the Constitution of Kenya, 2010 and Section 39 (1) of the Public Audit Act, 2015. I have also submitted copies of the report to the Chief Executive Officer, Kenya Power and Lighting Company, Principal Secretary, State Department for Energy, Principal Secretary, The National Treasury, and the Chief of Staff and Head of Public Service.



CPA Nancy Gathungu, CBS

AUDITOR-GENERAL

06 March, 2023

TABLE OF CONTENTS

FOREWORD BY THE AUDITOR- GENERAL	i
TABLE OF CONTENTS	iii
LIST OF ABBREVIATIONS	v
DEFINITION OF TERMS	vi
EXECUTIVE SUMMARY	vii
CHAPTER 1: BACKGROUND OF THE AUDIT	1
Introduction.....	1
Motivation for the Audit.....	2
CHAPTER 2: DESIGN OF THE AUDIT	4
Audit Objective.....	4
Audit Scope	4
Methods Used to Gather Audit Evidence	4
Sampling	5
Assessment Criteria	6
CHAPTER 3: DESCRIPTION OF THE AUDIT AREA	7
Background Information	7
Statutory Mandate of the Ministry of Energy and Petroleum and the Kenya Power and Lighting Company	8
The Last Mile Connectivity Project Implementation Framework.....	9
Process Description for the Last Mile Connectivity Project Implementation	11
Funding and Project Cost.....	18
CHAPTER 4: FINDINGS OF THE AUDIT.....	20
A. Delays in Project Implementation	21
B. Inadequate Project Awareness to the Beneficiaries	33
C. Inadequate Monitoring and Evaluation of the Project by the Ministry of Energy and Petroleum	34
D. Unreliable Power Supply	35
E. Other Findings.....	37
CHAPTER 5: CONCLUSIONS	39
CHAPTER 6: RECOMMENDATIONS	40
APPENDICES.....	43
Appendix 1: Documents Reviewed.....	43
Appendix 2: Interviews Conducted	45
Appendix 3 : Sampled Schemes	46
Appendix 4: Detailed Audit Criteria.....	48
Appendix 5: Project Contractors and Consultants	50
Appendix 6: Project Phases and Expected Outputs	51
Appendix 7: Detailed Completion Status Per Contractor.....	52
Appendix 9: Sample of Schemes Where Request for Power Switch off to Enable New Line Activation was Delayed	58
Appendix 10: Response to Audit Findings and Recommendations by the Kenya Power and Lighting Company	59

LIST OF TABLES

Table 1: Project Targets Before and After Design	14
Table 2: Project Completion Dates	18
Table 3: Analysis of Budget and Expenditure for the Last Mile Connectivity Project ...	19
Table 4: Annual Customer Connections	20
Table 5: Project Completion Status as at 30 April, 2022	22
Table 6: Delays in Completion of Projects by Contractors	24
Table 7: Time Taken at Various Stages of Processing Tax Exemption	25
Table 8: Sample of Invoices that Took More than 60 Days to be Paid	27
Table 9: Duration Taken to Connect Beneficiaries After Allocation of Unique Reference Numbers	29
Table 10: Amount Spent on Electricity Tokens Monthly by Households Sampled	37

LIST OF FIGURES

Figure 1: The Last Mile Connectivity Project Implementation Structure	10
Figure 2: Last Mile Connectivity Project Phases I, Phase II and Phase III	11
Figure 3: Last Mile Connectivity Project Process Description	12
Figure 4: The Last Mile Connectivity Project Metering Process	16
Figure 5: Benefits Derived from the Implementation of the Project	21
Figure 6: Project Completion Status in the Sampled Counties	23
Figure 7: Analysis of Customers' Responses on Awareness Creation	34

LIST OF ABBREVIATIONS

AfDB	African Development Bank
EPRA	Energy and Petroleum Regulatory Authority
FDB	Facility Database
GoK	Government of Kenya
HH	Household
ICT	Information Communication Technology
ID	Identification Document
IDA	International Development Association
InCMS	Integrated Customer Management System
JMC	Joint Measurement Certificate
KPLC	Kenya Power and Lighting Company
KRA PIN	Kenya Revenue Authority Personal Identification Number
LMCP	Last Mile Connectivity Project
LV	Low Voltage
M&E	Monitoring and Evaluation
MoEP	Ministry of Energy and Petroleum
MV	Medium Voltage
NT	National Treasury
PIT	Project Implementation Team
PIU	Project Implementation Unit
PME	Protective Multiple Earthlings
PPDA	Public Procurement and Assets Disposal Act
TX	Transformer

DEFINITION OF TERMS

Contracting: This is where the consumer enters into a contract with KPLC for power supply.

Demurrage Charges: Additional cost incurred due to non-collection of imported goods from the port or rail yard within the specified time.

Distribution Network: It comprises of the distribution lines, transformers and end user (beneficiaries).

Energization: It is movement of any switch or insertion of any fuse to enable an electric current to flow through an electricity transmission and distribution network.

Global Exemption: It is an exemption applied by KPLC for purchase of project materials based on the Bill of Quantity.

Household: A housing unit, for instance, a house, an apartment, a group of rooms, or a single room.

Insertion: It is the input of the beneficiary's details into the system.

Lot: It is the division of a project into various contracts.

Meter Validation: This is the pairing of a meter and the customer interface unit to ensure that there is communication between them.

Pole Dressing: Placement of fittings on a pole.

Rehabilitation of Lines: Installation of new lines to replace the existing ones which are congested or obsolete.

Shutdown: Cutting off power supply to transmission lines.

Specific Exemption: It is an exemption for the purchase of specific materials. This is applied by a contractor, through KPLC, to the Ministry of Energy and Petroleum where it is forwarded to The National Treasury.

Stringing: The process of installing overhead transmission or distribution line conductors in a manner which keeps them off the ground, clear from traffic and other structures that might damage them.

Vending: Purchase of electricity tokens by beneficiaries using pre-paid meters.

Wayleave: A right of way granted by a landowner, typically for purposes such as laying of utility infrastructure, roads and housing projects among others.

EXECUTIVE SUMMARY

Introduction

1. The Last Mile Connectivity Project (LMCP) was one of the National Government's initiatives aimed at increasing access to electricity. The objective of the Project was to accelerate electricity connection through expansion of power distribution networks and connecting beneficiaries in low income groups, rural and peri-urban areas, as well as small businesses.
2. The project had targeted to connect 1,145,957 beneficiaries to the national grid. This was to be done in 4 phases, with Phase I, Phase II, Phase III and Phase IV targeting to connect 314,200, 312,500, 314,937 and 181,320 beneficiaries, respectively. The expected commencement dates for Phases I, II, III and IV were December 2014, September 2015, October 2016 and June 2018, respectively. The expected completion dates for Phases I, II, III and IV were February 2019, December 2019, March 2020 and March 2022, respectively. However, as at the time of audit in April 2022, Phase IV had not commenced, due to a pending court case, where the Kenya Power and Lighting Company (KPLC) was sued by local bidders citing high values of contracts that they alleged favored foreign companies.
3. The Project was funded through loans by Development Partners and counterpart funding from the Government. Phase I, Phase II and Phase III of the Project were expected to cost approximately Ksh. 63 billion, out of which Ksh.47 billion was from loans provided by the World Bank (WB) and the African Development Bank (AfDB) and Ksh.16 billion was to be counterpart funding from the Government of Kenya.
4. The Kenya Power and Lighting Company was the implementing agency while the then Ministry of Energy and Petroleum (MoEP) was the executing agency.

Motivation for the Audit

5. The following factors informed the performance audit on the implementation of the Last Mile Connectivity Project: -

- a. The Project is one of the flagship projects designed to support Kenya's industrialization agenda as spelt out in the National Development Plan (NDP). The Project was aimed at opening up different parts of the country to new economic activities. Phases I, II and III of the project were expected to cost approximately Ksh. 63 billion. The audit was therefore, necessary to assess whether the funds were expended in a manner that resulted in achievement of the intended objectives of the Project.
- b. The project was also expected to lead to the attainment of Sustainable Development Goal (SDG) 7 of ensuring access to affordable, reliable, sustainable and clean energy for all. Realization of SDG 7 is critical to attainment of SDG 9 on industry, innovation and infrastructure and SDG 4 on quality education, among others. It was therefore, necessary to ascertain whether implementation of the project contributed towards achievement of SDG 7.
- c. Further, there were media reports, as well as discussions in the Senate indicating that the project was behind schedule. The audit was necessary to assess the extent of implementation of the Project.

Audit Objective

6. The objective of the audit was to assess the extent of implementation of the Last Mile Connectivity Project by the Kenya Power and Lighting Company. The specific objectives were:
 - i. To assess the completion of the distribution networks and installation of meters;
 - ii. To assess whether the implementation of Phase I, Phase II and Phase III of the Project were carried out in an efficient manner; and
 - iii. To assess the reliability of electricity supply to the beneficiaries of the Project.

Summary of Key Audit Findings

7. Phases I, II and III of the Last Mile Connectivity Project were initially targeted to connect 941,637 customers. After the design phase, the target was revised

downwards to 766,173 customers. The revision was as result of some of the targeted beneficiaries having been connected to electricity before the design phase was finalised. Review and analysis of KPLC progress reports established that a total of 683,762 beneficiaries equivalent to 89% of the 766,173 initially targeted beneficiaries had been connected to electricity through the project as at 30 April, 2022. Audit verification and interviews revealed that the project had achieved benefits ranging from creations of jobs, increase in small business enterprises, extended hours of study for school children and enhanced security, among others.

8. However, despite the positive impacts highlighted above, the implementation of the Project experienced shortcomings as indicated below: -

A. Delays in Project Implementation

9. The Project appraisal documents stated that contractors were to execute the contracted works within a period of 18 months. In addition, Phase I, Phase II and Phase III of the Project were to be commissioned in February 2019, December 2019 and March 2020, respectively. However, none of the contracts were executed within the eighteen (18) months and none of the phases had been completed and closed as at the time of audit in April 2022. Review of documents and interviews with key personnel revealed that two (2) out of ten (10) contracts under Phase I were yet to be closed, while five (5) out of six (6) and three (3) out of fifteen (15) contracts under Phase II and Phase III respectively, were still ongoing.
10. Additionally, while the Project progress report dated April 2022 indicated a completion status above 69% for all the phases, an analysis of the project completion status in the sampled counties revealed instances where the completion status was below 69%. For instance, Phase II projects in Homabay and Kakamega Counties were at 48% and 49%, respectively as at the time of audit.
11. The delay in completion of the Project resulted in contractors applying for contract extensions up to five (5) times in some cases. The extension of

contracts in turn led to extension of the consultants' contracts, since they were to run for six (6) months' post project completion.

12. The Project extensions resulted in additional costs in the form of office space, rent for storage of materials and transportation costs, consequently increasing the cost of the affected contracts. This will at the end inflate the project costs since additional costs will be claimed from project funds at the completion of the project.

13. The delayed completion of the Project was attributed to: -

i. Delays in Processing Tax Exemption Approvals and Import Clearance

14. The Project contractors were allowed to purchase materials both locally and internationally. Upon arrival of the internationally procured materials, the contractors were required to apply for global and specific tax exemption within 21 days, through KPLC. According to the project consultants, the agreed timeline for issuance of tax exemption was 30 days. However, document review and interviews with project contractors and consultants revealed that this was not executed as expected. There were instances of delays of up to 10 months in acquiring specific and global tax exemptions for imported materials. This could have been occasioned by delays in processing tax exemptions at the various stage of approval at KPLC, the Ministry of Energy and Petroleum and the Kenya Ports Authority.

15. The delays in tax exemptions may have led to delays in delivery of materials which subsequently led to delays in completion of the Project within the contract period. Additionally, these delays resulted in contractors incurring demurrage charges¹, which increased the project cost. For instance, the contractor implementing Lot 14 of Phase III incurred demurrage charges amounting to Ksh. 8,740,077 due to delays in obtaining specific exemptions related to the shipment of wooden poles, which took 61 days to be cleared.

¹Additional cost incurred due to non-collection of imported goods from the port or rail yard within the specified time.

ii. Delays in Processing Contractors Invoices and Payments

16. According to the project contracts payment was supposed to be made within 60 days after receipt of an invoice. However, interviews and documentary reviews revealed that there were delays in processing payments to contractors, with some payments taking more than 60 days.
17. Delayed payments were occasioned by a lengthy approval process, as invoices had to be submitted to KPLC, the Ministry of Energy and Petroleum and the National Treasury, before funds were released to KPLC for payment. The delays were also partly attributed to the requirement that the threshold for invoice processing be pegged at USD 200,000. Therefore, the number of invoices processed at any one time were many, considering the large value of each contract.
18. The delays in payment to contractors affected contractors cash flow and ultimately resulted in slow progress of works. Consequently, contractors applied for project extensions to recover the lost time.

iii. Delay in Issuance of Letters of Credit for Importation of Materials

19. Interviews with project contractors revealed that there were delays in issuance of Letters of Credit (LCs) to Phase II contractors. After revision of the initial commencement date from September, 2015, Phase II of LMCP was to start in 2018, however, in 2018, KPLC did not issue letters of credit to allow contractors to import materials due to funding challenges. Delays in issuance of LCs did not only affect the project implementation timelines but also the project implementation costs.

iv. Delays due to Wayleave Disputes

20. Interviews with contractors, consultants and KPLC staff revealed that there were wayleave disputes which delayed the project implementation in the sampled counties. For instance, in Nguu Tatu Scheme, a Phase III site in Mombasa County, the land owner had gone to court to stop the installation of poles and lines passing through his land. The contractor, therefore, could only connect beneficiaries on one side of the transformer that was not under dispute. As at

the time of the audit, the issue was still in court. Further, the contractor had not recovered the poles and conductors installed on the land.

21. In addition, in Ruai Scheme, a Phase II site in Nairobi County, the contractor had laid the network and installed three transformers, ready to connect 265 beneficiaries. However, the site had ownership disputes with allegations of land grabbing. As at the time of the audit, the targeted beneficiaries had been forced out of the land after the site was demolished. The wayleave disputes could have been avoided if KPLC had verified ownership and sought the owners' consent prior to installation of infrastructure.

v. Delay due to Termination of Contract

22. A contractor, AEE Power South Africa, who had two contracts in Phase I and was to connect a total of 62,892 beneficiaries was issued with a notice of default and termination of the contract, leading to stoppage of works. The termination of the contract was due to underperformance by the contractor on the terms of engagement. The contractor sued KPLC on 28 May, 2019 and as at the time of audit, the contract period had expired, while the court case was yet to be determined.

vi. Delays in the Metering Process

23. According to KPLC's Service Charter, it should take the company approximately three (3) days to connect paid up customers requiring a meter connection. For customers requiring low voltage extension in addition to the meter connection, it should take seventeen (17) days. Finally, for customers requiring medium voltage extension, transformer installation, and meter connection, the process should take forty-five (45) days cumulatively. The LMCP however, did not have defined timelines for meter connection.
24. Document reviews and analysis of the customer meter installation timelines for the sampled schemes revealed that the metering process took between 74 and 509 days. The duration was calculated from the time the customer was allocated a unique reference number, to the first-time they purchased tokens.

25. Delay in the metering process was caused by various factors, including slow collection and submission of customer documents, shortage of meters, loss of beneficiaries' documents, management information system downtime and delay in commissioning of transformers.

B. Inadequate Project Awareness to the Beneficiaries

26. According to the project appraisal documents, KPLC was to conduct public Barazas to sensitize beneficiaries on the project and explain what was expected of them. In addition, KPLC's Communications Department was to develop a communications campaign to update the public on the progress of the Project. Further, good practice requires that public awareness be conducted before, during and post project implementation.
27. Interviews with business development teams revealed that KPLC conducted unstructured sensitization in the sampled counties. Out of the 606 beneficiaries interviewed, only 92 confirmed that awareness Barazas were conducted in their schemes.
28. The low level of awareness creation was attributed to the fact that not all the schemes were sampled for the sensitization exercise due to shortage of KPLC staff, inadequate planning and ineffective channels of communication. As a result of lack of awareness, some of the beneficiaries did not have information on how to report power outage incidences and hence stayed without power when outages occurred.

C. Inadequate Monitoring and Evaluation of the Project by the Ministry of Energy and Petroleum

29. According to the project appraisal documents, MoEP was responsible for the overall monitoring and review of the project progress and for addressing issues that may have hindered timely implementation of the project. The Ministry was also responsible for the overall coordination and oversight of the project, including consolidating information from the implementing agencies. Further, the project appraisal documents specify that site visits were to be conducted to follow up the implementation of project activities. In addition, MoEP was to hire

a project coordinator to conduct quarterly monitoring and to consolidate the information prepared by the implementing agencies and report to the Principal Secretary, MoEP.

30. Interviews with MoEP staff and document review revealed that monitoring was done as per the Ministry's performance contract targets, where monitoring of all electricity transmission and distribution projects, including LMCP, was jointly conducted twice a year. This was carried out by randomly sampling the projects which deemed inadequate as not all project phases were assessed. Further, at any one point, projects were at a different status of implementation and faced project specific challenges that needed to be addressed in a timely manner.
31. Inadequate monitoring was attributed to insufficient staff to monitor the Project. The Directorate tasked with monitoring of the Project was organized into six (6) teams of three (3) members each. As at the time of the audit, there were fifty (50) electricity generation, transmission and distribution projects in the Country, which the team could not monitor adequately due to staff shortage.

D. Unreliable Power Supply

32. The overall objective of the National Energy Policy, 2018 is to ensure sustainable, adequate, affordable, competitive, secure and reliable supply of energy geared towards meeting the development needs of the Country. It was in line with this objective that the project appraisal documents emphasized that a higher level of electricity service reliability and quality were necessary for stronger economic growth and increased competitiveness. Interviews with LMCP beneficiaries in the sampled counties revealed that they experienced unreliable power supply. Power reliability issues experienced by the beneficiaries included;

i. Faulty Meters

33. The contract for the supply of installation materials included provisions for inspection and factory acceptance testing to ascertain that the materials met KPLC specifications and standards. Although KPLC conducted inspection and testing of the supplied goods, field verification revealed that series 544 and 374 of the pre-paid meters had faulty meters. Review of correspondences between

KPLC and the supplier of pre-paid meters revealed that 21,539, representing 7% of the 312,500 meters became faulty either during installation or after brief usage by the beneficiaries. In addition, interviews with beneficiaries revealed that 90 out of the 606 beneficiaries interviewed had faulty meters and accessories.

34. The faulty meters may have been as a result of supply of low-quality meters and faulty installation, leading to damages during power surges. Meter failures resulted in beneficiaries staying without power until a replacement was provided.

ii. Frequent Blackouts and Transformer Breakdowns

35. Interviews with beneficiaries revealed that out of the 606 sampled beneficiaries, 453 had experienced power supply interruptions averaging 5 times a month. The beneficiaries also indicated that it took 48 hours on average before power was restored. Further, 219 out of 453 beneficiaries stated that they had experienced dimming of lights and inability to power electrical appliances, while 27 reported cases of damaged equipment during power surges.
36. Beneficiaries also reported transformer failure that averaged once per year and took an average of twenty-one (21) days to be repaired or replaced. For instance, a transformer in a Phase I scheme in Kiambu County took an average of four (4) months to be repaired, while a Phase III scheme in Makueni County took about eleven (11) months to be replaced.
37. The frequent black outs and transformer breakdowns were caused by various factors including; transformer components failure, supply shortfalls like under or over voltage, bad weather and regular service interruptions for maintenance and repair work. Additionally, it could have been caused by overload due to an increase in number of beneficiaries connected to the transformers, as well as inadequate maintenance of distribution networks.

E. Other Findings

i. Unrealistic Loan Recovery Period

38. The Last Mile Connectivity Project beneficiaries who opted to pay electricity connectivity fee through Stima Loan were to repay the loan as part of prepaid

tokens. For every purchase, 50% of the amount was to go towards electricity units and the rest towards repaying the loan. The beneficiaries were to repay the Stima Loan over a 3-year period. This translated to a minimum deduction of Ksh. 416 per month, therefore, for beneficiaries to be deducted this amount, they had to make a minimum electricity purchase of Ksh. 832. The monthly deduction is made until the loan is fully paid. The connection fee under LMCP was intended to create a revolving fund that was to be used to connect more beneficiaries. As at 30 April, 2022, only Ksh.1 billion against a target of Ksh.11 billion had been collected from the project beneficiaries.

39. Data obtained through interviews with beneficiaries sampled revealed that out of the 596 beneficiaries who paid connection fee through Stima Loan, only 11% bought electricity tokens above the expected remittance amount of Ksh. 416 per month. This could be attributed to beneficiaries' low socio-economic status, thereby negatively affecting their purchasing power.

ii. Installation of Service Cables to Non-Existent Households

40. Physical verification revealed instances where KPLC had installed service cables and meters on parcels of land where owners were yet to construct houses. The audit established that KPLC erected temporary boards on the parcels of land and mounted electricity meters on the boards. The mounted meters were lying idle and were exposed to vandalism. Further, KPLC could not recover the connection fee because there was no power consumption.

iii. Stolen and Fraudulent Use of Meters

41. The audit established that there were several incidences of stolen meters. Such incidences were noted in Mariri Primary School Scheme in Homabay County where 11 meters were reported to have been taken from beneficiaries by persons purporting to be KPLC staff, alleging that the beneficiaries were not purchasing electricity tokens. Upon verification through the KPLC power app, it

was established that the meters were in use elsewhere, still bearing the names of the project beneficiaries.

Conclusion

42. The Last Mile Connectivity Project has played a critical role in the distribution and expansion of electricity access to Kenyans. The electricity access rate increased from 32% in 2014 to 76% in May 2021. The Project increased connectivity especially in rural and urban informal settlements, where access and affordability had been a major challenge previously. The project has had numerous benefits including; creation of employment opportunities during the implementation stage of the project, unlocking business potential, enabling students to study for extended hours from the comfort of their homes, increased access to information, as well as improved security.
43. Despite the Project's successes, it did not achieve fully the objective of connecting the targeted 766,173 beneficiaries within the stipulated timelines. As at the time of the audit in April 2022, a total of 683,762 beneficiaries had been connected to electricity, representing 89% of the targeted beneficiaries.
44. Failure to achieve the targeted connectivity within the stipulated timeline was mainly attributed to delayed implementation of the Project, which resulted in contractors severally requesting for project extensions. This was attributed to: delay in processing tax exemption approvals and import clearance; delay in processing invoices and payment to contractors; court cases, delay in issuance of letters of credit to import materials and wayleave acquisition challenges, among other issues. The Project also experienced delays in meter processing, installation and validation due to slow collection and submission of mandatory documents required for creation of customer records. The slow collection of

documents was attributed to inadequate awareness creation to the beneficiaries of the Project.

45. The audit also established that some beneficiaries experienced unreliable power supply caused by faulty meters and accessories and transformer breakdowns.

Recommendations

46. In view of the findings and conclusions of the audit, the following are recommendations for implementation by the Kenya Power and Lighting Company and the Ministry of Energy and Petroleum. To ensure the successful implementation of the remaining phases of the Last Mile Connectivity Project and similar projects in future: -
 - i. The Ministry of Energy and Petroleum, KPLC and other stakeholders such as The National Treasury and the Kenya Revenue Authority should coordinate to streamline the tax exemption process in order to minimize delays in delivery of materials;
 - ii. The Kenya Power and Lighting Company should ensure adequate planning and effective implementation of the public sensitization process. This will ensure that project beneficiaries are properly sensitized on their roles for successful implementation of the project;
 - iii. The Ministry of Energy and Petroleum and KPLC should ensure proper planning for wayleaves, as well as streamline its acquisition process to avoid delays in project implementation;
 - iv. The Kenya Power and Lighting Company should ensure that there is appropriate vetting of contractors and suppliers to ascertain their ability to meet contractual requirements;
 - v. The Kenya Power and Lighting Company should ensure that there is proper coordination between the responsible departments to ensure

timely commissioning of transformers and activation of newly constructed lines;

- vi. The Kenya Power and Lighting Company should ensure timely processing and safe custody of beneficiary documents;
- vii. The Kenya Power and Lighting Company should ensure that the management information system is enhanced to guarantee timely metering process;
- viii. The Kenya Power and Lighting Company should ensure that the metering process is streamlined and specifically, customized for unique projects like the Last Mile Connectivity Project in future; and
- ix. The Ministry of Energy and Petroleum and KPLC should ensure regular maintenance of distribution networks to guarantee quality and reliable power.

CHAPTER 1: BACKGROUND OF THE AUDIT

Introduction

- 1.1 Access to modern clean energy is a pre-requisite for economic and social development of a country, since energy is considered as one of the factors that drives economic growth. Without sufficient energy sources, it would be challenging to promote economic growth, overcome poverty, expand employment opportunities and support human development.
- 1.2 In 2010, Kenya was among twenty countries with the highest deficit in electricity access in Africa. The deficit has reduced significantly since 2010, with a marked annual electrification growth rate of 5.2%, especially with the implementation of the Last Mile Connectivity Project (LMCP)². The total number of connected customers as at May 2021 was 8.2 million, representing 76% connection rate, making Kenya a regional leader in electricity access³.
- 1.3 The Last Mile Connectivity Project was aimed at supporting the National Government's initiative of ensuring increased access to electricity in rural and peri-urban areas. These were areas considered to have the lowest penetration of electricity connectivity. The Project had targeted to connect 1,145,957 customers to the national grid in 4 phases.
- 1.4 Phase I, Phase II, Phase III and Phase IV of the Project had targeted to connect 314,200, 312,500, 314,937 and 181,320 beneficiaries respectively. However, as at the time of the audit, Phase IV which was to commence in June 2018 and end in March 2022, had not commenced due to a pending court case. The expected commencement date for Phases I, II and III were December 2014, September 2015 and October 2016, respectively. While the expected completion dates were February 2019, December 2019, and March 2020, respectively. Implementation of LMCP

² Tracking Sustainable Development Goal 7, The Energy Progress Report 2022. This was a collaborative report by 5 agencies among them The World Bank, International Energy Agency and United Nation Statistics Division.

³ EPRA Energy Statistics, 2021

Phases I, II and III were expected to cost approximately Ksh.63 billion, out of which Ksh.47 billion was from loans provided by the World Bank (WB) and the African Development Bank (AfDB) and Ksh.16 billion was to be counterpart funding from the Government of Kenya.

- 1.5 The Last Mile Connectivity Project is under the Ministry of Energy and Petroleum (MoEP) with Kenya Power and Lighting (KPLC) as the implementing agency.

Motivation for the Audit

- 1.6 The audit was motivated by the following factors: -

- i. The Last Mile Connectivity Project was one of the flagship projects designed to support Kenya's industrialization agenda as spelt out in the National Development Plan (NDP). It was expected to open up different parts of the country to new economic activities. It was therefore necessary to assess whether the project achieved its targeted objectives.
- ii. The funding of the Project was through loans from development partners and the Government of Kenya. Phases I, II and III were expected to cost approximately Ksh.63 billion. It was therefore important to assess whether the funds were expended in an economic and efficient manner in order to achieve the intended objectives of the Project.
- iii. Successful implementation of the Project was expected to lead to the attainment of Sustainable Development Goal (SDG) 7 of ensuring access to affordable, reliable, sustainable and clean energy for all. Realization of SDG 7 is critical to attainment of SDG 9 on industry, innovation and infrastructure and SDG 4 on quality education, among others. An audit was therefore necessary to ascertain if the implementation of the Project contributed towards achievement of SDG 7.

- iv. Senate deliberations held on 9 August, 2018 established that the Phase II of LMCP commenced late and that only 22% of the total targeted households had been connected to electricity by then. In addition, there have been several reports in the media highlighting delays in implementation of the Project. An audit was therefore necessary to assess the extent of implementation of the Project.

CHAPTER 2: DESIGN OF THE AUDIT

Audit Objective

2.1 The objective of the audit was to assess the extent of implementation of the Last Mile Connectivity Project by the Kenya Power and Lighting Company. The specific objectives were:

- i. To assess the completion of the distribution networks and installation of meters;
- ii. To assess whether the implementation of Phase I, Phase II and Phase III of the Project were carried out in an efficient manner;
- iii. To assess the reliability of electricity supply to the beneficiaries of the Project.

Audit Scope

2.2 The audit assessed the implementation of Phases I, II and III of LMCP for the financial years 2016/2017 to 2021/2022. The audit focused on construction of distribution networks, the metering process, awareness creation and reliability of power. The audit also assessed loan recovery from project beneficiaries and monitoring and evaluation of the project.

2.3 The audit did not assess the procurement process and project designs. Phase IV was not included in the audit scope as well, because it had not commenced as at the time of the audit.

Methods Used to Gather Audit Evidence

2.4 The audit team conducted the audit in accordance with the International Standards of Supreme Audit Institution (ISSAI) 3000, issued by the International Organization of Supreme Audit Institutions (INTOSAI) and guidelines established by the Office of the Auditor General.

2.5 The methods used to gather audit evidence are as follows: -

Document Review

2.6 To understand the project implementation framework and gather audit evidence, the audit team reviewed various documents. The details of the documents reviewed are as shown in [Appendix 1](#).

Interview

2.7 The audit team conducted interviews with KPLC and the Ministry of Energy and Petroleum staff, project contractors, consultants and beneficiaries. The list of all the people interviewed is shown in [Appendix 2](#).

Physical Verification

2.8 To verify onsite operations and status of connectivity, the audit team visited sampled project sites to assess the project status.

Sampling

2.9 The following criteria was used to sample the project schemes and households to visit:

- i. **Regional balance:** To achieve regional balance, seven (7) counties were sampled based on the former administrative regions in the Country. The regions are: Nairobi, Eastern, Western, Rift valley, Nyanza, Central, Coast and the North Eastern.
- ii. **Phases:** The Last Mile Connectivity Project phases were considered in sampling schemes within the sampled counties. The team also considered the proximity of the schemes to each other to reduce on travel time.
- iii. **Status of implementation:** Schemes were grouped into their status of implementation, that is, schemes in design phase, in construction phase, in metering phases and those that had been connected to electricity. Samples of schemes to visit were picked based on this grouping.
- iv. **Number of connected beneficiaries in a scheme:** Schemes with 20 or more beneficiaries were considered as the sample size per scheme was

set at 10 beneficiaries, therefore, if some beneficiaries were absent, replacement could be made from the remaining 10.

- v. **Distance from the transformer:** The team stratified the households based on distance from the transformer; close, middle and farthest to the transformer.

2.10 The sampled schemes are as shown in [Appendix 3](#).

Assessment Criteria

2.11 The criteria for the audit were derived from the Project Appraisal Document, National Electrification Policy, 2018 and project progress reports. The detailed criteria are as shown on [Appendix 4](#).

CHAPTER 3: DESCRIPTION OF THE AUDIT AREA

Background Information

- 3.1 The Last Mile Connectivity Project (LMCP) was one of the National Government's initiatives to stimulate economic growth and accelerate job creation in order to improve the economic wellbeing of Kenyans. The project also aimed at accelerating electricity connection by expanding power distribution networks and connecting beneficiaries in low income groups, rural and peri-urban areas, as well as small businesses. The project development objectives were:
- i. To increase access to electricity;
 - ii. To improve reliability of electricity service; and
 - iii. To strengthen the Kenya Power and Lighting Company (KPLC) financial position.
- 3.2 To achieve these objectives, the Project aimed at connecting beneficiaries within a radius of 600 meters from distribution transformers, either by installation of a service cable or extension of the low voltage lines to beneficiaries. In addition, beneficiaries near the existing medium voltage transmission lines were to be connected by extending the lines and installing new distribution transformers with associated low voltage transmission lines.
- 3.3 The Last Mile Connectivity Project was to be implemented in four phases. Phase I, Phase II and Phase III targeted to connect a total of 941,637 beneficiaries. Phase IV which targeted to connect 181,320 beneficiaries had not commenced at the time of audit, due to a pending court case.
- 3.4 The customer connectivity fee under the Project was subsidized from Ksh.32,480 to Ksh.15,000. The project beneficiaries could either pay the connection fee upfront or through a loan facility, Stima Loan, whose repayment was to be a deduction of 50% for each electricity token purchase for a period of 36 months. The recovery rate was later reviewed to 30% for each electricity token purchase.

- 3.5 The Project was jointly funded by the Government of Kenya (GoK), African Development Bank (AfDB) for Phase I and Phase III and the World Bank, through the International Development Association (IDA) for Phase II.

Statutory Mandate of the Ministry of Energy and Petroleum and the Kenya Power and Lighting Company

The Ministry of Energy and Petroleum

- 3.6 The Ministry of Energy and Petroleum (MoEP) is mandated to develop and implement policies that create an enabling environment for efficient operation and growth of Kenya's energy sector. The Ministry sets strategic directions to facilitate the growth of the sector while providing long term vision for all sector players. Under LMCP, the Ministry was charged with the responsibility of overall coordination and oversight of the Project. The Ministry was also responsible for the following activities:
- i. Definition of areas to be electrified based on technical and policy development priorities;
 - ii. Consolidating information from implementing agencies;
 - iii. Monitoring the implementation of the Project; and
 - iv. Evaluating the Project.

The Kenya Power and Lighting Company

- 3.7 The Kenya Power and Lighting Company's (KPLC) key mandate is electricity transmission, distribution and retail sales to beneficiaries throughout the country. KPLC is the lead implementing agency in the Last Mile Connectivity Project. The role of KPLC in the Project entails:
- i. Medium voltage extension in Phase II and low voltage infrastructure development in Phases I, II and III, installation of service cables and installation of the energy meters;
 - ii. Collecting and deducting the electricity connection fee advanced to the beneficiaries;
 - iii. Carry out maintenance of LMCP infrastructure and ensure beneficiaries have reliable power after completion of the project.

3.8 Other Stakeholders involved in LMCP implementation are discussed below: -

The National Treasury

3.9 The National Treasury had the role of approving request for tax exemptions for the imported materials and disbursement of funds to the Ministry of Energy and Petroleum for expenditure under the Project. The National Treasury was also to monitor and evaluate the progress of the project and prepare quarterly reports which were to be submitted to the financiers.

The African Development Bank

3.10 The African Development Bank (AfDB) is the financier of Phases I and III of LMCP through a loan.

The International Development Association – World Bank

3.11 The International Development Association (IDA) is the financier of Phase II of LMCP through a loan.

The Last Mile Connectivity Project Implementation Framework

The Last Mile Connectivity Project Implementation Structure

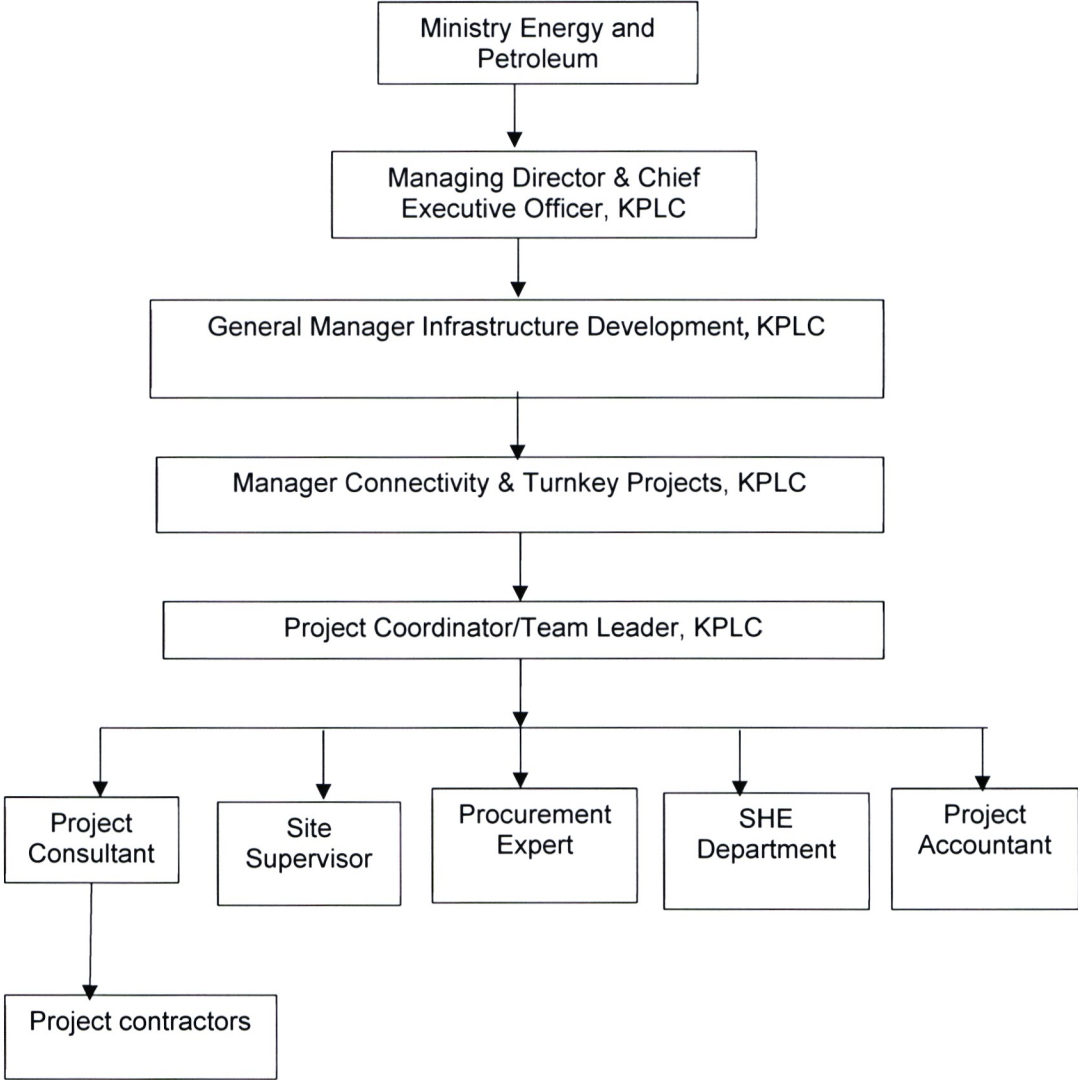
3.12 The Ministry of Energy and Petroleum, through the Principal Secretary, was responsible for the overall coordination and monitoring of the Project. At KPLC, the Managing Director had the overall responsibility, while the General Manager, Infrastructure Development was responsible for the Project implementation. Working under the General Manager was the Project Implementation Team (PIT) headed by the Manager, Connectivity and Turnkey Projects.

3.13 The Project Implementation Team comprised of the Project Coordinator or Team Leader, site supervision engineers, procurement experts, social economists, environmentalists and accountants. The Project Implementation Team was responsible for designing, engineering, procurement, accounting, project works supervision, monitoring and wayleaves acquisition. The project consultants were responsible for supporting KPLC in the management and supervision of installation works. Each phase of LMCP had a project consultant.

The contractors, whose role was to carry out project design, procure plant and equipment to be used in the project and construction of the distribution networks reported directly to the consultants. The consultants and contractors engaged in the project are shown on [Appendix 5](#).

3.14 **Figure 1** shows LMCP implementation structure.

Figure 1: The Last Mile Connectivity Project Implementation Structure



Source: Auditors understanding obtained from interviews and document reviews

The Last Mile Connectivity Project Implementation Phases

3.15 The Last Mile Connectivity Project was to be implemented in phases. The phases and the components that were to be implemented under the Project are shown in **Figure 2** and a detailed analysis is shown in [Appendix 6](#).

Figure 2: Last Mile Connectivity Project Phases I, Phase II and Phase III

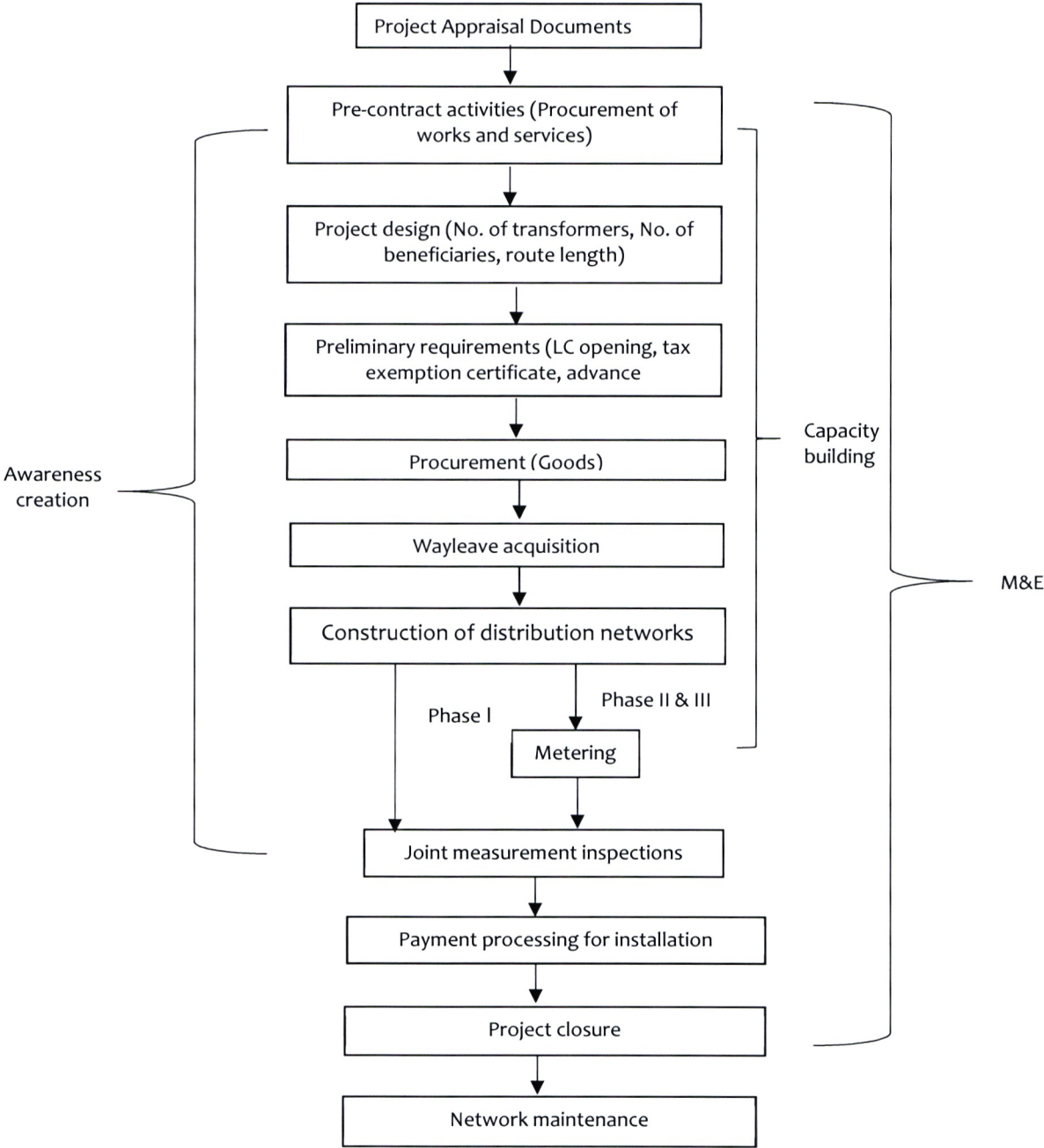
<p>Phase I Component A: Construction of low voltage networks Component B: Project supervision and management Component C: Capacity building and re-establishment of KPLC tree seedling nursery Component D: Project audit</p> <p>Phase II Component A: Improvements in service delivery and reliability A1: Upgrade of the Supervisory Control and Data Acquisition/Energy Management System A2: Distribution system enhanced flexibility A3: Enhance maintenance practices to improve the reliability of electricity supply Component B: Revenue Protection Program (RPP) Component C: Electrification Program C1: Peri-urban electrification C2: Off-grid electrification Component D: Technical assistance and capacity building D1: Preparation of the National Electrification Strategy D2: Detailed national technical specifications and standardization D3: Regulations for enforcing quality on electricity service delivery D4: Project preparation support for feasibility studies for new investments as required and project monitoring and evaluation D5: Training and capacity building</p> <p>Phase III Component A: Supply of energy meters Component B: Construction of low voltage distribution lines Component C: Project supervision and management Component D: Capacity building program Component E: Social media and marketing</p>
--

Process Description for the Last Mile Connectivity Project Implementation

3.16 The Last Mile Connectivity Project implementation entails procurement of works, project design, awareness creation, capacity building, obtaining preliminary requirements (letters of credit and tax exemption certificates), procurement of goods, wayleave acquisition, construction of distribution networks, customer contracting, metering, joint measurement inspection, payment processing and project closure. The whole process was done through

the Facility Database (FDB) digital platform. FDB is a Geographical Information System (GIS) application through which KPLC captures, analyses, manages and stores its transmission and distribution facilities data. The process is illustrated in **Figure 3**.

Figure 3: Last Mile Connectivity Project Process Description



Source: OAG analysis of project appraisal and contract documents

Project Appraisal Document

3.17 The Project Appraisal Document is the guiding document on the implementation of the project. It is an agreement between the borrower and the bank with specifications on project design, expected project outcomes, target beneficiaries and evaluation tools for monitoring progress. Through the document, the financier confirms that all aspects of the project are consistent with its operational requirements, assesses the project's readiness for implementation, and that the borrower has institutional arrangements in place to implement the project efficiently. All parties agree on a project timetable and on public disclosure of key documents.

Awareness Creation

3.18 Awareness creation on LMCP was to be carried out throughout the project, from the design stage to the issuance of the Joint Measurement Certificate (JMC). The purpose of awareness creation was to provide an opportunity for KPLC to enlighten beneficiaries on how the Project was to be implemented. The areas to be covered in awareness creation included; the project benefits, negative impacts, mitigation measure and safety when using electricity. This was to be implemented by use of public Barazas, print media, social media and main stream media.

Capacity Building

3.19 Capacity building included training of technical staff in targeted areas of expertise. This included project management, project design, procurement, wayleave acquisition, operation and maintenance of the distribution system, contract administration and environmental and social aspects.

Pre-Contract Activities

3.20 It involved procurement of project works and services. Project works were issued in lots with Phase I, Phase II and Phase III having ten (10), six (6), and fifteen (15) lots, respectively. Each phase had one consultant in charge of supervision.

Project Design

- 3.21 The project design was to be done after site visits. It entailed determining the number of beneficiaries to be connected, the route where the electrical line would pass and the quantity of materials required. Under Phases I and III, contractors undertook both the project design and installation of works, whereas in Phase II, designs were carried out separately by design contractors and once completed, tenders were floated for the installation works.
- 3.22 After project design, the targeted number of beneficiaries per transformer was revised downwards. The revision was as a result of some of the targeted beneficiaries having been connected through the paid-up process before finalization of the design phase.
- 3.23 The Projects' original targets and revised targets after design are shown in **Table 1**.

Table 1: Project Targets Before and After Design

Phase	Item	Unit of Measure	Original Targets	Revised Targets after Design
I	Transformers	PC	5,320	4,859
	Beneficiaries	PC	314,200	224,952
	Low voltage stringing	KM	17,161	11906
II	New and maximization transformers	PC	4200	3069
	Beneficiaries	PC	312,500	244,805
	Low voltage stringing	KM	12,501	11,104
	HT stringing	KM	1,000	741
III	Transformers	PC	5319	5845
	Beneficiaries	PC	314,937	296,416
	Low voltage stringing	KM	18,893	18,862

Key: PC- Piece, KM-Kilometre, LV – Low Voltage and HT – High Tension

Source: OAG analysis of information from status reports

Preliminary Requirements (Letter of Credit, Tax Exemption Certificate, Advance Payment)

- 3.24 Prior to procurement of goods, an advance payment was to be made to the contractor. This was to allow the contractors to procure materials, both locally and internationally. For Phase II of the Project, a Letter of Credit (LC) was to be

issued to allow for procurement of goods on credit. However, for Phases I and III, direct payments were to be made to the suppliers of goods.

Procurement

- 3.25 In Phase I and Phase III, contractors were to procure all the materials, that is; poles, conductors, fittings, stays and insulators, except pre-paid meters and meter accessories, which were to be supplied by KPLC. In Phase II, however, contractors were only required to procure minor items like stays, fittings and insulators, while major items like poles, conductors, transformers, pre-paid meters and meter accessories were to be supplied by KPLC.
- 3.26 All imported materials in Phase I, Phase II and Phase III were to be exempted from import duties, Railways Development Levy and Value Added Tax (VAT). Upon arrival of imported goods, the contractor was to apply for tax exemption within 21 days, through KPLC. The company was then to forward the application to the Cabinet Secretary, MoEP, for transmission to The National Treasury for approval. After approval, the contractor was to present the documents for tax exemption to the Kenya Ports Authority for clearance of the goods and waiver of demurrage charges. According to project consultants, the agreed timeline for issuance of tax exemption was 30 days.

Wayleave Acquisition

- 3.27 Wayleave acquisition entailed seeking consent from landowners to lay electrical lines on their land parcels. This was to be done by the Wayleave Officer through a written and signed wayleave consent with the landowners. The project by its nature did not require resettlement, however, there was need to compensate beneficiaries whose assets, mainly trees and crops, were likely to be damaged during the project implementation.

Construction of Distribution Networks

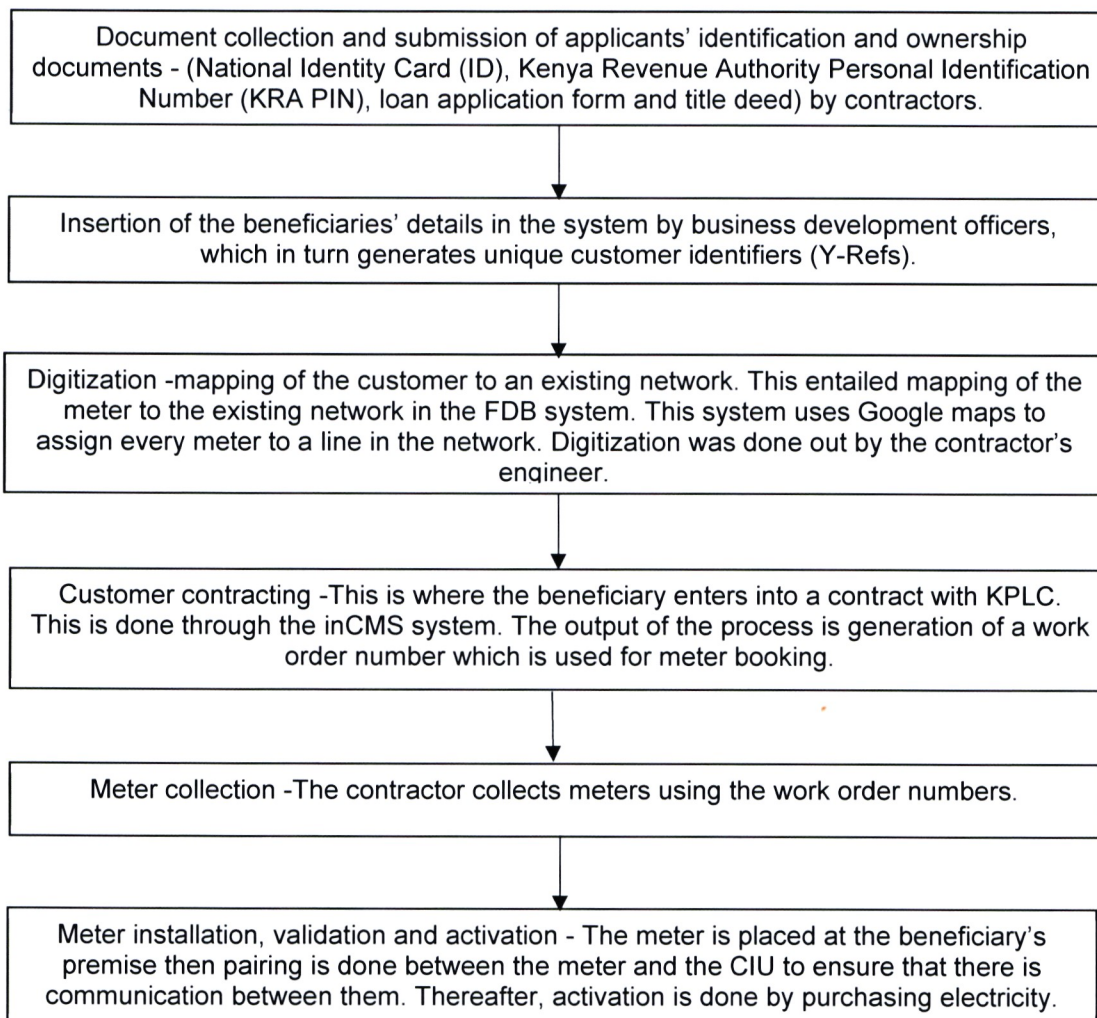
- 3.28 Construction of distribution networks entailed construction of new lines and replacement of congested or obsolete lines. It also entailed installation of distribution transformers. This was to maximize the number of connections in the identified sites. The exercise entailed; marking the route of the transmission

line, pole erection and dressing, stringing, stay installation, circuit cable and fuse installation, protective multiple earthing installation and meter board installation.

Customer Contracting in the System and Meter Installation

3.29 The process entailed collection of the requisite documents from beneficiaries and submission to KPLC, insertion, digitization, customer contracting, meter collection, meter installation and validation, as illustrated in **Figure 4**.

Figure 4: The Last Mile Connectivity Project Metering Process



Source: OAG analysis of information obtained through interviews and document reviews

Joint Measurement Inspections

3.30 Joint inspections between project engineers, project consultants and contractors were to be carried out to confirm the work done. The output of the

inspection was issuance of a Joint Measurement Certificate (JMC) that was used by contractors when raising invoices for payment processing.

Processing of Contractors' Payments

- 3.31 Upon receiving the Joint Measurement Certificate, the contractor issues an invoice to KPLC for payment processing. The Kenya Power and Lighting Company then submits the invoice to MoEP for voucher generation. The Ministry then submits the voucher to The National Treasury who releases the funds to the project account operated by KPLC, thereafter, the contractor is paid.

Project Coordination, Supervision, Monitoring and Evaluation

- 3.32 The Ministry of Energy and Petroleum was responsible for overall coordination, monitoring and evaluation of the Project and consolidation of information related to the Project implementation. The Ministry was supposed to hire a project coordinator to consolidate the information prepared by the implementing agencies and report to the Principal Secretary. The Project Coordinator, with the assistance of the project supervision team and the Management Consultant, was to prepare and submit to AfDB quarterly progress reports.
- 3.33 The Project Implementation Team assisted by the Management Consultant was to follow-up milestones of the Project, track the progress of the Project and recommend corrective measures. The consultant was to be recruited through international competitive bidding. Monitoring and evaluation or supervision entailed evaluation of bids, assistance during contract negotiation, approval of the project design, supervision of construction and monitoring the implementation of the Environmental and Social Management Plan.

Project Closure

- 3.34 Project closure entailed completion and successful handing over of all schemes to KPLC by the contractors. The key elements of project closure included completion of project activities, including ensuring that all beneficiaries were connected to electricity, confirmation of connection targets, material reconciliation, joint measurement certification, finalization of invoice processing

and payments. It also included ensuring that impact assessment on the project activities is undertaken. The planned timeliness and entities responsibility for project closure for Phases I, II, and III of LMCP are as shown in Table 2.

Table 2: Project Completion Dates

Phase	Expected Project Completion Date	Responsibility
I	February 2019	KPLC/Consultant
II	31 December, 2019	KPLC/Consultant
III	March 2020	KPLC/Consultant

Source: OAG analysis of the project appraisal documents

3.35 The Supervision Consultant was to prepare and submit to MoEP and the African Development Bank, final commissioning reports at the completion of the respective phases. Within six months of the commissioning of the Project, AfDB, together with KPLC were to prepare and submit a Project Completion Report to the Ministry of Energy and Petroleum.

Network Maintenance After Completion of Works

3.36 After commissioning, the project was to be handed over to KPLC, where it was to be maintained as per the Company's maintenance policy. This was to ensure that beneficiaries have quality and reliable power.

Funding and Project Cost

3.37 The total funding for Phase I, Phase II and Phase III of LMCP is approximately Ksh.63 billion, comprising of the Government of Kenya (GoK) counterpart funding of Ksh.16 billion and loans from Development Partners amounting to Ksh. 47 billion. Details of funding for the Project are shown on **Table 3**.

Table 3: Analysis of Budget and Expenditure for the Last Mile Connectivity Project

		Annual Budget in Kenya Shillings in "000"			Annual Expenditure in Kenya Shillings in "000"		
Year	Source of Funds	Phase I	Phase III	Phase II	Phase I	Phase III	Phase II
2015/2016	Donor	-	-	-	2,213,065	-	-
	GoK		1,500,000	-	-	-	-
2016/2017	Donor	7,500,000	-	2,030,000	4,255,465	-	225,837
	GoK		5,700,000	-	-	-	-
2017/2018	Donor	3,168,000	-	2,562,000	2,183,448	1,490,868	3,211,045
	GoK		4,967,500	-	956,294	-	-
2018/2019	Donor	1,190,000	2,500,000	5,942,000	1,255,294	4,901,526	4,015,045
	GoK		600,000	-	315,955	-	-
2019/2020	Donor	382,000	3,520,000	6,205,000	446,607	3,337,453	3,509,531
	GoK		1,500,000	-	74,554	485,624	-
2020/2021	Donor	950,000	3,000,000	3,030,000	271,767	3,499,750	1,994,520
	GoK		802,710	-	221,090	1,468,885	-
2021/2022	Donor	250,000	1,200,000	4,315,000	458,717	570,612	1,222,154
	GoK		1,012,000	-	287,856	2,016,710	-
Total	Donor	13,440,000	10,220,000	24,084,000	11,084,363	13,800,209	14,178,132
	GoK		16,082,210	-	1,855,749	3,971,219	-
Total(Phases)			39,742,210	24,084,000	12,940,112	17,771,428	14,178,132
Total Donor				47,744,000			39,062,704
Total GoK			16,082,210				5,826,968
Grand Total			63,826,210				44,889,672

Source: OAG analysis of LMCP budget and expenditure

CHAPTER 4: FINDINGS OF THE AUDIT

4.1 The Last Mile Connectivity Project (LMCP) had targeted to connect 1,145,957 customers to the national grid between the years 2015 and 2020. The project was to be implemented in four phases, however, the audit evaluated Phase I, Phase II and Phase III of the Project, leaving out Phase IV which was yet to commence as at the time of audit due to a pending court case. Phases I, II and III of the Project had initially targeted to connect a total of 941,637 customers, but this was revised to 766,173 customers after the design stage. Review and analysis of a KPLC progress report dated 30 April, 2022 established that a total of 683,762 of the proposed beneficiaries, equivalent to 89% of the 766,173 initially targeted beneficiaries had been connected to electricity as shown in **Table 4**.

Table 4: Annual Customer Connections

Phases	Number of Customers Connected Annually							Total as at 30 April, 2022
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	
Phase I	0	49,813	58,163	30,256	57,251	11,356	2,861	209,700
Phase II	0	0	0	13,969	49,104	85,159	20,034	168,266
Phase III	0	0	214	17,289	79,868	156,159	52,266	305,796
		49,813	58,377	61,514	186,223	252,674	75,161	683,762

Source: OAG analysis of KPLC progress reports

4.2 A status report shared by KPLC in the response to audit findings and recommendations showed that as at end of October 2022, the Project was 99% complete. A total of 723,910 beneficiaries had been connected.

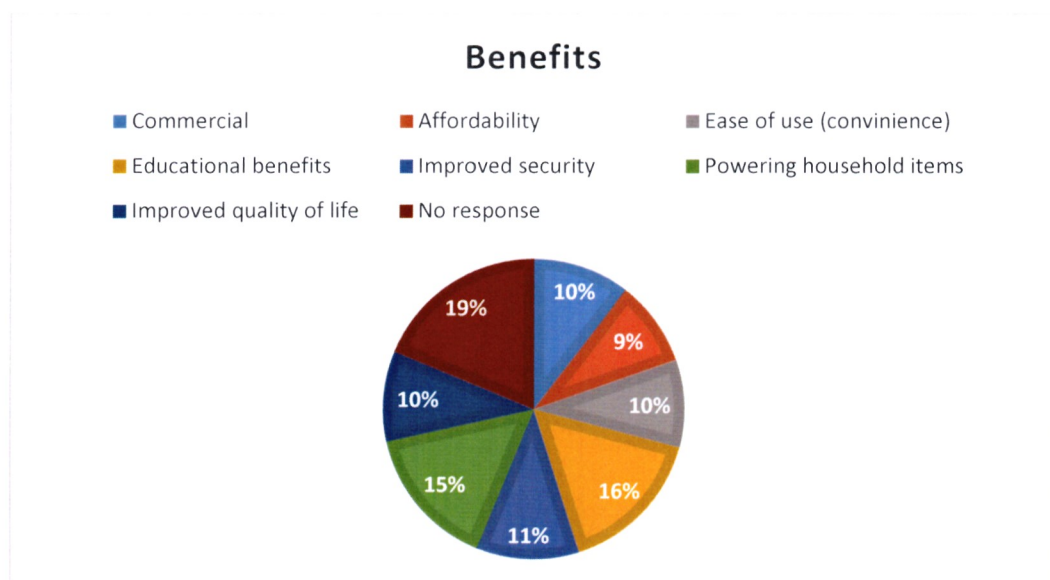
4.3 Field verification and interviews revealed that the Project had achieved the following benefits:

- i. Creation of small businesses such as hair salons, posho mills, welding workshops, water purification and refilling plants and retail shops, hence accelerating job creation;
- ii. Creation of jobs among locals who were involved in the construction of distribution networks;

- iii. Better and clean energy source, enabling children to study for extended hours from the comfort of their homes;
- iv. Increased access to information and entertainment since beneficiaries were able to watch television, listen to radios and use computers, among other gadgets; and
- v. Enhanced security arising from well-lit social, commercial and private premises.

Figure 5 shows the benefits derived from the project.

Figure 5: Benefits Derived from the Implementation of the Project



Source: Analysis of beneficiaries' responses to survey questionnaires

4.4 However, despite the positive impacts highlighted above, the implementation of the Last Mile Connectivity Project experienced the following shortcomings: -

A. Delays in Project Implementation

4.5 According to the project appraisal documents, contractors were to execute the contracted works within a period of 18 months. Phase I, Phase II and Phase III of the project were to be commissioned in February 2019, December 2019 and March 2020, respectively. However, document reviews and interviews with the Project Implementation Team revealed that there were delays and none of the contracts were executed within the 18 months. Further, none of the phases had been completed and closed as at the time of audit, in April 2022.

4.6 According to the project progress report dated 30 April, 2022, the overall project completion status was above 69% for all the phases. The overall project completion status summary is shown in **Table 5** and the detailed completion status per lot is as shown in [Appendix 7](#).

Table 5: Project Completion Status as at 30 April, 2022

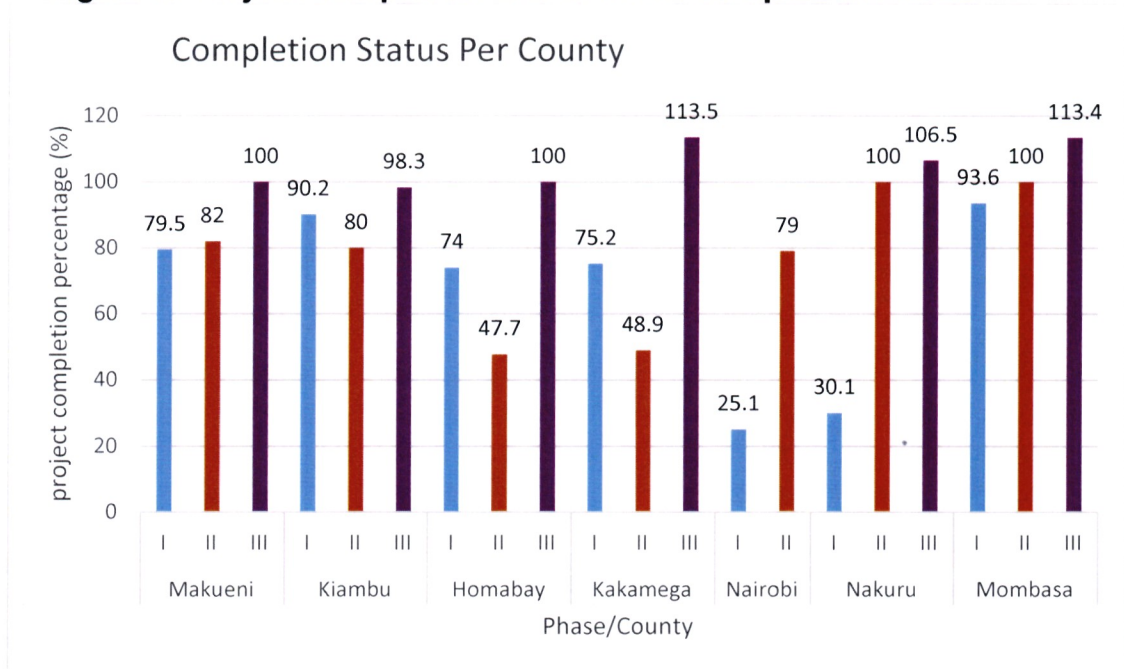
Phase	Item	Unit of Measure	Revised Target	Completion Status as at 30 April, 2022	Project Completion Status in %
I	Transformers	PC	4,859	4,302	89
	Beneficiaries	PC	224,952	209,700	93
	L V stringing	KM	11,906	10,978	92
II	New and maximization transformers	PC	3,348	2,502	75
	Beneficiaries	PC	244,805	168,266	69
	LV Stringing	KM	11,104	9,109	82
	HT stringing	KM	741	527	71
III	Transformers	PC	5,845	4,965	85
	Beneficiaries	PC	296,416	305,796	103
	LV stringing	KM	18,153	17,173	95

Key: PC- Piece, KM-Kilometer, LV – Low Voltage and HT – High Tension

Source: OAG analysis of KPLC's project progress report as at 30 April, 2022

4.7 While the progress report shows a higher project completion status, an analysis of the project completion status in the sampled counties revealed instances where completion status was below 69%. For instance, Phase II projects in Homabay and Kakamega Counties were at 48% and 49%, respectively as at the time of audit. Other instances were noted in Phase I projects in Nairobi and Nakuru Counties where the completion rates were 25% and 30%, respectively. The low completion rate in Nakuru County was partly as a result of the termination of a contract due to the underperformance of the contractor responsible for Lot 4. The completion status for the sampled counties is shown in **Figure 6**.

Figure 6: Project Completion Status in the Sampled Counties



Source: OAG analysis of KPLC project progress reports

4.8 Review of documents and interviews with key project implementation personnel revealed that two (2) out of ten (10) contracts under Phase I were yet to be closed, while five (5) out of six (6) and three (3) out of fifteen (15) contracts under Phase II and Phase III respectively, were still ongoing. **Table 6** shows delays in completion of the contracts in months.

Table 6: Delays in Completion of Projects by Contractors

Lot	Name of Contractor	Effective Date	Original Contract End Date	Revised Completion Date	Time Taken (months)	Project Status as at the April, 2022
Phase I						
1	Gammon India	30/03/2016	30/09/2017	30/09/2019	43	Completed
2	AEE Power	23/03/2016	23/09/2017	31/06/2019	40	Disputed
3	RKV Consortium	15/04/2016	15/10/2017	30/09/2019	42	Completed
4	AEE Power	30/03/2016	30/09/2017	30/09/2019	40	Disputed
5	Etrade	17/05/2016	17/11/2017	30/09/2019	41	Completed
6	Polyphase	17/05/2016	17/11/2017	31/12/2018	34	Completed
7	Neo-Electric	06/01/2016	30/11/2017	30/11/2019	42	Completed
8	Metsec Cables	24/04/2016	24/10/2017	30/11/2019	44	Completed
9	Angelique	17/05/2016	17/11/2017	31/03/2019	35	Completed
10	Etrade	17/05/2016	17/11/2017	30/09/2019	41	Completed
Phase II						
1	BES (Europe) Group	04/06/2020	03/12/2021	04/09/2022	20	Work ongoing
2	STEG International Services (Tunisia)	09/02/2018	30/09/2020	30/09/2022	48	Completed on 28/08/2022
3	Lukenya Greens Ltd & Shailee Electricals Pvt(India) JV	08/02/2018	30/09/2020	31/12/2021	47	Contract expired on 31/12/2021 Reconciliation and closure ongoing
4	Hubei Hongyuan Power Engineering Co. China	29/01/2018	30/09/2020	30/09/2022	49	Work ongoing
5	Lukenya Greens Ltd & Shailee Electricals Pvt(India) JV	19/01/2018	30/09/2020	31/12/2021	48	Contract expired on 31/12/2021 Reconciliation and closure ongoing
6	Larsen & Toubro Limited	25/01/2018	30/09/2020	30/09/2022	49	Work ongoing
Phase III						
1	Giza Cables	13/03/2018	12/09/2019	30/09/2021	43	Completed
2	Giza Cables	06/06/2018	05/12/2019	30/09/2021	40	Completed
3	Bajaj Elecricals Ltd/Wayne Homes Ltd	19/09/2018	18/03/2020	30/09/2021	37	Completed
4	Transrail Lighting Ltd	10/04/2018	9/10/2019	31/03/2022	46	Completed on 30/03/2022
5	Sinotec Corporation	15/10/2018	14/04/2020	31/03/2022	40	Completed on 18/03/2022
6	Esiko Kenya Enterprises/Nari Group Corporation JV	22/02/2019	22/08/2020	31/03/2022	36	Ongoing
7	K B Saghani & Colpitt JV	28/12/2017	21/06/2019	30/09/2021	46	Completed
8	C P Power & Gateway Energy JV	08/01/2018	07/07/2019	31/03/2022	49	Ongoing
9	CCC International Nigeria	15/10/2018	14/04/2020	31/03/2022	40	Completed on 03/03/2022
10	Camusat & Philafe JV	20/02/2018	19/04/2019	31/03/2022	48	Completed on 31/12/2021
11	Meru Wood Industries JV	08/01/2018	07/08/2019	31/03/2022	49	Ongoing
12	Nirav & Annihi JV	10/04/2018	09/10/2019	30/09/2021	42	Completed
13	Burhani Engineers Ltd	28/12/2017	27/06/2019	31/03/2021	40	Completed
14	Steg International Services	15/05/2018	14/11/2019	30/09/2021	41	Completed
15	Global Access & CPF JV	08/01/2018	07/07/2019	31/03/2022	49	Completed on 25/03/2022

Source: Status of the various contracts under the Project at 30 April, 2022

4.9 The delay in completion of the project resulted in contractors applying for contract extensions up to five (5) times in some cases as shown in [Appendix 8](#). The extension of contracts in turn led to the extension of the consultants' contracts, since they were meant to run for 6 months' post project completion.

4.10 The project extensions resulted in additional costs in the form of office space, rent for storage of the materials and transportation costs, consequently increasing the cost of the affected contracts. This will at the end increase project costs, since additional costs will be claimed from the project funds by the affected contractors at the completion of the project.

4.11 Based on the information gathered in the audit, delay in completion of the Project was attributed to factors discussed below: -

i. Delay in Processing Tax Exemption Approvals and Import Clearance

4.12 The Project contractors were allowed to purchase materials both locally and internationally. Upon arrival of the internationally procured materials, the contractors were required to apply for global and specific tax exemption within 21 days through KPLC. According to the project consultants, the agreed timeline for issuance of tax exemption was 30 days. However, document review and interviews with project contractors and consultants revealed, that was not executed as expected. There were instances of delays of up to 10 months in acquiring specific and global tax exemptions for imported materials.

4.13 This could have been occasioned by delays in processing of tax exemptions at the various stages of approval; at KPLC, Ministry of Energy and Petroleum and the Kenya Ports Authority. This is illustrated by two cases; Lot 14 in Phase III and Lot 2 in Phase II as shown in **Table 7**.

Table 7: Time Taken at Various Stages of Processing Tax Exemption

Chronology of Events	Phase/Lot	
	Phase III/ Lot 14	Phase II/ Lot 2
Date contractor sent request to KPLC	April 30,2019	June 17,2019
Date KPLC sent request to the Kenya Ports Authority	June 24, 2019	September 11, 2019
Date exemption was cleared	July 08, 2019	Had not been cleared as at December 7,2020
Demurrage charges accrued	Ksh. 8,740,077	Ksh. 6,449,495

Source: OAG analysis of tax exemptions records

4.14 The delays in tax exemptions may have led to delays in timely delivery of materials which subsequently delayed completion of the Project within the

contract period. Additionally, these delays resulted in contractors incurring demurrage charges,⁴ consequently increasing the project costs. For instance, the contractor implementing Lot 14 of Phase III incurred demurrage charges amounting to Ksh. 8,740,077 due to delay in obtaining specific tax exemptions related to the shipment of wooden poles. The exemption process took 61 days, from 08 May, 2019 when the goods arrived at the Port of Mombasa, to 08 July, 2019 when the exemption was issued. In addition, the contractor implementing Lot 3 and Lot 5 of Phase III incurred costs amounting to Ksh.11,925,142 as a result of a delay of 10 months in obtaining global tax exemption; from when the contract was signed on 09 February, 2018 to when the exemption certificate was issued on 04 December, 2018.

ii. **Delays in Processing Contractors Invoices and Payments**

4.15 According to the contracts signed between contractors and KPLC, payment was supposed to be made within 60 days after receipt of an invoice. However, interviews and document review revealed that there were delays in processing payment to contractors, with some payments taking more than 60 days, as shown in **Table 8**.

⁴ Additional cost incurred due to non-collection of imported goods from the port or rail yard within the specified time.

Table 8: Sample of Invoices that Took More than 60 Days to be Paid

Invoice Number	Phase	Lot	Date Issued	Invoice Amount	Date Paid	Days Taken
G-353/USD/Sch-4a/2B	Phase III	Lot 4	11/3/2019	\$21,881.82	10/9/2019	114
G-353/USD/Sch-03/04	Phase III	Lot 4	28/03/2019	\$420,694.83	10/9/2019	106
163-21	Phase III	Lot 14	09/08/2021	\$345,325.94	Not paid as at March 2022	204
92190000009	Phase III	Lot 3	24/02/2020	\$51,641.60	20/08/2020	178
92190000009	Phase III	Lot 3	24/02/2020	\$10,328.32	20/08/2020	178
S86190000007	Phase III	Lot 3	31/03/2020	\$107,342.33	20/08/2020	142
S86190000008	Phase III	Lot 3	31/03/2020	\$275,250.14	20/08/2020	142
S86190000009	Phase III	Lot 3	17/04/2020	\$130,525.58	20/08/2020	125
S86190000010	Phase III	Lot 3	17/04/2020	\$52,852.80	20/08/2020	125
S86190000011	Phase III	Lot 3	08/05/2020	\$161,900.87	20/08/2020	104
92190000010	Phase III	Lot 3	09/04/2020	Ksh 32,753,040.62	20/08/2020	133
92190000010	Phase III	Lot 3	09/04/2020	KES 2,519,241.05	20/08/2020	133

Source: Review of KPLC Accounts Department files and reports

4.16 Delayed payments were occasioned by a lengthy approval process, as invoices had to be submitted to KPLC for verification, then to the Ministry of Energy and Petroleum for onward transmission to the National Treasury, before funds were released to KPLC to pay the contractors. The delays were also partly attributed to the requirement that the threshold for invoice processing be pegged at USD 200,000. The numbers of invoices processed at any one time were therefore many, considering the large value of each contract. Document review revealed that at KPLC and at the Ministry level, a number of invoices took between 37 to 188 days and 114 to 347 days, respectively to be processed. Further, budgetary cuts occasioned by the Governments' announcement of austerity measures on its fiscal framework affected disbursement of counterpart funds in Phase I and Phase III. In Phase II, project implementation stalled and lost about 1.5 years of implementation time, due to lack of adequate budgetary allocation.

4.17 This delay in payment to contractors affected contractors cash flow and ultimately resulted in slow progress of works. Document review revealed that the contractor undertaking Lot 4 in Phase III of the project faced cash flow challenges

due to delay in processing of invoices for a period of 10 and 11 months for invoices amounting to USD 1,433,805 and Ksh.47,100,249, respectively. The slow progress of work, consequently, led to application of project extensions by the contractors to recover the lost time.

iii. Delay in Issuance of Letters of Credit for Importation of Materials

4.18 Interviews with project contractors revealed that there were delays in issuance of Letters of Credit (LCs) to Phase II contractors. After revision of the initial commencement date from September, 2015, Phase II of LMCP was to start in 2018. However, during that year, KPLC did not issue LCs to allow contractors to import materials. The delay in issuance of LCs was attributed to delayed funding. Interviews and document reviews revealed that it took up to 12 months before the initial LC was issued, hence delaying the procurement process.

4.19 The delay in issuance of LCs did not only affect the project implementation timelines, but also the project implementation costs.

iv. Delays due to Wayleave Disputes

4.20 Interviews with contractors, consultants and KPLC staff revealed that there were wayleave disputes which delayed the Project implementation. For instance, in Nguu Tatu Scheme, a Phase III site in Mombasa County, the land owner had gone to court to stop the installations of poles and lines passing through his land. The contractor could only connect beneficiaries on one side of the transformer that was not under dispute. As at the time of the audit, the issue was still in court and the contractor had not recovered the poles and conductors installed on the land.

4.21 In Ruai Scheme, a Phase II site in Nairobi County, the contractor had laid the network and installed three transformers ready to connect 265 beneficiaries. However, the site had ownership disputes with allegations of land grabbing. As at the time of the audit, the targeted beneficiaries had been forced out of the land after the site was demolished.

4.22 The wayleave disputes could have been avoided if KPLC had verified ownership and sought the owners' consent prior to installation of the infrastructure.

v. Delays Attributed to Termination of Contract

4.23 A contractor, AEE Power, South Africa, had been awarded two contracts in Phase I to connect a total of 62,892 beneficiaries. The contractor was issued with a notice of default and termination of the contract, which led to stoppage of work. The termination of the contract was due to underperformance on the terms of engagement. The contractor sued KPLC on 28 May, 2019 and as at the time of audit, the contract period had lapsed, while the court case was still ongoing.

vi. Delays in the Metering Process

4.24 According to KPLC's Service Charter, it should take the Company approximately three (3) days to connect paid up customers requiring meter connection. For customers requiring low voltage extension in addition to the meter connection, it should take 17 days. Medium voltage extension, transformer installation and meter connection should take 45 days cumulatively. The Last Mile Connectivity Project did not have defined timelines for meter connection.

4.25 Document review and analysis of the customer meter installation timelines for the sampled schemes revealed that the metering process took between 74 and 509 days, as summarized in **Table 9**. The duration was calculated from the time the customer was allocated a unique reference number, to the first-time they purchased electricity tokens.

Table 9: Duration Taken to Connect Beneficiaries After Allocation of Unique Reference Numbers

County	Nakuru	Kakamega	Homa Bay	Makueni	Mombasa	Kiambu	Nairobi
Phases	Average Time Taken (Days)						
Phase I	443	189	82	187	126	136	230
Phase II	509	135	77	84	200	128	102
Phase III	74	224	105	333	93	268	0

Source: OAG analysis of metering data

4.26 The delays in the metering process were caused by the following factors: -

a. Slow Collection and Submission of Customer Documents

4.27 Review of documents indicated that there was slow collection and submission of mandatory documents required for creation of customer records, especially the

KRA Personal Identification Number (PIN) and contract forms. Interviews with cluster supervisors, contractors and KPLC business development teams revealed that beneficiaries delayed in submission of the requisite documents to facilitate the process of electricity connection. Delay in provision of the documents was as a result of some of the beneficiaries' lacking awareness on the requisite documents to be submitted, to enable them prepare them in advance for submission.

b. Loss of Beneficiaries' Documents

4.28 Review of documents revealed that there was loss of customer documents after submission to KPLC offices. Therefore, contractors had to go back to the same sites to collect and re-submit the documents. This resulted in delays in processing customer documents for meter connection. This was attributed to lack of a document tracking mechanism. This delayed the customer contracting process which led to delays in subsequent processes and eventual connection to electricity.

c. The Management Information System Downtime Delayed the Metering Process

4.29 Interviews and document reviews revealed that there were delays in generation of the unique customer identifiers (Y-refs), digitization and beneficiary contracting in the KPLC Management Information System. The Y-refs were necessary for allocation of meter numbers to beneficiaries. Therefore, delays in generation of the number led to delays in meter collection, installation and validation. The delays in contracting of beneficiaries was due to unreliability of the Facilities Database System (FDB) in terms of system down time. For instance, in Makueni County, the business development officers had to travel to Nairobi, the central office, in order to create customer records to enable them meet the set timelines.

d. Delay in Commissioning of Transformers

4.30 After installation of meters, they required to be validated. Validation required activation of power lines and commissioning of both the existing and newly installed transformers. Interviews and document review revealed that there were delays in commissioning of transformers. For instance, in Uwii Beach Scheme,

a Phase III site in Homabay County, installation works had been completed as at 30 September, 2021. However, as at the time of audit, meters had not been activated, since the transformer had not been energized and commissioned, due to fallen medium voltage lines. The beneficiaries list provided by KPLC for field verification indicated that the meters had been activated but physical verification revealed that they had not.

4.31 In Kiluluini Market, a Phase II site in Makueni County, beneficiaries had not been connected to electricity as at the time of audit. This was despite the contractor having completed installation works by 20 March, 2021 and a completion certificate issued. The delay in commissioning transformers could have been occasioned by lack of coordination between the Project Implementation Team and the Operations and Maintenance Department.

vii. Other Causes of Delays in the Implementation of the Project

a. Delays Due to Ban on Logging and Harvesting of Timber

4.32 Kenya experienced an extended dry season that resulted in the government imposing a country wide ban on logging and timber harvesting in all public forests from 24 February, 2018 to 24 November, 2018. The ban was later extended and was still in force as at the time of audit. Document reviews revealed that this caused a limited supply of wooden poles, while the demand remained high. This negatively affected the timely implementation of the Project as there were delays in supply of wooden poles required for the implementation of the Project.

b. Delays due to Debarment of a Joint Venture Partner

4.33 Lot 1 of Phase II was being implemented by British Engineering Services Limited (BES) in a joint venture with Ultimate Engineering Limited. A total of 25,255 beneficiaries were to be connected under the contract. In July 2019, the World Bank debarred Ultimate Engineering Ltd for a period of three (3) years for misrepresenting its financial qualifications, in connection with their bid. Consequently, project works were on hold until June 2020, when Kenya Power and Lighting Company signed a new contract with BES.

c. Theft of Materials and Vandalism of Installed Infrastructure

4.34 Interviews with contractors and document review revealed that the Project experienced instances of vandalism, both during and after installation. The audit established that there was theft of construction materials like wooden poles, meters, conductors and fittings in sites where construction works were ongoing. For instance, a Lot 3, Phase II contractor highlighted 58 cases where poles, lines and conductors were either stolen or vandalized.

4.35 Vandalism after installation was caused by delays in switching-off power supply to enable activation of constructed lines, delays in commissioning of transformers and delays in installation of meters. The affected contractors had to source and replace the stolen or vandalized infrastructure and redo the work, hence slowing down the completion of the Project. **Picture 1** and **2** show vandalized electrical installations.



Picture 1: Vandalized service cable at Mariri Primary School, Homabay County



Picture 2: Vandalized protective multiple earthing at Madenge Shopping Centre, Kakamega County

d. Delays in Switching-off Power to Enable the Activation of New Lines

4.36 After installation works were complete, power had to be switched off to allow for activation of the constructed lines. Contractors who were ready to activate new lines would make a written request to KPLC to switch off power on specified dates in order to allow the activation process to be carried out. Document review revealed that KPLC delayed in granting the requests to switch off power, with some requests taking up to 9 months to be granted. This delayed completion and handing over of the schemes and subsequently made the infrastructure

susceptible to vandalism. The delays in switching off power was partly caused by lack of coordination between the Operation and Maintenance Department and Project Implementation Team. [Appendix 9](#) shows instances of delays in switching of power.

e. COVID 19 Pandemic Restrictions

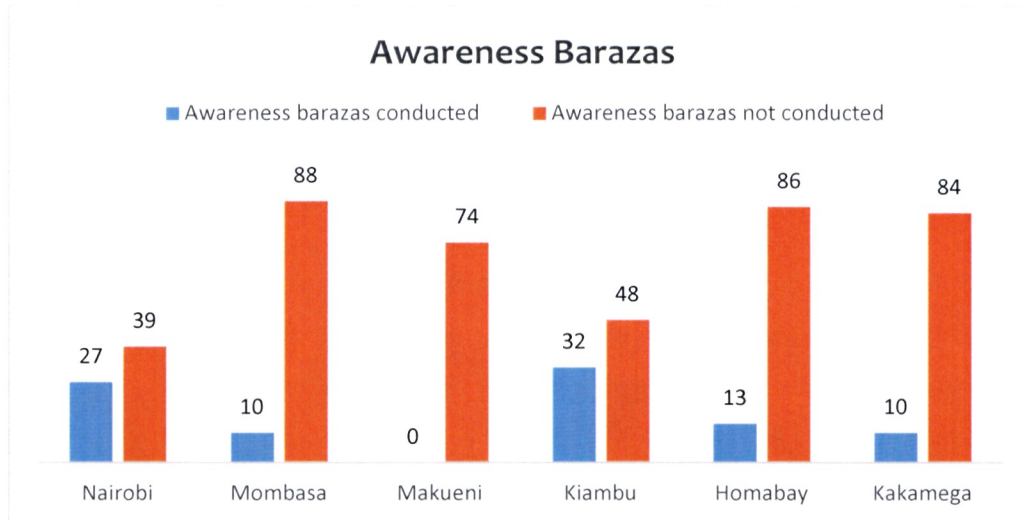
4.37 The outbreak of the COVID 19 pandemic and subsequent government containment measures delayed the implementation of the Project. The containment measures included restriction on movements from one area to another and social distancing. This in turn minimized the movement of goods and services which delayed construction and monitoring activities.

B. Inadequate Project Awareness to the Beneficiaries

4.38 According to the project appraisal documents, KPLC was to conduct Barazas to sensitize the beneficiaries on the project and explain what was expected of them. In addition, KPLC's Communications Department was to develop a communications campaign to update the public on the progress of the Project. Further, good practice requires that project awareness be conducted before, during and post project implementation.

4.39 Interviews with business development teams revealed that KPLC conducted unstructured public sensitization in the sampled counties. Out of the 606 beneficiaries interviewed, only 92 confirmed that awareness Barazas were conducted in their schemes. An analysis of beneficiary responses on awareness creation per county is shown in **Figure 7**.

Figure 7: Analysis of Customers' Responses on Awareness Creation



Source: OAG analysis of beneficiaries' interviews

4.40 The low level of awareness creation was attributed to the fact that not all the schemes were sampled for the sensitization exercise due to shortage of KPLC staff, inadequate planning and ineffective channels of communication. As a result of lack of awareness, some of the beneficiaries did not have information on how to report power outage incidences and hence stayed without power when outages occurred.

C. Inadequate Monitoring and Evaluation of the Project by the Ministry of Energy and Petroleum

4.41 The project appraisal documents indicated that MoEP was responsible for the overall monitoring and review of project progress and for addressing issues that may have hindered timely implementation of the Project. The Ministry was also responsible for the overall coordination and oversight of the Project, including consolidating information from the implementing agencies. Further, the document specifies that site visits were to be conducted to follow up the implementation of project activities. In addition, MoEP was to hire a project coordinator to conduct quarterly monitoring and to consolidate the information prepared by the implementing agencies and report to the Principal Secretary, Ministry of Energy and Petroleum.

4.42 Interviews with MoEP staff and document reviews revealed that monitoring was done as per the Ministry's performance contract targets where monitoring of all

electricity transmission and distribution projects in the country, including LMCP was jointly conducted twice a year. This was carried out by randomly sampling projects which was deemed inadequate as not all project phases were assessed. Further, at any one point, projects were at a different status of implementation and faced project specific challenges that needed to be raised and addressed in a timely manner.

4.43 Inadequate monitoring was attributed to insufficient staff to monitor the Project. The Directorate tasked with monitoring of the Project was organized into six (6) teams of three (3) members each. As at the time of the audit, there were fifty (50) electricity generation, transmission and distribution projects in the Country, which the team could not monitor adequately due to staff shortage.

D. Unreliable Power Supply

4.44 The overall objective of the National Energy Policy, 2018 was to ensure sustainable, adequate, affordable, competitive, secure and reliable supply of energy geared towards meeting the development needs of the Country. It was in line with this objective that the project appraisal documents emphasized that a higher level of electricity service reliability and quality were necessary for stronger economic growth and increased competitiveness. Interviews with LMCP beneficiaries in the sampled counties revealed that they experienced unreliable power supply. Power reliability issues experienced by the beneficiaries included;

i. Faulty Meters

4.45 The contract for the supply of installation materials (transformers, meters, meter accessories, conductors and poles, among others) included provisions for inspection and factory acceptance testing to ascertain that the materials met KPLC specifications. Although KPLC conducted inspection and testing of the supplied goods, field verification revealed that series 544 and 374 had faulty meters. Review of correspondences between KPLC and the supplier of the pre-paid meters revealed that 21,539 meters, representing 7% of the 312,500 meters became faulty either during installation or after brief usage by the beneficiaries. Interviews with beneficiaries revealed that 90 out of the 606 beneficiaries had faulty meters and accessories.

4.46 The faulty meters may have been as a result of supply of suspected low- quality meters and faulty installation leading to damages during power surges. Meter failures resulted in beneficiaries staying without power until a replacement was provided. The sampled beneficiaries stated that replacement took a long time and this exposed them to exploitation by unscrupulous persons who demanded payment in order to replace the meters or reconnect them. It was not possible for the audit team to establish who were responsible for the illegal connections as the affected beneficiaries declined to name them, as well as present evidence of payments done.

ii. Frequent Blackouts and Transformer Breakdowns

4.47 Interviews with beneficiaries revealed that out of the 606 sampled beneficiaries, 453 had experienced power outages averaging 5 times a month. The beneficiaries also indicated that it took on average 48 hours before power was restored. Additionally, 219 out of the 453 beneficiaries stated that they had experienced dimming of lights and inability to power electrical appliances, while 27 reported cases of damaged equipment during power surges.

4.48 Beneficiaries also reported transformer failure that averaged once per year and took an average of 21 days to be repaired or replaced. For instance, a transformer in a Phase I scheme in Kiambu County took an average of four (4) months to be repaired, while another one in a Phase III scheme in Makueni County took approximately 11 months to be replaced.

4.49 The frequent power outages and transformer breakdowns were caused by various factors, including transformer components failure, supply shortfalls like under or over voltage, bad weather and regular service interruptions for maintenance and repair work. Additionally, it could have been caused by an increased number of beneficiaries connected to the transformers, as well as the inadequate maintenance of distribution networks.

4.50 Extended blackouts affected businesses which led to loss of revenue. As a mitigation measure, some entrepreneurs sought alternative sources of power like generators and solar power. Use of alternative power increased the affected beneficiaries' expenses.

E. Other Findings

i. Unrealistic Loan Recovery Period

4.51 Project beneficiaries who opted to pay electricity connectivity fee through Stima Loan were to repay the loan as part of the prepaid tokens. For every purchase, 50% of the amount was to go towards electricity units and the rest towards repaying the loan. The beneficiaries were to repay the Stima Loan over a 3-year period. This translated to a minimum deduction of Ksh.416 per month, which is equivalent to 50% of Ksh. 832. The monthly deduction was done until the loan was fully paid. The connection fee under LMCP was intended to create a revolving fund that was to be used to connect more beneficiaries. As at 30 April, 2022, a total of Ksh.1 billion against a target of Ksh. 11 billion had been collected from the project beneficiaries.

4.52 Data obtained through interviews with beneficiaries revealed that only 10 out of the 606 beneficiaries had paid upfront for electricity connection, while the remaining 596 paid through Stima Loan. Out of the 596 beneficiaries who paid through Stima Loan, only 11% bought electricity token above the expected remittance amount of Ksh.416 per month. This could be attributed to the beneficiaries' low socio-economic status, thereby negatively affecting their purchasing power. **Table 10** shows the monthly expenditure on electricity tokens by the households interviewed.

Table 10: Amount Spent on Electricity Tokens Monthly by Households Sampled

Monthly Household Expenditure on Electricity (Ksh.)	100-200	200-400	400-600	600-800	Above 800	Not Certain
Number of Respondents	139	117	71	22	69	178
Percentage	23%	20%	12%	4%	11%	30%

Source: OAG analysis of information obtained from interviews

ii. Installation of Service Cables to Non-Existent Households

4.53 The Kenya Power and Lighting Company was to extend low voltage network to reach households living within transformer distance of 600 metres. They were to be connected to the distribution line via service cables. Physical verification

revealed instances where KPLC had installed these service cables and meters on parcels of land where the owners were yet to construct houses. The audit established that KPLC erected temporary boards on the parcels of land and mounted electricity meters on the boards. Therefore, the mounted meters were lying idle and were exposed to vandalism. Further, KPLC could not recover the connection fee because there was no power consumption.

4.54 Picture 3 and 4 below shows some of the meters installed on temporary boards.



Picture 3: Service cables erected on parcels of land with non-existing households at Langata estate, Kiambu County



Picture 4: Service cables erected on parcels of land with non-existing households at Korompoi, in Kajiado County

iii. Stolen and Fraudulent Use of Meters

4.55 The audit established that there were several incidences of stolen meters. Such incidences were noted in Mariri Primary School Scheme in Homabay County where 11 meters were reported to have been taken from beneficiaries by persons purporting to be KPLC staff, alleging that the beneficiaries were not purchasing tokens. Upon verification through the KPLC power app, it was established that the meters had been in use elsewhere, still bearing the names of the project beneficiaries.

CHAPTER 5: CONCLUSIONS

- 5.1 The Last Mile Connectivity Project has played a critical role in the distribution and expansion of electricity access to Kenyans. The electricity access rate increased from 32% in 2014 to 76% in May 2021. The Project increased connectivity especially in rural and urban informal settlements areas, where access and affordability had been a major challenge previously. The project has had numerous benefits including; creation of employment opportunities during the implementation stage of the project, unlocking business potential, enabling students to study for extended hours from the comfort of their homes, increased access to information, as well as improved security.
- 5.2 Despite the Project's successes, it did not achieve fully the objective of connecting the targeted 766,173 beneficiaries within the stipulated timelines. As at the time of the audit in April 2022, a total of 683,762 beneficiaries had been connected to electricity, representing 89% of the targeted beneficiaries.
- 5.3 Failure to achieve the targeted connectivity within the stipulated timeline was mainly attributed to delayed implementation of the Project, which resulted in contractors severally requesting for project extensions. This was attributed to: delay in processing tax exemption approvals and import clearance; delay in processing invoices and payment to contractors; court cases, delay in issuance of letters of credit to import materials and wayleave acquisition challenges, among other issues. The Project also experienced delays in meter processing, installation and validation due to slow collection and submission of mandatory documents required for creation of customer records. The slow collection of documents was attributed to inadequate awareness creation to the beneficiaries of the Project.
- 5.4 The audit also established that some beneficiaries experienced unreliable power supply caused by faulty meters and accessories and transformer breakdowns.

CHAPTER 6: RECOMMENDATIONS

6.1 In view of the findings and conclusions of the audit, the following are recommendations for implementation by the Kenya Power and Lighting Company and the Ministry of Energy and Petroleum. To ensure the successful implementation of the remaining phases of the Last Mile Connectivity Project and similar projects in future: -

- i. The Ministry of Energy and Petroleum, KPLC and other stakeholders such as The National Treasury and the Kenya Revenue Authority should coordinate to streamline the tax exemption process in order to minimize delays in delivery of materials;
- ii. The Kenya Power and Lighting Company should ensure adequate planning and effective implementation of the public sensitization process. This will ensure that project beneficiaries are properly sensitized on their roles for successful implementation of the project;
- iii. The Ministry of Energy and Petroleum and KPLC should ensure proper planning for wayleaves, as well as streamline its acquisition process to avoid delays in project implementation;
- iv. The Kenya Power and Lighting Company should ensure that there is appropriate vetting of contractors and suppliers to ascertain their ability to meet contractual requirements;
- v. The Kenya Power and Lighting Company should ensure that there is proper coordination between the responsible departments to ensure timely commissioning of transformers and activation of newly constructed lines;
- vi. The Kenya Power and Lighting Company should ensure timely processing and safe custody of beneficiary documents;

- vii. The Kenya Power and Lighting Company should ensure that the management information system is enhanced to guarantee timely metering process;
- viii. The Kenya Power and Lighting Company should ensure that the metering process is streamlined and specifically, customized for unique projects like the Last Mile Connectivity Project in future; and
- ix. The Ministry of Energy and Petroleum and KPLC should ensure regular maintenance of distribution networks to guarantee quality and reliable power.

APPENDICES

Appendix 1: Documents Reviewed

Documents Reviewed	Information Derived from the Review
The Kenya Vision 2030	The objectives of the Kenya Vision 2030 which includes enhancing and diversifying national power generation and supply by identifying new generation and supply sources. The Kenya Vision 2030 aspires Kenya to have universal access to electricity by the year 2030.
LMCP Consultant Reports	Consultants' reports provided information on project progress, risks and mitigation aspects, challenges and way forward.
The Kenya National Electrification Strategy, 2018	The document highlights the approaches to scaling up connectivity, identifies various least cost technology options and associated investments through interventions required for achieving universal access to electricity in the shortest time possible such as, the Last Mile Connectivity Program.,.
The Energy Act, 2019	The Energy Act, 2019 is the main legal framework on energy sector in Kenya and was enacted to amend and consolidate the law relating to energy. The Act provides for consolidation of laws and regulations that exist relating to the energy sector. It provides for the National Government functions in relation to energy, and further provides for the establishment, powers and functions of the energy sector; and regulation, production, supply and use of electricity.
National Energy Policy, 2018	It establishes the policy direction for the energy sector to accelerate connection, with a view to achieving universal access to electricity. It advocates for affordable, competitive, sustainable and reliable supply of energy at the least cost, in order to achieve the national and county development needs.
Project Appraisal(s) documents	The project appraisal documents outline the project description, design, feasibility, financing and implementation arrangements, legal instruments, as well as timeframes for main milestones. The document also contains the key components/activities against the anticipated outputs, outcomes, impacts, risks/mitigation measures and estimated costs involved.
Loan Agreement(s) for LMCP/Contractual Agreements	The agreements outline the terms and conditions of the loans, including financing, the repayment terms, interest rate, fees and project description. It also indicates the subsidiary loan arrangements.
Project Implementation Schedule(s)	The document describes the project activities from the beginning to completion and related timeliness.
Metering Process Guidelines	Describes the steps/stages of the metering process, the responsibility, timeliness and outputs of each stage.

Documents Reviewed	Information Derived from the Review
Data Management System Manuals /Procedures/Guidelines	They show how data is defined, manipulated, retrieved and managed. It also demonstrates the security/protection and reliability features in the system.
Monitoring and Evaluation Reports	The reports contain details of the monitoring and evaluation networks in place, progress of the project's key output and outcome indicators and timeliness for preventive and corrective measures on the program. The reports further show the frequency and extent of M&E and challenges faced.
Progress Reports	Outlines the extent of implementation and status of targeted components such as customer connectivity (No. of meters installed), length of low voltage distribution line constructed in kilometers, among others.
The Project(s) Completion Reports	Shows whether the project(s) are complete and commissioned, including the dates and further illustrates the depth or quality of works completed.
Staff Establishment	It describes the number, qualifications, distribution, job description and recruitment methods of the staff required.
Customer Records	Customer information such as Kenya Revenue Authority Personal identification number, national identity card, dully filled electricity supply application form and wiring certificates issued by each customer for connectivity purpose and the dates they were issued.
Barazas/ Awareness Creation Reports	Beneficiaries/groups sensitized, methods of sensitization, what they were sensitized on, frequency and dates of sensitization, feedback from the groups sensitized and further arrangements for effective sensitization on the Program. To conclude whether the Project implementers educated the beneficiaries about the Project, their involvement and aspects affecting the them.
Contractual Agreements,	It gives the terms of contract between KPLC and the project contractors and supervisors.
Documentation on Capacity Building/ Training	The document highlights the training plan and the thematic areas to be tackled, the mode of training and who should be trained.
Correspondences and Memos	Provide insights on the nature of coordination among the implementing agencies and other issues like changes in the scope of works.
Minutes of Meetings	The minutes helped in identifying issues discussed that warranted further investigation.
Customer Complaint Reports	The reports helped identify the issues raised by the beneficiaries and the corrective measures taken.

Appendix 2: Interviews Conducted

People Interviewed	Information Derived from the Interviews
Senior management at the Ministry of Energy and Petroleum and the Kenya Power and Lighting Company	Insights on the overall planning, administration and status of connectivity.
Project engineers at the Ministry of Energy and Petroleum and the Kenya Power and Lighting Company	Aspects of customer connectivity/metering, supervision and the coordination of the Project. Interviews were also carried out to gain more understanding on how MoEP carried out monitoring and evaluation of the Project.
Project Consultants	The progress and supervision of the works of customer connectivity.
Contractors	Their day to day operations in the project.
The business development and customer care teams at the Kenya Power and Lighting Company	How they organized and carried out the collection, receipt, handling and processing of beneficiaries' records. In addition, the interviews sought information on how the sensitization Barazas' were undertaken.
Project Beneficiaries	The status of connectivity and the level of awareness among beneficiaries.
ICT Personnel	Understanding of the data management process.

Appendix 3 : Sampled Schemes

County	Phase	Constituency	Scheme Name	Z-Ref (Transformer)	No. of Beneficiaries connected
Nakuru	AFDB I	Njoro	Teret Primary	Z23102016033591	37
			Kawango	Z23102016033513	22
			Gachuhi Market	Z23102016033590	16
	IDA	Rongai	Rafiki Farm	Z23102017032393	32
			Koyumtich Primary	Z21202018040006	56
			Legetio Primary	Z21202018040007	64
	AFDB II	Gilgil	Echariria Centre	Z23102016122713	154
			IDP Kikopey	Z23162019030008	114
			Shinners Boys	Z23162019030018	68
Kakamega	AFDB I	Shinyalu	Shidodo	Z24202016034395	121
			Musembe	Z24202016034344	60
	IDA	Butere	Madenge Shopping Centre	Z24102016122064	123
			Mahondo Market	Z24102016122061	121
			Shibembe	Z24102016122068	122
	AFDB II	Shinyalu	Senyende Primary	Z24312019010025	175
			Shivagala Primary	Z24312019010038	192
			Konzaga Primary	Z24302019010055	113
	Homabay	AFDB I	Rangwe	Wakoteng	Z29422016035190
Simbi Nyaima				Z29422016035203	66
Omoya Primary				Z29422016035199	56
IDA		Ndiwa	Wi Rakuom	Z29102016123078	147
			Bade Boyo	Z29102017055376	101
			Mariri Primary	Z29102016123080	66
AFDB II		Mbita	Sammy Wakeaga	Z29742018120017	78
			Uwii Beach	Z29742019040001	53
			Kiyanja Secondary	Z29742018120001	45
Makueni	AFDB I	Kibwezi West	Katingani Tutini	Z21412016032095	94
			Kwandege Emali	Z21412016033003	51
	IDA	Mbooni	Kavumbu Primary	Z21622018010012	101
			Mathii & Others	Z2162201010016/ Z21102017041042	99

County	Phase	Constituency	Scheme Name	Z-Ref (Transformer)	No. of Beneficiaries connected
	AFDB II	Kaiti	Kiluluini Market	Z21622018100004	82
			Mwaani Residential Market	Z21622018090005	90
Mombasa	AFDB I	Jomvu	Jomvu	Z22102016031407	88
			Mikindani Reinf	Z22102016031409	119
			Kasarani	Z22102016031402	69
	IDA	Likoni	Light Academy	Z22102016122519	171
			Bububu	Z22712021010001	57
			Swaleh Nzaro & Others	Z22162019100004	38
	AFDB II	Kisauni	Kimbunga Primary	Z22112018090004	196
			Nguu Tatu System Reinf	Z22102018090004	245
			Kibokoni Utange	Z22112018090005	91
Kiambu	AFDB I	Kikuyu	Kiriri	Z28702016032687	36
			Dr. Wanene	Z28702016091186	41
			Near Nachu Market	Z28702016091074	41
	IDA	Thika	Baraka Estate	Z25102017102008	103
			Muti wa Mai	Z28852018020028	84
			Langata Estate	Z28132021040001	37
	AFDB II	Githunguri	Tinganga	Z28702018040002	19
			Wanguthu	Z2872201810002	17
		Ruiru	Gikumari	Z28902018040001	34
Nairobi	AFDB I	Embakasi	Joska	Z28702017110025	25
		Kasarani	Acre Tano Kasarani	Z28122019060001	18
		Dagoretti North	Mutuini	Z28712018120001	13
	IDA	Kasarani	Twiger 1	Z21172021050001	395
			Twiger 2	Z21172021050002	

Appendix 4: Detailed Audit Criteria

Audit Questions	Audit Criteria	Source of the Criteria
<p>1. Has the target for construction of distribution networks and installation of the meters been achieved?</p>	<p>Targeted Beneficiaries Phase I- 224,952 Phase II- 205,294 Phase III- 296,416</p> <p>Targeted Number of Transformers Phase I-4,859 Phase II-3,348 Phase III-5,845</p> <p>Initial completion period Phase I -September to November 2017 Phase II -July to October 2019 Phase III -April 2019 to April 2020</p>	<p>Phase I- Quarterly Progress Report, Jan-March 2019 for LMCP, Section 1.3 Scope Variation and Change Order Details</p> <p>Phase II- Quarterly Progress Oct-Dec 2019 LMCP Phase 3, Section 2.1 Summary of Design and Connections</p> <p>Phase III- 14th Quarterly Progress Report- AfDB 2, Apr- June 2021, Section 1.9.1 Survey and Design</p> <p>OAG analysis of contract documents</p>
<p>2. Did KPLC adequately create awareness among beneficiaries on the required documents, buying of tokens, loan recovery and reporting power issues?</p>	<p>There was to be a participatory process for project identification and design. KPLC was to conduct Barazas to sensitize the beneficiaries on the project and explain what was expected from them. In addition, the KPLC Communications Department was to develop a communications campaign to inform the public of project progress. Further, good practice requires that project awareness be conducted before, during and post project implementation.</p>	<p>Phase I-Project Appraisal October 2014 Report, Section 2.6 Participatory process for project identification, design.</p>
<p>3. Was monitoring and evaluation and coordination of the customer connections carried out in an efficient and effective manner?</p>	<p>The Ministry of Energy and Petroleum was to be responsible for the overall monitoring of project progress and for consolidating the progress reports from each implementing agency. The Ministry was to convene quarterly meetings of the implementing agencies to review Project progress and to address issues that may hinder timely implementation of the Project.</p>	<p>International Development Association, Project Appraisal Document on a Proposed Credit, Section v Implementation.</p>
<p>4. Was the electricity supplied to the beneficiaries reliable?</p>	<p>The overall objective of the Energy Policy is to ensure sustainable, adequate, affordable, competitive, secure and reliable supply of energy geared towards meeting the</p>	<p>National Energy Policy, 2018</p> <p>International Development</p>

Audit Questions	Audit Criteria	Source of the Criteria
	development needs of the country. It was in line with this objective that the project appraisal documents emphasized that higher level of electricity service reliability and quality were necessary for stronger economic growth and increased competitiveness.	Association, Project Appraisal Document .

Appendix 5: Project Contractors and Consultants

Lot	Contractors Name	Contract Amount (Ksh.)	Consultant Responsible
Phase I			
1	Gammon India	1,619,076,883	Feedback Infra Private Limited
2	AEE Power	1,609,258,256	
3	RKV Consortium	1,280,506,312	
4	AEE Power	984,925,732	
5	Etrade	888,580,215	
6	Polyphase	361,416,976.	
7	Neo-Electric	991,133,967	
8	Metsec Cables	1,395,045,260	
9	Angelique	305,368,950	
10	Etrade	611,047,269	
Phase II			
1	BES (Europe) Group	USD 11,995,051	Colenco Consulting Limited
2	STEG International Services (Tunisia)	60,642,500	
3	Lukenya Greens Ltd & Shailee Electricals Pvt (India) JV	354,310,298	
4	Hubei Hongyuan Power Engineering Co. China	1361074755	
5	Lukenya Greens Ltd & Shailee Electricals Pvt(India) JV	228,695,159	
6	Larsen & Toubro Limited	1,111,209,560	
Phase III			
1	Giza Cables	408,738,597	Aberdare Engineering Ltd
2	Giza Cables	563,645,056	
3	Bajaj Electricals Ltd/Wayne Homes Ltd	1,019,652,628	
4	Transrail Lighting Ltd	932,318,999	
5	Sinotec Corporation	757,117,864	
6	Esiko Kenya Enterprises/Nari Group Corporation JV	336,683,497	
7	K B Saghani & Colpitt JV	938,486,378	
8	C P Power & Gateway Energy JV	798,852,810	
9	CCC International Nigeria	531,191,055	
10	Camusat & Philafe JV	198,529,191	
11	Meru Wood Industries JV	728,023,040	
12	Nirav & Annihi JV	661,562,900	
13	Burhani Engineers Ltd	550,188,473	
14	Steg International Services	248,359,770	
15	Global Access & CPF JV	507,475,959	

Appendix 6: Project Phases and Expected Outputs

PHASE	COMPONENTS	EXPECTED OUTPUT
Phase I	Component A: Construction of low voltage networks	12,000km
	Component B: Project supervision and management	16 progress reports
	Component C: Capacity building and re-establishment of KPLC tree seedling nursery	20,000 tree seedlings
	Component D: Project audit	-
	Component A: Improvements in Service Delivery and Reliability	Automatic load break switches installed in the Nairobi distribution network in the project area-1000 System installed and in operation
Phase II	Component B: Revenue Protection Program:	Substations added to the SCADA/EMS-146 System installed and in operation.
		Establishment of a modern meter control Centre with satellites
		Installation of AMI meters. - 44,300 meters installed
		Distribution lines constructed or rehabilitated under the project -3500km
		Distribution transformers installed -1000 Transformers installed by KPLC
Phase III	Component D: Technical Assistance and Capacity Building	Mini-grids constructed with public-private participation-6 Mini-Grid constructed by REA and the Private Sector
		Annual electricity output from mini-grids constructed with public-private participation- 2780 Mwh/Yr Annual electricity generated from mini-grids
		Preparation of the National Electrification Strategy
		Implementation by ERC of a regime on service quality
	Component A: Supply of Energy Meters	568,400 meters
	Component B: Construction of low-voltage distribution lines	24,000kms
	Component C: Project Supervision and Management	16 progress reports
	Component D: Capacity Building Program	800 trained by 2020
	Component E: Social Media and Marketing	-

Appendix 7: Detailed Completion Status Per Contractor

Lot	Contractor	Counties	No. of Targeted Beneficiaries	No. of Beneficiaries Connected	% Connectivity
Phase I					
1.	Gammon India Limited	Elgeyo Marakwet, Baringo, Nandi, Uasin Gishu, Trans Nzoia, Turkana, West Pokot	33,854	34,322	101
2.	AEE power S. A	Kisumu, Siaya, Vihiga, Busia, Bungoma, Kakamega	49,287	23,898	61
3.	Rwathia Dist	Homabay, Kisii, Migori, Nyamira, Bomet, Kericho	34,000	40,592	119
4.	AEE power S. A	Narok, Nakuru, Samburu, Nyandarua	22,015	13,502	61
5.	Etrade	Nairobi, Kiambu	1,5137	18,892	125
6.	Polyphase	Mandera, Marsabit, Wajir	7,551	7,637	101
7.	Neo-Electric	Embu, Kirinyaga, Laikipia, Nyeri, Muranga, Meru, Tharaka Nithi, Isiolo	26,449	23,982	91
8.	Metsec	Kajiado, Makueni, Machakos	15,407	15,665	102
9.	Angelique int	Kilifi, Kwale, Mombasa, Taita Taveta	20,358	20,388	100
10.	Etrade	Kitui, Garissa, Lamu, Tana River	10,894	10,882	99
		Total	224,952	209,700	
Phase II					
1.	British Engineering Services	Garissa, Kajiado, Kiambu, Kitui, Machakos, Makueni, Mandera, Nairobi and Wajir	25,255	17,459	69
2.	Steg International Services Limited	Kilifi, Kwale, Lamu, Mombasa, Taita Taveta and Tana River	32,000	28,563	89

Lot	Contractor	Counties	No. of Targeted Beneficiaries	No. of Beneficiaries Connected	% Connectivity
3.	Lukenya Greens Limited and Shailee Electricals Pvt Ltd -Jv	Bungoma, Busia, Homa Bay, Kakamega, Kisii, Kisumu, Migori, Nyamira, Siaya and Vihiga	50,688	42,979	85
4.	Hubei Hongyuan Power Engineering Co. Ltd	Bomet, Kericho, Nakuru, Narok and Nyandarua	36,363	31,024	86
5.	Lukenya Greens Limited and Shailee Electricals Pvt Ltd -Jv	Baringo, Elgeyo Marakwet, Nandi, Trans Nzoia, Turkana, Uasin Gishu and West Pokot	19,006	18,569	98
6.	Larsen & Toubro	Embu, Isiolo, Kirinyaga, Laikipia, Marsabit, Meru, Muranga, Nyeri, Samburu and Tharaka Nithi	41,982	29,496	70
		Total	205,294	168,266	
Phase III					
1.	Giza Cables Limited	Elgeyo Marakwet, Nandi, Uasin Gishu	16,977	17,014	100
2.	Giza Cables Limited	Kisumu, Siaya, Vihiga, Busia, Bungoma, Trans Nzoia, Turkana, West Pokot	24,734	24,805	100
3.	Bajaj Electrical Limited and Weyne Homes Kenya Ltd Jv	Nandi, Kakamega	23,468	27,376	117
4.	Transrail Lighting Limited	Migori, Kisii, Homa Bay	26,880	30,879	115
5.	Sinotec Company Limited	Busia, Kisumu, Slaya, Vihiga	27,251	30,957	114
6.	Esiko/Nari Jv	Bomet, Nyamira	24,792	22,315	90
7.	K. B Shangani & Sons and Colpitt Ltd Joint Venture	Narok, Kericho	23,095	25,206	109

Lot	Contractor	Counties	No. of Targeted Beneficiaries	No. of Beneficiaries Connected	% Connectivity
8.	C.P Power E.A Ltd/Gate Way Clean Energy Africa Ltd Joint Venture	Kiambu, Nyandarua, Muranga	24,088	23,384	97
9.	Ccc International En Gengeering Nigeria Ltd	Samburu, Nakuru, Laikipia, Nyeri	19,156	19,939	104
10.	M/S Camusat Kenya Limited/Philafe Engeneering Limited/Clear Water Industries Ltd Jv	Mandera, Marsabit, Wajir	6,200	7,500	121
11.	Meru Wood Industries Limited/Elegant Construdction Co. Ltd/Hitecs Electrical Contractors and Service Ltd Jv	Isiolo, Meru	15,659	11152	71
12.	Nirav Agencies Ltd and Annihi Creations Enterprises Ltd Jv	Kirinyaga, Embu, Tharaka Nithi	19,580	20,195	103
13.	Burhani E Ngeeneering Ltd	Kajiado, Machakos, Kitui	12,822	12,879	100
14.	Steg International Services Limited	Kwale, Mombasa, Taita Taveta, Makueni	19,320	19,356	100
15.	Global Access Networks Ltd/ Cpf Financial Services Ltd Jv	Kilifi, Lamu, Tana River, Garissa	12,394	12,839	104
	Total		296,416	305,796	

Appendix 8: Contracts Extension Summary

Phase I

Lot No.	Contractor	Effective Date	Initial Completion Date	1 st Extension	2 nd Extension	3 rd Extension	4 th Extension	5 th Extension	Completion Date	Time Period	Project Status
1	Gammon India	30/03/2016	30/09/2017	31/03/2018	30/06/2018	31/12/2018	30/06/2019	30/09/2019	30/09/2019	43	Completed
2	AEE Power	23/03/2016	23/09/2017	31/03/2018	30/06/2018	31/12/2018	30/06/2019	N/A	31/06/2019	40	Disputed
3	RKV Consortium	15/04/2016	15/10/2017	31/03/2018	30/06/2018	31/12/2018	30/06/2019	30/09/2019	30/06/2019	42	Completed
4	AEE Power	30/03/2016	30/09/2017	31/03/2018	30/06/2018	31/12/2018	30/06/2019	N/A	31/09/2019	40	Disputed
5	Etrade	17/05/2016	17/11/2019	31/03/2018	30/06/2018	31/12/2018	30/06/2019	30/09/2019	30/09/2019	41	Completed
6	Polyphase	17/05/2016	17/11/2019	31/03/2018	30/06/2018	31/12/2018	N/A	N/A	31/12/2018	34	Completed
7	Neo-Electric	01/06/2016	30/11/2017	31/03/2018	30/06/2018	31/12/2018	30/06/2019	30/09/2019	30/11/2019	42	Completed
8	Metsec Cables	24/04/2016	24/10/2017	31/03/2018	30/06/2018	31/12/2018	30/06/2019	30/09/2019	30/11/2019	44	Completed
9	Angelique	17/05/2016	17/11/2017	31/03/2018	30/06/2018	31/12/2018	30/06/2019	30/09/2019	31/03/2019	35	Completed
10	Etrade	17/05/2016	17/11/2017	31/03/2018	30/06/2018	31/12/2018	30/06/2019	30/09/2019	30/09/2019	41	Completed

Phase II

No	Name of EPC Contractor	Contract Effective Date	Original Date	Planned Completion Date	Time Period	Project Status
1	BES (Europe) Group	4/06/2020	03/12/2021	04/09/2022	20	Work ongoing
2	STEG International Services (Tunisia)	09/02/2018	30/09/2020	30/09/2022	55	Completed

3	Lukenya Greens Ltd & Shailee Electricals Pvt (India) JV	08/02/2018	30/09/2020	31/12/2021	47	Contract expired on 31/12/2021 Reconciliation and closure ongoing
4	Hubei Hongyuan Power Engineering Co. China	29/01/2018	30/09/2020	30/09/2022	49	Work ongoing
5	Lukenya Greens Ltd & Shailee Electricals Pvt (India) JV	19/01/2018	30/09/2020	31/12/2021	48	Contract expired on 31/12/2021 Reconciliation and closure ongoing
6	Larsen & Toubro Limited	10/06/2021	30/09/2020	30/09/2022	8	Work ongoing

Phase III

Lot No.	Contractor	Effective Date	Contract End Date	1st Extension	2nd Extension	3rd Extension	4th Extension	5th Proposal	Time Period	Project Status
1	Giza Cables	13/03/2018	12/09/2019	02/05/2020	12/12/2020	30/09/2021		31/12/2021	43	Completed
2	Giza Cables	06/06/2018	05/12/2019	05/08/2020	31/03/2021	30/09/2021		31/12/2021	40	Completed
3	Bajaj Eleciricals Ltd/Wayne Homes Ltd	19/09/2018	18/03/2020	18/11/2020	31/03/2021	30/09/2021		31/12/2021	37	Completed
4	Transrail Lighting Ltd	10/04/2018	09/10/2019	09/08/2020	31/03/2021	30/09/2021		31/03/2022	48	Completed
5	Sinotec Corporation	15/10/2018	14/04/2020	14/12/2020	31/03/2021	30/09/2021		31/03/2022	41	Completed
6	Esiko Kenya Enterprises/Nari Group Corporation JV	22/02/2019	22/08/2020	31/03/2021	30/09/2021			31/03/2022	36	Ongoing
7	K B Saghani & Colpitt JV	28/12/2017	21/06/2019	27/02/2020	27/08/2020	31/03/2021	30/09/2021		46	Completed
8	C P Power & Gateway Energy JV	08/01/2018	07/07/2019	06/04/2020	06/11/2020	31/03/2021	30/09/2021	31/03/2022	49	Ongoing
9	CCC International Nigeria	15/10/2018	14/04/2020	14/12/2020	31/03/2021	30/09/2021		31/03/2022	40	Completed
10	Camusat & Philafe JV	20/02/2018	19/04/2019	04/05/2020	04/11/2020	31/03/2021	30/09/2021	31/03/2022	46	Completed

11	Meru Wood Industries JV	08/01/2018	07/08/2019	27/02/2020	27/10/2020	31/03/2021	30/09/2021	31/03/2022	49	Ongoing
12	Nirav & Annihi JV	10/04/2018	09/10/2019	09/06/2020	09/12/2020	31/03/2021	30/09/2021	31/12/2021	42	Completed
13	Burhani Engineers Ltd	28/12/2017	27/06/2019	27/02/2020	28/08/2020	31/03/2021		31/12/2021	40	Completed
14	Steg International Services	15/05/2018	14/11/2019	01/12/2020	31/03/2021	30/09/2021			41	Completed
15	Global Access & CPF JV	08/01/2018	07/07/2019	07/03/2020	07/11/2020	31/03/2021	30/09/2021	31/03/2022	51	Completion

Appendix 9: Sample of Schemes Where Request for Power Switch off to Enable New Line Activation was Delayed

No.	Date Request for Switch off Was Made	Scheme Reference	County	Substation Number	Scheme Type	Date When Switch off was Required	Status of The Request as at 01/10/2021	Duration of Delay Post the Request Date in Months
1	11/2/2021	Z29102017055388	Kisii	39720	Maximization	1/12/2021	Pending	7
2	22/2/2021	Z29102017055404	Kisii	New	New Scheme	3/3/2021	Pending	7
3	22/2/2021	Z29102017055393	Nyamira	New	New Scheme	3/3/2021	Pending	7
4	5/12/2020	Z29102016123238	Nyamira	24377	Maximization	14/1/2021	Pending	9
5	22/2/2021	Z29102017055405	Kisii	New	New Scheme	3/3/2021	Pending	7
6	4/8/2021	Z29102017055384	Kisii	New	New Scheme	13/4/2021	Pending	6
7	1/3/2021	Z29102017055420	Migori	New	New Scheme	12/3/2021	Pending	7
8	8/4/2021	Z24102016122147	Kakamega	New	New Scheme	8/4/2021	Pending	6
9	8/4/2021	Z24102017055372	Bungoma	BGMNT11	New Scheme	16/4/2021	Pending	6
10	8/4/2021	Z24102016122026	Busia	BSBT0202	Maximization	8/4/2021	Pending	6
11	8/4/2021	Z29102017055363	Homa Bay	HMBNT04	New Scheme	8/4/2021	Pending	6
12	28/4/2021	Z24102016122938	Kisumu	KMNT7085	New Scheme	6/5/2021	Pending	5
13	28/4/2021	Z24212018010003	Bungoma	28371	Maximization	28/4/2021	Pending	5

Appendix 10: Response to Audit Findings and Recommendations by the Kenya Power and Lighting Company

Audit Findings	KPLC Response	OAG'S Comments																				
<p>A. Delays in Project Implementation</p> <p>4.7 While the progress report shows a higher project completion status (over 69%) an analysis of the project completion status in the sampled counties revealed instances where completion status was below 69%. For instance, Phase II projects in Homabay and Kakamega Counties were at 48% and 49% respectively as at the time of audit. Other instances were noted in Phase I projects in Nairobi and Nakuru Counties where the completion rates were 25% and 30% respectively. The low completion rate in Nakuru County was partly as a result of the termination of a contract due to the underperformance of the contractor responsible for Lot 4.</p> <p>4.9 The delay in completion of the project resulted in contractors applying for contract extensions up to five (5) times in some cases as shown in Appendix 8. The extension of contracts in turn led to the extension of the consultants' contracts, since they were meant to run for 6 months' post project completion.</p> <p>4.10 The project extensions resulted in additional cost in the form of office space, rent for storage of the materials and transportation costs, consequently increasing the cost of affected contract. This will at the end result in inflation of project costs since the additional costs will be claimed from the project funds by the affected contractors at the completion of the project. In addition, the delay in project completion led to delays in access to electricity by the targeted project beneficiaries.</p>	<p>The contractor implementing Phase II Projects in Homa Bay and Kakamega counties was debarred by the Financier thus affecting the implementation and the low connectivity in the affected areas. To complete the pending works, KPLC has engaged its internal teams.</p> <p>For Phase I Projects in Nairobi there was low connectivity at the time of implementation since most of the targeted customer had already been connected through other initiatives mainly self-funding.</p> <p>Overall, as at end of October 2022 the Last mile Connectivity Project comprising Phase I, II and III had connected at total of 723,910 customer out of the targeted 726,006 customers, representing 99 % connectivity. below.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Project</th> <th style="text-align: center;">Targeted</th> <th style="text-align: center;">Connected</th> <th style="text-align: center;">% Connected</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Phase I</td> <td style="text-align: center;">224,296</td> <td style="text-align: center;">211,478</td> <td style="text-align: center;">94%</td> </tr> <tr> <td style="text-align: center;">Phase II</td> <td style="text-align: center;">296,416</td> <td style="text-align: center;">317,482</td> <td style="text-align: center;">107%</td> </tr> <tr> <td style="text-align: center;">Phase III</td> <td style="text-align: center;">205,294</td> <td style="text-align: center;">194,950</td> <td style="text-align: center;">95%</td> </tr> <tr> <td style="text-align: center;">TOTAL</td> <td style="text-align: center;">726,006</td> <td style="text-align: center;">723,910</td> <td style="text-align: center;">99%</td> </tr> </tbody> </table>	Project	Targeted	Connected	% Connected	Phase I	224,296	211,478	94%	Phase II	296,416	317,482	107%	Phase III	205,294	194,950	95%	TOTAL	726,006	723,910	99%	<ul style="list-style-type: none"> • The finding remains as reported since the debarment happened on June 29 2022. This was after the audit field work. • It is commendable that the project has technically connected all the targeted customers. However, our finding remains as reported as at the time of the audit since the current status can only be validated through
Project	Targeted	Connected	% Connected																			
Phase I	224,296	211,478	94%																			
Phase II	296,416	317,482	107%																			
Phase III	205,294	194,950	95%																			
TOTAL	726,006	723,910	99%																			

Audit Findings	KPLC Response	OAG'S Comments
<p>i. Delay in Processing Tax Exemption Approval & Import Clearance</p> <p>4.12 The Project contractors were allowed to purchase materials both locally and internationally. Upon arrival of the internationally procured materials, the contractors, were required to apply for global and specific tax exemption within 21 days, through KPLC. According to the project consultants, the agreed timeline for issuance of tax exemption was 30 days. However, document review and interviews with project contractors and consultants revealed that this was not executed as expected. There were instances of delays of up to 10 months in acquiring specific and global tax exemption for imported materials.</p> <p>4.13 This could have been occasioned by delays in processing tax exemptions at the various stages of approval at KPLC, Ministry of Energy and Petroleum and the Kenya Ports Authority. This is illustrated by two cases; Lot 14 in Phase III and Lot 2 in Phase II as shown in Table 7</p> <p>4.14 The delays in tax exemptions may have led to delays in timely delivery of materials which subsequently delayed completion of the Project within the contract period. Additionally, these delays resulted in contractors incurring demurrage charges,⁵ consequently increasing the project cost. For instance, the contractor implementing Lot 14 of Phase III incurred demurrage charges amounting to Ksh. 8,740,077 due to delays in obtaining specific exemptions related to the shipment of wooden poles.</p>	<p>Delays in processing Tax Exemption is occasioned by contractors submitting incomplete or erroneous documentation which will require correction before submission to the Ministry of Energy and Petroleum. More often this correction takes time.</p> <p>Besides the above there are other challenges which includes changes of policies, procedures and personnel at the National Treasury and Kenya Revenue Authority.</p> <p>In mitigation, custom bonds were used, process re-engineering and working closely with various stakeholder across the chain.</p> <p>In order to manage the cost, KPLC applied for waivers for Demurrages, Storages cost and Detention charges which were granted on case-by-case basis.</p>	<p>another audit exercise.</p> <ul style="list-style-type: none"> The finding remains as reported since the auditees response presents new information that can only be verified by submission of documents for review.

Audit Findings	KPLC Response	OAG'S Comments
<p>The exemption process took 61 days, from 08 May, 2019 when the goods arrived at the port to 08 July, 2019 when the exemption was issued. In addition, the contractor implementing Lot 3 and Lot 5 of Phase III incurred costs amounting to Ksh. 11,925,142 as a result of a delay of 10 months in obtaining global tax exemption; from when the contract was signed on 09 February, 2018 to when the exemption certificate was issued on 04 December, 2018.</p>		
<p>ii. Delays in Processing Contractors Invoices and Payment</p> <p>4.15 According to the contracts signed between contractors and KPLC, payment was supposed to be made within 60 days after receipt of an invoice. However, interviews and document review revealed that there were delays in processing payment to contractors, with some payments taking more than 60 days, as shown in Table 8.</p> <p>4.16 The delayed payments were occasioned by a lengthy approval process; invoices had to be submitted to KPLC for verification, then to the Ministry of Energy and Petroleum for onward transmission to The National Treasury, before funds were released to KPLC to pay the contractors. The delays were also partly attributed to the requirement that the threshold for invoice processing be pegged at USD 200,000. The number of invoices processed at any one time were therefore many, considering the large value of each contract. Document review revealed that at KPLC and at the Ministry level, a number of invoices took between 37 to 188 days and 114 to 347 days, respectively to be processed and forwarded to the next level. Further, budgetary cuts occasioned by the governments' announcement of austerity measures on its fiscal framework</p>	<p>Payments were affected by the lengthy approval process from the Contractor, Consultant, KPLC, the Ministry of Energy and Petroleum, The National Treasury and the Financier. There have been cases of frequent budget cuts by the National Treasury and delay in release of the budget in IFMIS.</p> <p>The introduction of payment of withholding tax before processing of payment also affected the timely payments. In some cases, contractor submits invoices below the payment thresholds set by the financier.</p> <p>To fastrack the payments, PIT has been continuously following up payment across the various stages and closely liaising with the Ministry of Energy and Petroleum and The National Treasury on the budgeting. For budgeting purposes, the project has been marked as a priority project by the Government.</p>	<ul style="list-style-type: none"> The finding remains as reported.

Audit Findings	KPLC Response	OAG'S Comments
<p>affected disbursement of counterpart funds in Phase I and III. In Phase II, project implementation stalled and lost about 1.5 years of implementation time, due to lack of adequate budgetary allocation.</p> <p>4.17 The delays in payment to contractors affected contractors cash flow and ultimately resulted in slow progress of works. Document reviews revealed that the contractor undertaking Lot 4 in Phase III of the project faced cash flow challenges due to delay in processing of invoices for a period of 10 and 11 months for invoices amounting to USD 1,433,805 and Ksh. 47,100,249 for, respectively. Consequently, this led to application of project extensions by the contractors, in a bid to recover the lost time.</p>		
<p>iii. Delay in Issuance of Letters of Credit for Importation of Materials</p>		<ul style="list-style-type: none"> The finding remains as reported.
<p>4.18 Interviews with project contractors revealed that there were delays in issuance of Letters of Credit (LCs) to Phase II contractors. Phase II of LMCP was to start in 2018 after the initial date was revised from 2015, however during that year, KPLC did not issue LCs to allow contractors to import materials. The delay in issuance of LCs was attributed to delayed funding. Interviews and document reviews revealed that it took up to 12 months before the initial LC was issued, hence no meaningful procurement took place within that period.</p> <p>4.19 The delay in issuance of LC did not only affect the project implementation timelines, but also the project implementation costs on contractors' side.</p>	<p>Payment Terms for supply contracts under Phase II required use of Letters of Credit (LCs). Processing of the LC required that full amount is committed in the budget before the commitment letters are issued by the Financier. This required a budget of about Ksh. 8.0 billion in one financial year. It took time before the budget was availed due to the budgetary constraints at the National Treasury.</p> <p>To mitigate this, PIT negotiated with the contractors to review payment terms to allow direct payment so that they can import goods without issuance of the LCs and be paid on shipment.</p>	

Audit Findings	KPLC Response	OAG'S Comments
<p>iv. Delays due to Wayleave Disputes</p> <p>4.20 Interviews with contractors, consultants and KPLC staff revealed that there were wayleave disputes which delayed the Project implementation. For instance, in Nguu Tatu Scheme, a Phase III site in Mombasa County, the land owner had gone to court to stop the ongoing installations of the poles and lines passing through his land. The contractor could only connect beneficiaries on one side of the transformer that was not under dispute. As at the time of audit, the issue was still in court and the contractor had not recovered the poles and conductors installed on the land.</p> <p>4.21 In Ruai Scheme, a Phase II site in Nairobi County, the contractor had laid the network and installed three transformers ready to connect 265 beneficiaries. However, the site had ownership disputes with allegations of land grabbing. As at the time of the audit, the targeted beneficiaries had been forced out of the land after the site was demolished.</p> <p>4.22 The wayleave disputes could have been avoided if KPLC had verified ownership and sought the owners' consent prior to installation of the infrastructure</p>	<p>Last mile Projects involve extension of low voltage lines and maximization of transformers and did not envisage any wayleave compensation since construction was to be done on road reserves and along land boundaries.</p> <p>Wayleave challenges in Nguu Tatu Scheme in Mombasa County Phase III and Ruai Scheme in Nairobi (Phase II) was as a result of land ownership disputes of the targeted households. The disputes arose when the implementation was ongoing and partly completed.</p> <p>Apart from the few isolated wayleaves incidences there was a smooth implementation of the project across the country.</p>	<ul style="list-style-type: none"> The finding remains as reported since this could have been avoided if KPLC had ascertaining land ownership before connecting the customers.
<p>v. Delay due to Termination of Contract</p> <p>4.23 A contractor, AEE Power, South Africa, had been awarded two contracts under Lot 2 and Lot 4, in Phase I, to connect a total of 62,892 beneficiaries. The contractor was issued with a notice of default and termination due to underperformance on the terms of engagement, leading to works stoppage. The contractor sued KPLC on 28 May, 2019 and as at the time of audit, the contract period had expired, while the court case was still ongoing.</p>	<p>The two contracts are currently undergoing Arbitration after the Contractor contested termination due to non-performance.</p> <p>With the conclusion of the arbitration process, it is envisaged that pending connections will be completed. The financing period has been extended to June 2022 to allow more time complete the pending works after the Arbitration process.</p>	<ul style="list-style-type: none"> The finding remains as reported.

Audit Findings	KPLC Response	OAG'S Comments
<p>vi. Delays in Metering Process</p> <p>4.24 According to KPLC's service charter, it should take 3 days to connect paid up customers requiring a meter connection. For those requiring low voltage extension in addition to the meter it should take 17 days, whereas beneficiaries requiring medium voltage extension and/or transformer installation and a meter, it should take 45 days cumulatively. The Last Mile Connectivity Project did not have defined timelines for meter connection.</p> <p>4.25 Document review and analysis of the customer meter installation timelines for the sampled schemes revealed that the metering process took between 74 and 509 days, as summarized in Table 9. The duration was calculated from the time the customer was allocated a unique reference number, to the first-time they purchased electricity tokens.</p> <p>4.26 The delays in metering were caused by the following factors: -</p> <p>a. Slow Collection and Submission of Customer Documents</p> <p>4.27 Review of documents indicated that there was slow collection and submission of mandatory documents required for creation of customer records, especially the KRA Personal Identification Number (PIN) and contract forms. Interviews with cluster supervisors, contractors and KPLC business development teams revealed that beneficiaries delayed in submission of the requisite documents to facilitate the process of electricity connection. Delay in provision of the documents was as a result of some of the beneficiaries' lacking awareness on the requisite documents to be submitted, to enable them prepare them in advance for submission.</p>	<p>The major cause of delay in the metering process is late or non-submission of necessary documents by the customer to facilitate the contracting of supply. Also, there was inadequate staff to handle large volumes of documentation from the project.</p> <p>In a bid to mitigate this additional staff were provided as well as increased customer awareness and sensitization carried out.</p> <p>Most customers willingly submitted mandatory documents. As part of project implementation procedures, there was site entry meetings to educate and sensitize the targeted households on project requirements and benefits. A few were reluctant to provide the necessary documents, despite having information.</p>	<ul style="list-style-type: none"> • The finding remains as reported. • The finding remains as reported. sensitization was on sample basis and interviews with customers showed that

Audit Findings	KPLC Response	OAG'S Comments
<p>b. Loss of Beneficiaries' Documents</p> <p>4.28 Review of documents revealed that there was loss of customer documents after submission to KPLC offices. Therefore, contractors had to go back to the same sites to collect and re-submit the requisite documents. This resulted in delays in processing customer documents for meter connection. This was attributed to lack of a document tracking mechanism. This delayed the customer contracting process which led to delays in subsequent processes and eventual connection to electricity.</p> <p>c. The Management Information System Downtime delayed the Metering Process</p> <p>4.29 Interviews and document review revealed that there were delays in generation of the unique customer identifiers (Y-refs), digitization and beneficiary contracting in the KPLC Management Information System. The Y-refs were necessary for allocation of meter numbers to beneficiaries. Therefore, delays in generation of the number led to delays in meter collection, installation and validation. The delays in contracting of beneficiaries was due to unreliability of the Facilities Database System (FDB) in terms of system down time. For instance, in Makeni County, the Business Development Officers had to travel to Nairobi, the central office in order to create customer records to enable them meet the set timelines.</p> <p>d. Delay in Commissioning of Transformers</p> <p>4.30 After installation of meters, they required to be validated. Validation required activation of lines and commissioning of both the existing and newly installed transformers. Interviews</p>	<p>Document management to be improved to include independent registers for project documents. Additionally, future electrification works contracts will be customized to include documentation so as ease resource requirement on the part of KPLC.</p> <p>During the project implementation, KPLC migrated from IMS to InCMS. The system has therefore been upgraded and the process re-engineered to accommodate the unique requirements of the project and ultimately improve the system efficiency.</p> <p>The Uwii beach transformer was faulty at the time the contractor completed construction works. The portion of the HT line feeding</p>	<p>many were not sensitized.</p> <p>The findings remain as reported.</p> <p>This is commendable however the finding remains as reported.</p>

Audit Findings	KPLC Response	OAG'S Comments
<p>and documentary reviews revealed that there were delays in commissioning of transformers. For instance, in Uwii Beach Scheme a Phase III site in Homabay County, installation works had been completed as at 30 September, 2021. However, as at the time of the audit, meters had not been activated since the transformer had not been energized and commissioned due to fallen Medium Voltage lines. The beneficiaries list provided by KPLC for field verification indicated that the meters had been activated but physical verification revealed that the beneficiaries had no power.</p> <p>4.31 In Kiluluni Market, a Phase II site in Makueni County, beneficiaries had not been connected to electricity as at the time of the audit. This was despite the contractor having completed the installation works by 20 March, 2021 and a completion certificate issued. The delay in commissioning transformers could have been occasioned by lack of coordination between Project Implementation Team and Operations and Maintenance department.</p>	<p>the transformer was installed by REA (now REREC), and also had some line poles which had fallen and were awaiting repairs by REA.</p> <p>KPLC and REREC has entered into a Service Level Agreement on general network operations which includes LV maintenance and Transformer replacements.</p> <p>Kiluluni transformer was confirmed to be faulty by the Makueni KPLC county team. Upon trouble shooting, it was discovered that the fault occurred due to a tree branch on the HT line. At the time of audit, the incidence had not been reported to any KPLC emergency contact center or Makueni County KPLC emergency office.</p>	<ul style="list-style-type: none"> The finding remains as reported since as at the time of the audit of the field work the customers had no power. The finding remains as reported. The contractor had made a communication in June 2021 which was not acted upon.
<p>vii Other Causes of Delays in the Implementation of the Project</p>		
<p>c. Theft of Materials and Vandalism of Installed Infrastructure</p>		

Audit Findings	KPLC Response	OAG'S Comments
<p>4.34 Interviews with contractors and document reviews revealed that the Project experienced instances of vandalism, both during and after installation. The audit established that there was theft of construction materials like wooden poles, meters, conductors and fittings in sites where construction works were ongoing. For instance, a Lot 3 Phase II contractor highlighted 58 cases where poles, lines and conductors were either stolen or vandalized.</p> <p>4.35 Vandalism after installation was caused by delays in switching-off power supply to enable activation of constructed lines, delays in commissioning of transformers and delays in installation of meters. The affected contractors had to source and replace the stolen or vandalized materials and redo the work, hence slowing down the completion of the Project. Picture 1 and 2 show vandalized electrical installations.</p>	<p>Safety of the materials were the responsibility of the contractors during implementation of the project and until the schemes are commissioned, accepted and handed over.</p> <p>The contractor apart of the construction management should secure the material whether in store or install until such a time is commissioned and taken over by the client. Shut downs are intended to energized the line and might not curb vandalism. some construction materials were reportedly stolen in their stores and at sites during construction. It future projects, KPLC and contractors need to find better ways to mitigate vandalism.</p>	<p>• The finding remains as reported as this was a cause to the delay in implementation of the project.</p>
<p>d. Delays in Switching-off Power to Enable the Activation of New Lines</p> <p>4.36 After installation works were complete, power had to be switched off to allow for activation of the constructed lines. Contractors who were ready to activate new lines would make a written request to KPLC to switch off power on specified dates in order to allow the activation process to be carried out. Document reviews revealed that KPLC delayed in granting the requests to switch off power with some requests taking up to 9 months to be granted. This delayed completion and handing over of the schemes and subsequently made the infrastructure susceptible to vandalism. The delays in shut down was partly caused by lack of coordination between the Operation and Maintenance Department and Project Implementation Team. Appendix 9 shows instances of delay in switching of power.</p>	<p>Delays were primarily experienced in HT lines that had been reported completed by the contractors but upon inspections revealed some snags that required to be cleared before energization. Inspection in some cases were repeated up to five times. The delays should have therefore been counted from the dates when the lines were cleared of defects. As a mitigation measure in future projects, a simple construction monitoring tool that monitors the progress of work that includes contractor's requests as well as status of inspections will be developed and incorporated as part of the project implementation tools.</p>	<p>• The finding remains as reported this was the status as at the time of the audit.</p>

Audit Findings	KPLC Response	OAG'S Comments
<p>B. Inadequate Project Awareness to the Beneficiaries</p> <p>4.38 According to the project appraisal documents, KPLC was to conduct Barazas to sensitize the beneficiaries on the project and explain what was expected of them. In addition, KPLC's Communications Department was to develop a communications campaign to inform the public on the progress of the project. Further, good practice requires that project awareness be conducted before, during and post project implementation.</p> <p>4.39 Interviews with business development teams revealed that KPLC conducted unstructured sensitization in the sampled counties. Out of the 606 beneficiaries interviewed, only 92 stated that awareness barazas were conducted in their schemes.</p> <p>4.40 The low level of awareness creation was attributed to the fact that not all the schemes were sampled for the sensitization exercise due to shortage of KPLC staff, inadequate planning and ineffective channels of communication. As a result, the beneficiaries did not have information on how to report power outage incidences and hence stayed without power when outages occurred.</p>	<p>KPLC has been undertaking continuous customer education and awareness programs targeting the project areas; to educate and sensitize customers on key aspects of project such as terms of connection and purchase of tokens. Several print and electronic adverts were carried out at the inception stage.</p> <p>There were also several stakeholder engagement forums where participants were drawn from various government agencies such as REREC, KENGEN, EPRA, County Governments, Ministry of Energy and Petroleum and other interest groups.</p> <p>As part of the public awareness and being a flagship government project, the President launched it in a national event.</p> <p>The beneficiary identification and site entry meeting was done in consultation with the local community leadership including the Members of National Assembly, Chiefs and Village Elders.</p>	<ul style="list-style-type: none"> Despite the effort in creating awareness, interviews with project beneficiaries revealed low awareness. Therefore, the finding remains as reported.
<p>D. Unreliable Power Supply</p>		

Audit Findings	KPLC Response	OAG'S Comments
<p>4.44 The overall objective of the National Energy Policy, 2018 was to ensure sustainable, adequate, affordable, competitive, secure and reliable supply of energy geared towards meeting the development needs of the Country. It was in line with this objective that the project appraisal documents emphasized that a higher level of electricity service reliability and quality were necessary for stronger economic growth and increased competitiveness. Interviews with LMCP beneficiaries in the sampled counties revealed that they experienced unreliable power supply. Power reliability issues experienced by the beneficiaries included;</p>	<p>This is attributable to aging electricity network and rapid expansion of the LV line which require huge capital investment to refurbish and reinforce. Funding is being sought to revamp the network.</p>	<p>• This will be commendable when actioned however the finding remains as reported.</p>
<p>4.45 i. Faulty Meters The contract for the supply of installation materials (transformers, meters, meter accessories, conductors and poles, among others) included provisions for inspection and factory acceptance testing to ascertain that the materials met KPLC specifications and standards. Although KPLC conducted inspection and testing of the supplied goods, field verification revealed that series 544 and 374 had faulty meters. Review of correspondences between KPLC and the supplier of pre-paid meters revealed that 21,539, representing 7% of the 312,500 meters became faulty either during installation or after brief usage by the beneficiaries. In addition, interviews with beneficiaries revealed that 90 out of the 606 beneficiaries had faulty meters and accessories.</p>	<p>KPLC noted this and contacted the supplier to make good (replace) the meters. As at the time of Audit, the supplier had so far collected 8,492 pieces of faulty meters for repairs/replacement. Additionally, the supplier identified the cause of failure as software related and rolled out a plan to upgrade the software in the already installed meters to forestall future meter failures. At the moment, the manufacturer has collected all the reported faulty meters and has since repaired and returned.</p>	<p>• The finding remains as reported.</p>
<p>4.46 The faulty meters may have been as a result of supply of suspected low-quality meters and faulty installation leading to damages during power surges. Meter failures resulted in beneficiaries staying without power until a replacement was</p>	<p>The reasons for non-vending included the economic capacity by the customers as well as the defects on the CIU interface that were reported in some meters. Following the notifications, KPLC wrote to the contractor to make good the faulty meters in that batch which were totaling to 21,539 and provide a lasting solution. This was in line with the provision in the contract as regards to warranty. To</p>	

Audit Findings	KPLC Response	OAG'S Comments
<p>provided. The sampled beneficiaries stated that replacement took a long time and this exposed them to exploitation by unscrupulous persons who demanded payment in order to replace the meters or reconnect them. It was not possible for the audit team to establish who were responsible for the illegal connections as the affected beneficiaries declined to name them, as well as present evidence of payments done.</p> <p>ii. Frequent Blackouts and Transformer Breakdowns</p> <p>4.47 Interviews with beneficiaries revealed that out of the 606 sampled beneficiaries, 453 had experienced power outages averaging 5 times a month. The beneficiaries also indicated that it took on average 48 hours before power was restored. Additionally, 219 out of 453 beneficiaries stated that they had experienced dimming of lights and inability to power electrical appliances, while 27 reported cases of damaged equipment during power surges.</p> <p>4.48 Beneficiaries also reported transformer failure that averaged once per year and took an average of 21 days to be repaired or replaced. For instance, a transformer in a Phase I scheme in Kiambu County took an average of 4 months to be repaired, while another one in a Phase II scheme in Makueni County took over 11 months to be replaced.</p> <p>4.49 The frequent power outages and transformer breakdowns were caused by various factors, including transformer components failure, supply shortfalls like under or over voltage, bad weather and regular service interruptions for maintenance and repair work. Additionally, it could have been caused by an increased</p>	<p>mitigate on the loss and maintain the customers on supply, KPLC is replacing the meters using its own stock.</p> <p>Efforts are being taken to sustain customer education and inspections to get the remaining meters to vend.</p> <p>Noting that the challenge of faulty is rampant across the country this has prompted the review of meter specification to guarantee long life and forestall tampering.</p> <p>One of the KPLC mandate is grid maintenance so as provide reliable power to its customers. Due to the rapid network expansion, the system has experienced both programmed and non-programmed interruption. Due to inadequate sensitization on the channels of reporting incidences, some customers fail to report the cases to KPLC contact centers.</p> <p>KPLC continues to experience some challenges in transformers that fail under warranty and were installed by REREC. This has been the source of delays in some cases but others were due to lack of transformers in KPLC to facilitate replacements.</p>	<ul style="list-style-type: none"> The finding remains as reported since it was the status as at the time of the audit.

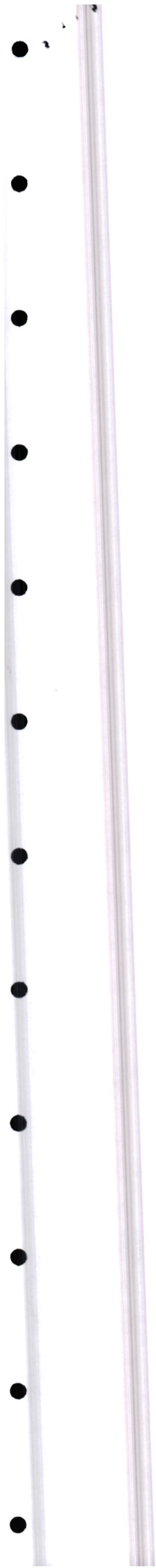
Audit Findings	KPLC Response	OAG'S Comments
<p>number of beneficiaries connected to the transformers, as well as the inadequate maintenance of distribution networks.</p> <p>4.50 Extended blackouts affected businesses which led to loss of revenue. As a mitigation measure to the loss, some entrepreneurs sought alternative sources of power like generators and solar power. Use of alternative power increased the affected beneficiaries' expenses.</p>	<p>KPLC electrical system has embedded protection protocols that are necessary to protect the electrical equipment, as well as the end users. It is therefore sensitive to any form of interruption which is good for public safety. O&M continuously addresses the case by case based on the root causes of interruptions.</p> <p>KPLC continuously does maintenance of its network infrastructure, so as to minimize non-programmed interruptions. Electrical system at times is affected by third party causes like knocking down of poles by vehicles. Some customers at times are affected by depletion of the tokens.</p> <p>KPLC recently, revised specification of transformers to ensure durability and better performance.</p>	
<p>E. Other Findings</p>		
<p>i. Unrealistic Loan Recovery Period</p> <p>4.51 Project beneficiaries who opted to pay electricity connectivity fee through Stima Loan were to repay the loan as part of the prepaid tokens. For every purchase, 50% of the amount was to go towards electricity units and the rest towards repaying the loan. The beneficiaries were to repay the Stima Loan over a 3-year period. This translated to a minimum deduction of Ksh.416 per month, which is equivalent to 50% of Ksh. 832. The monthly deduction was done until the loan was fully paid up. The connection fee under LMCP was intended to create a revolving fund that was to be used to connect more beneficiaries. As at</p>	<p>Under the project, the government was to cater full connection cost and beneficiaries were required to contribute a token of Ksh. 15,000. Initially, the repayment was 36 months however, the monthly repayment was not affordable to most of the households as the project targeted the low-income earners. The percentage method was therefore preferred as it is based on the ability to pay of the customer.</p>	<ul style="list-style-type: none"> The finding remains as reported.

Audit Findings	KPLC Response	OAG'S Comments
<p>30 April, 2022, only Ksh.1 billion against a target of Ksh. 11 billion had been collected from the project beneficiaries.</p> <p>4.52 Data obtained through interviews with beneficiaries revealed that only 10 out of the 606 beneficiaries had paid upfront for electricity connection, while the remaining 596 paid through Stima Loan. Out of the 596 beneficiaries who paid through Stima Loan, only 11% bought electricity token above the expected remittance amount of Ksh. 416 per month. This could be attributed to the beneficiaries' low socio-economic status, thereby negatively affecting their purchasing power. Table 10 shows the monthly expenditure on electricity tokens by the households interviewed.</p>		
<p>ii. Installation of Service Cables to Non-Existent Households</p> <p>4.53 The Kenya Power and Lighting Company was to extend low voltage network to reach households living within transformer distance of 600 meters. They were to be connected to the distribution line via service cables. Physical verification revealed instances where KPLC had installed these service cables and meters on parcels of land where the owners were yet to construct houses. The audit established that KPLC erected temporary boards on the parcels of land and mounted electricity meters on the boards. Therefore, the mounted meters were lying idle and were exposed to vandalism. Further, KPLC could not recover the connection fee because there was no electricity consumption.</p>	<p>The project target was to electrify habitable households within 600M reach of a distribution transformer. Cases of connections to unoccupied and incomplete structures will be handled appropriately.</p>	<ul style="list-style-type: none"> The finding remains as reported.

Audit Findings	KPLC Response	OAG'S Comments
<p>iii. Stolen and Fraudulent Use Meters</p> <p>4.55 The audit established that there were several incidences of stolen meters. Such incidences were noted in Mariri Primary School Scheme in Homabay County where 11 meters were reported to have been taken from beneficiaries by persons purporting to be KPLC staff, alleging that the beneficiaries were not purchasing tokens. Upon verification through the KPLC power app, it was established that the meters had been in use elsewhere, still bearing the names of the project beneficiaries.</p>	<p>This incidence is a theft case and meters are illegally connected. KPLC has a policy on illegal connection, which will address such occurrence.</p>	<ul style="list-style-type: none"> The finding remains as reported.

Audit Recommendation	KPLC Response	OAG's Comments
<p>i. The Ministry of Energy and Petroleum, KPLC and other stakeholders such as The National Treasury and the Kenya Revenue Authority should coordinate to streamline the tax exemption process in order to minimize delays in delivery of materials.</p> <p>ii. The Kenya Power and Lighting Company should ensure adequate planning and effective implementation of the public sensitization process. This will ensure that project beneficiaries are properly sensitized on their roles for successful implementation of the project.</p> <p>iii. The Ministry of Energy and Petroleum and KPLC should ensure proper planning for wayleaves, as well as streamline its acquisition process to avoid delays in project implementation.</p> <p>iv. The Kenya Power and Lighting Company should ensure that there is appropriate vetting of contractors and suppliers to ascertain their ability to meet contractual requirements.</p>	<p>Together with other stakeholders, KPLC will strive to re-engineer tax exemption process to make it more efficient.</p> <p>In future projects public participation and stakeholder management will be undertaken at the beginning of the project. KPLC will include a component of communication and public relation in the project design.</p> <p>During the project initiation wayleave/right of way acquisition will be acquired before commencement of works.</p> <p>Due diligence will be emphasized during on boarding of new contractors.</p>	<p>The proposed action is recommended. However the success of the re-engineering process can only be confirmed in subsequent follow up/ audits. Therefore, our recommendations remain as proposed.</p>

<p>v. The Kenya Power and Lighting Company should ensure that there is proper coordination between the responsible departments to ensure timely commissioning of transformers and activation of newly constructed lines.</p>	<p>Proper coordination and management of commissioning of completed works.</p>
<p>vi. The Kenya Power and Lighting Company should ensure timely processing and safe custody of beneficiary documents.</p>	<p>Enhance customer education and sensitization as well as customization of the works contract to include document collection and processing.</p>
<p>i. The Kenya Power and Lighting Company should ensure that the management information system is enhanced to guarantee timely metering process.</p>	<p>Continuous upgrade of the system to meet the current business needs.</p>
<p>ii. The Kenya Power and Lighting Company should ensure that the metering process is streamlined and specifically, customized for unique projects like the Last Mile Connectivity Project in future.</p>	<p>Process mapping and analysis will be done on the metering process for improvement in modernization.</p>
<p>iii. The Ministry of Energy and Petroleum and KPLC should ensure regular maintenance of distribution networks to guarantee quality and reliable power.</p>	<p>Resource optimization for operation and maintenance work to be undertaken.</p>



CONTACTS

Office of the Auditor-General Kenya

Address: P.O. Box 30084 00100 NAIROBI

Telephone: 254 20 3214000

Email: info@oagkenya.go.ke

Website: www.oagkenya.go.ke



@OAG_Kenya



Office of the Auditor-General Kenya