UNIVERSITY OF NAIROBI

Reduction of Commercial Losses in the Distribution Network Using Automatic Metering Infrastructure (AMI): Case of Kenya Power

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A report submitted in partial fulfillment of the requirements for the award of degree of Master of Science in Energy Management, University of Nairobi.

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Nairobi.

Declaration

A. **Students declaration**

This project is my original work and has not been submitted for any other college or university for academic credit.

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Signature ……………………………………………………………….

Date ………………………………………………………………………

Nick Thomas Kibor F56/83811/2012

B. **Supervisors declaration**

1. I confirm that the above student carried out this research under my supervision as university supervisor

   Signature ……………………………………………………………….

   Date ………………………………………………………………………

   Prof. M. Mbuthia, Project Supervisor

   (Department of Mechanical and Manufacturing Engineering)

2. I confirm that the above student carried out this research under my supervision as university supervisor

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   (Department of Mechanical and Manufacturing Engineering)

Abstract

There are two main types of losses in an electricity distribution network, technical losses and commercial losses. The technical losses can easily be determined based on the parameters of the network and the demand. However, commercial losses – largely made up of power theft – are hard to locate and quantify. The aim of this study was to investigate the use of Automatic Metering Infrastructure (AMI) to locate, quantify and reduce commercial losses in the distribution network of Kenya Power and Lighting Company (KPLC). The study has determined the billing and collection efficiencies, Aggregated Technical and Commercial (AT&C) losses and subsequently the distribution system efficiency.

Data for the study was obtained by extraction of consumption records for 878 consumers from Kenya Power's Integrated Customer System (ICS) in Kapsoya Estate, Uasin Gishu County, North Rift Region of Kenya Power, for a period of 6 months (3 months before introduction of Automatic Metering Infrastructure and 3 months after introduction of the same). Extra data was extracted from the 22 meters used to ring fence the secondary distribution transformers.

Results obtained show that there is substantial improvement in distribution system efficiency, from 75.16% before integration of Automatic Metering Infrastructure to 90.22% after introduction of automatic metering infrastructure. Based on this finding, Kenya Power can utilize its Automatic Meter Reading (AMR) system to ring fence both the distribution feeder lines and transformers to reduce commercial losses.

Acknowledgment

I would like to express my gratitude to the following people who have made this report possible; my family, especially my mother who has been the pillar of my entire educational journey.

More importantly my supervisors: Prof. Mwangi Mbuthia and Dr. Cyrus Wekesa who have been of great help in guiding the direction of this project.

I would also like to thank my colleagues at KPLC who helped in collection and extraction of electricity consumption and load data.

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Abbreviations and notations

AMI	Automatic Metering Infrastructure
AMR	Automatic Meter Reading
AT&C	Aggregated Technical and Commercial
DA	Distribution Automation
EEB	Empresa de Energía de Bogotá
EHV	Extra High Voltage
EIA	Energy Information Administration
ESRP	Energy Sector Recovery Program
FDB	Facility Data Base
FDR	Feeder
GDC	Geothermal Development Corporation
GIS	Geographical Information System
HV	High Voltage
I	Current
ICS	Integrated Customer System
IEA	International Energy Agency
IEEE	Institute of Electrical and Electronics Engineers
IPP	Independent Power Producers
KENGEN	Kenya Electricity Generating Company
KPLC	Kenya Power and Lighting Company
KSh.	Kenya Shillings

kVA	Kilo Volts Ampere
kVAr	Kilo Volts Ampere Reactance
kV	Kilo Volts
kW	Kilo Watt
kWh	Kilo Watt Hour
LV	Low Voltage
MOE	Ministry of Energy
MV	Medium Voltages
NOC	Network Operations Center
PSAF	Power System Analysis Framework
R	Resistance
RAPDRP	Restructured Accelerated Power Development and Reforms Program
SEB	State Energy Board
T&D	Transmission and Distribution
UIU	User Interface Unit
UPPCL	Uttar Pradesh Power Corporation Limited

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CHAPTER 1

1.0. Introduction

1.1. Background

At every stage of electrical energy generation and delivery, metering plays a critical role in providing information on energy transportation and consumption by the end users. It is this information that is very critical to both the consumer and the utility company on how it will be planned, transported, managed and utilized in the most efficient manner.

With the advancement of metering technology available today in the market, it is possible to get more out of them than just measuring the consumed units. Current Automatic Meter Reading and in particular the ones deployed by Kenya Power and Lighting Company (KPLC) has the ability for prepayment facility.

KPLC, the state owned corporation that distributes and retails electric power in Kenya has continually been changing and adopting better utility management practices. One of these transformations is the introduction of the AMR system which has the ability for prepayment services.

Management of domestic electricity consumption has over the years been based on the manual meter readings. This has been giving rise to irregular reading intervals and therefore estimated monthly bills. Moreover, the electricity consumption of all appliances is summed up into one bill which does not allow for differentiation of electricity use within any specific or regular interval. The inaccuracy of the electricity metering system may be limiting the potential opportunity to achieve objectives based around energy efficiency and energy awareness due to this lack of coherent dissemination of energy utilization (Wood and Newborough, 2003) (Gilchrist, 2007).

Although majority of the meters that KPLC has deployed are not smart, they nevertheless, provide the utility company and its customers with the opportunity to use the feature of prepayment to better manage how the electricity is consumed. This will form the core objective of this project, in that it will try to find out if the customers who have been retrofitted with prepaid meters utilize their electrical energy more efficiently than when they were metered with post-paid meters.

The background study acts as a foundation for the next part of the project. One of the findings is that, many utility companies all over the world use some other mechanisms and systems to reduce the commercial losses in their distribution networks. Currently KPLC uses a system called Global Sweeps to identify where energy pilferage might be occurring. This system is erratic, inefficient and is not scientific at all. It relies on luck. Customers are always ahead in devising new ways of stealing electricity.

The problem with the systems and mechanisms used in other countries is that they are expensive to deploy and maintain. KPLC doesn't have that luxury.

Recently, the utility company has installed Automatic Meter Reading (AMR) to replace the old static meters purely to control its debt, by prompting the customers to pay prior to consumption. These AMRs have other functionalities other than management of the utility company's debt, in that they can be used for consumption management (Jarventausta, 2007), outage and quality management as well as network analysis (Kärenlampi, 2011).

This study has the intention of analyzing how AMR system, other than its main function, can be used by both the utility company and the customers to deliver and consume power more efficiently and thereby saving some energy which is of benefit to the utility company and the customers. The functionality of outage and quality management are beyond the scope of this study. This research will be limited to consumption management in general and commercial losses management in particular.

1.2. An overview of the project.

Within this chapter, an overview is given of what is being studied within the master project. Besides this information, the expected results of the study are described, alongside with the description of what should be done with these results. This topic consists of two subtopics; the first one describes what is being studied, and why. The second one describes the method used, expected conclusions and how they can be interpreted.

1.3. Problem statement.

KPLC faces a serious challenge in delivery of reliable and quality supply to its customers. One of the major challenges is the lack of sufficient power to distribute. The total demand of the country nearly outstrips the installed capacity. Currently the total demand is approximately 1570MW against the installed capacity of 2295MW [KPLC, 2015].

It must be realized against this backdrop that the commercial energy losses is included in the total demand. Therefore if the losses were to be minimized or eliminated altogether, more capacity will be availed for uptake by more customers without the need for putting up more generation for them.

This study investigates the use of Automatic Metering Infrastructure (AMI) to locate, quantify and reduce commercial losses in a distribution network.

1.4. What is precisely being researched on and why?

The description is given on what is being studied in the project. It will be in three parts; part one describes the objective of the project, followed by the benefit of the research and lastly the prior research that has been done on this field and how this research will differ.

1.5. Objective of the project

The overall objective of this study is to investigate the use of automatic metering infrastructure to locate, quantify and reduce commercial losses in a distribution network. Specific objectives of the study involved:

i). Obtain consumption data for a selected group of customers before and after introduction of AMR

ii). Determine billing and collection efficiencies

iii). Compute aggregated technical and commercial losses

iv). Establish distribution system efficiency

v). Simulate a load flow for the Kapsoya 11kV feeder.

1.6. Benefits of the research

The results and conclusion that will be obtained and made from this research, will give KPLC a clear road map in the development of a system with the highest usability and scalability that can be deployed to effectively manage and reduce the commercial losses in its distribution network.

More importantly, using the existing Automatic Metering Infrastructure to do more than just billing will be of benefit to the utility company. As mentioned earlier this could lead to a boost in the quality of supply to the customers and improved distribution efficiency for the company.

Another benefit is related to the models documentation. Because of this research, the power utility company should be able to remain in further research and development of the reduction of commercial losses of its distribution network. If these systems are nonexistent, then the utility company will not be able to avail power most of the time, or if it does, it will be at a higher cost hence low customer satisfaction and reduced profitability.

1.7. What are the conclusions?

The conclusions of this research should lead to the most suitable ways and processes for reducing commercial losses in the distribution network at KPLC. More importantly the results that will be obtained will form the basis and foundation for argument in convincing the utility company to realize the need to invest more in distribution automation, so as to increase the system efficiency.

CHAPTER 2

2.0. Commercial Losses and the Concept of Ring fencing in an electrical network

2.1. Electricity in Kenya: A sector in peril.

According to (Davidson, 2005), the worldwide gross installed power generation increased from 3000GW to 3750GW in the year 2000. This generation capacity stood at 5549GW in the year 2014 (EIA, 2014) as illustrated by Figure 2.1.

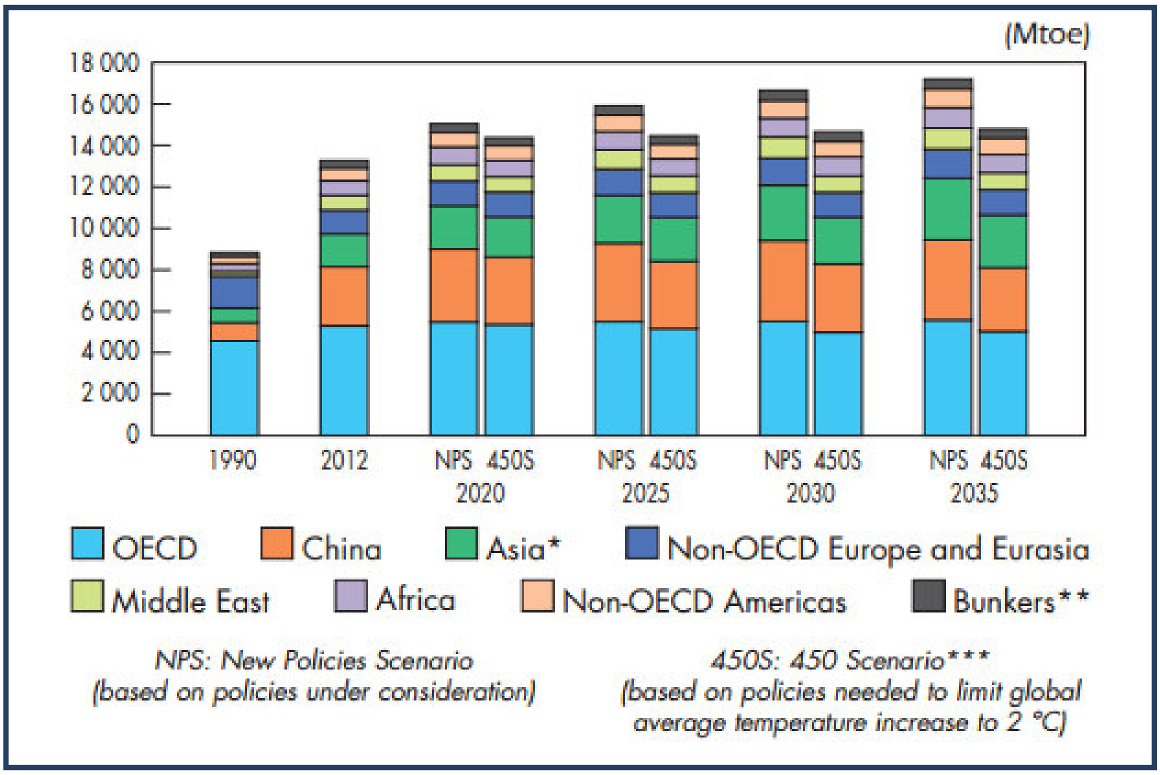


Figure 2.1: Global Electricity consumption- Source IEA, 2013

Most of the future increase will be in developing world. At a coverage of 15% of the earth's land area, Africa has 13% of the world's population but consumes just 3% of this installed capacity. Africa as a whole accounts for 2% of the global industrial capacity. Africa has an installed generation capacity of approximately 103GW.

The Kenyan economy relies heavily on its energy intensive manufacturing industry. Therefore, electricity plays a very critical role in Kenya's economy. However, its installed capacity of 2.3GW is not enough to meet the ever increasing demand for electricity, more so with the discovery of crude oil in the northern part of the country. It is expected that there will be significant increase in electricity demand by 2020, when oil production will be expected to have started.

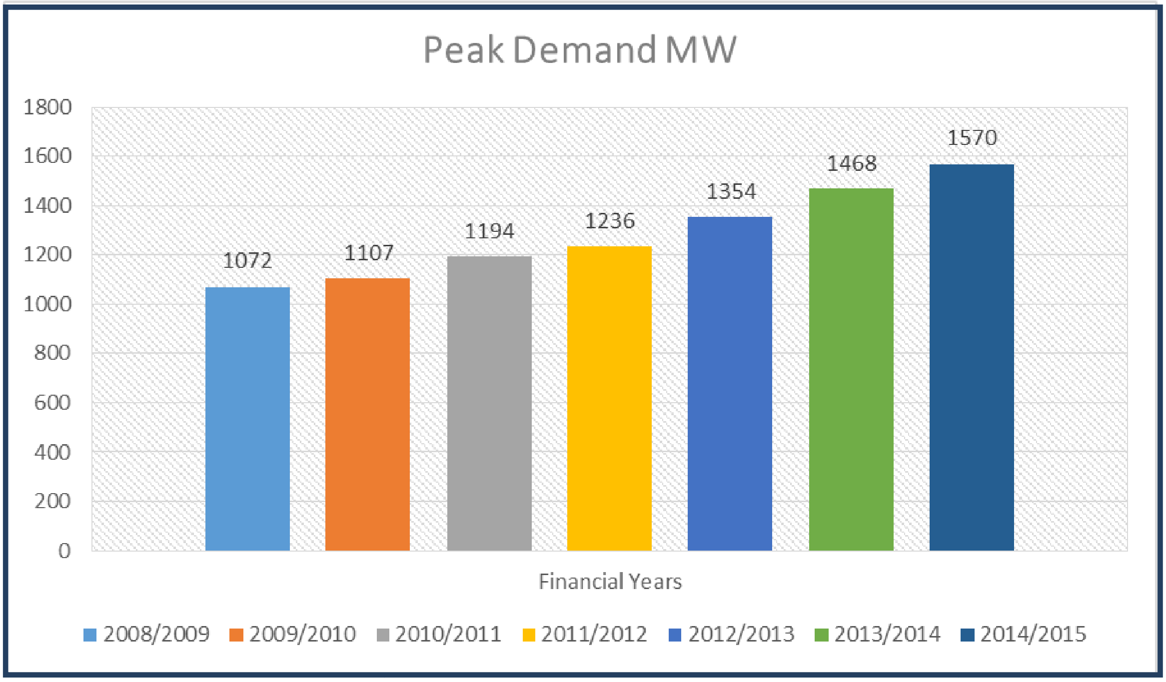


Figure 2.2. Kenya's Electricity Peak Demand: Source, KPLC, 2015

Currently, the peak demand is approximately 1570MW as is illustrated by Figure 2.2. This significant demand requires a significant expansion in generation, transmission and distribution infrastructure.

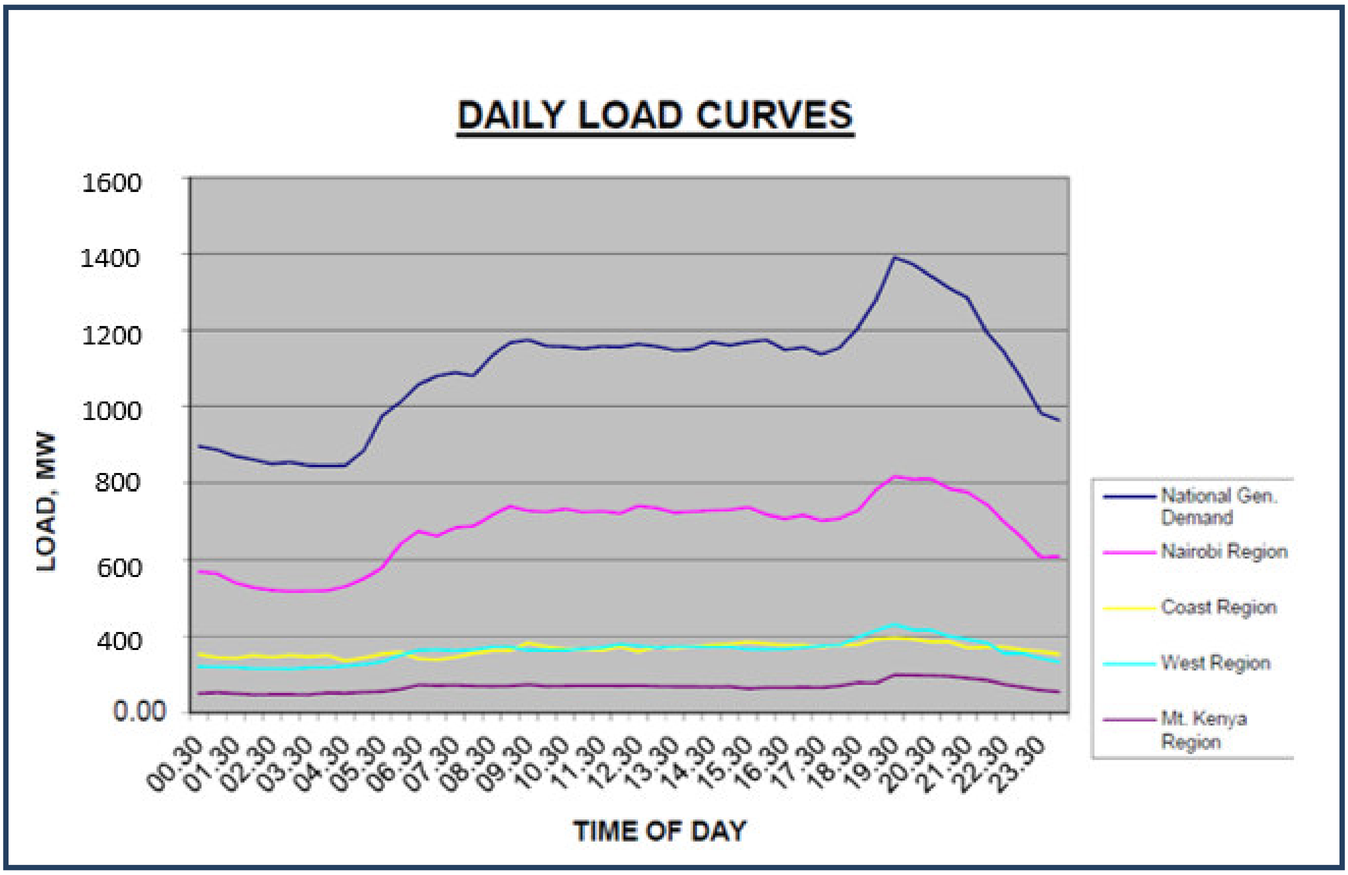


Figure 2.3: Daily Load Curves- 20th April 2013: Source, NCC, KPLC.

The demand for residential consumers of electricity varies by time of the day. Since the household occupancy varies substantially throughout the day can explain why the consumer behavior consequently changes in tandem. End users of electricity vary throughout the day. It therefore implies that different demand curves are appropriate as value of electricity use varies over different time periods. This is illustrated by Figure 2.3.

Sometimes, demand for electricity becomes exceptionally high or, for other reasons, there is not enough electricity generation to maintain the needed operating reserves. Therefore, this presents a challenge that at the peak of the curve, reserve capacity is so diminished that the utility company is forced many a times to shed off some of the load.

If an S- curve phenomenon is assumed in the electricity demand growth in Kenya, by 2020 it could be anything between 6 to 8GW. Currently, there are slightly over 3 million customers as demonstrated by Figure 2.4 and the utility company is connecting new consumers to the national grid at the rate of 300,000 per year. This not only diminishes the installed capacity but increases the frequency of electricity losses along the delivery highway.

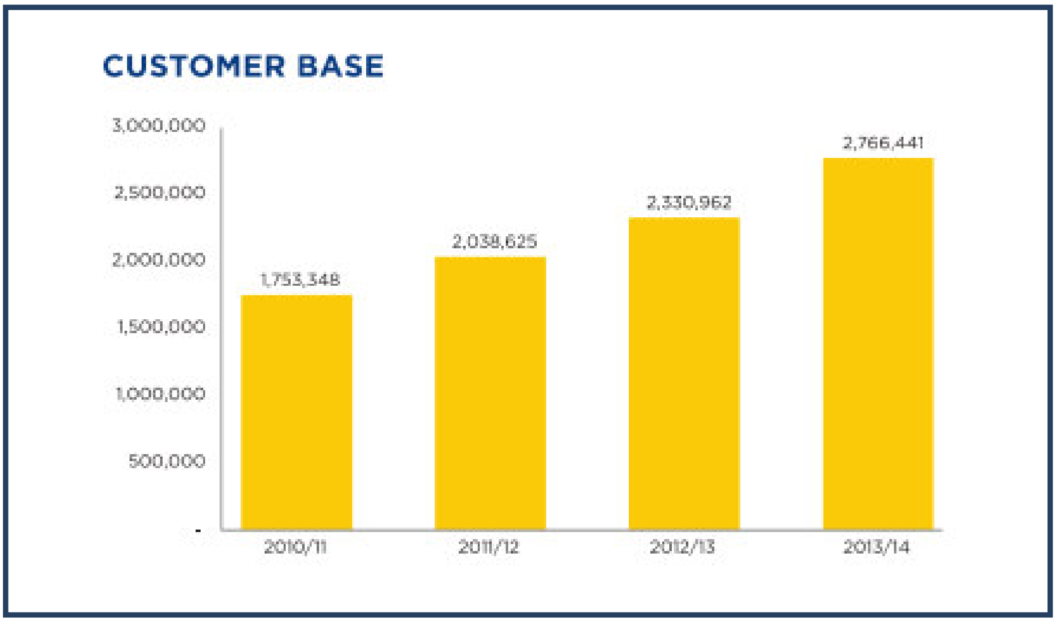


Figure 2.4: Electricity Consumers growth in Kenya: Source, KPLC, 2014

In the recent past years Kenya has been experiencing a shortfall of affordable electricity due to several reasons; majorly drought, high cost petroleum fuel and the escalating cost of credit. Kenya's installed capacity is 1.8851GW as demonstrated by Table 2.1. KENGEN, GDC and other generators are currently putting up new power generation stations which are expected to inject extra 5GW to the National Grid by year 2017.

Table 2.1: Table of electricity generation mix in Kenya

Electricity Generation mix in Kenya (kW)							
	Hydro	Geothermal	Thermal	Co-gen	Wind	Total	Proportion
KenGen	770	150	236	-	5.1	1,161.1	65.1%
IPPs	-	91	386	26	-	503	28.2%
Emergency	-	-	120	-	-	120	6.7%
Total	**770**	**241**	**741**	**26**	**5.1**	**1885.1**	**100%**
Contribution	**43.18%**	**13.51%**	**41.55%**	**1.45%**	**0.29%**	**100%**	

Source: Ministry of Energy and Petroleum 2013

In as much as putting up new generating plants, the elephant in the room will always remain; system efficiency of 82.7% in both the transmission and distribution networks. As per the Annual reports of KPLC (2012) AT &C losses amounts to 17.3%.

Over a period of time, the warning signs for trouble have prominently manifested themselves. KPLC has not sufficiently invested in upgrading and uprating its distribution infrastructure. Not only has the maintenance of most of the equipment been lacking or programs are behind schedule, but there has been an upward trend of consumption of unmetered electricity.

The demand for electricity has tremendously increased in the recent past, and it seems it will probably continue to do so due to increased and improved economic environment, strategic and deliberate blue prints like Vision 2030 being undertaken and implemented by the Kenyan Government and the neighboring countries. However, the investments which increase the electricity demand have not matched the rate of expansion of the distribution network. As a result, the problem of power rationing is quite prevalent.

To mitigate the problem, KPLC has contracted Independent Power Producers (IPPs) to procure emergency power which is generated using petroleum fuels. This power is becoming increasingly expensive because of the volatile cost of the fuel. This has translated to an all-time high mean price of electricity of 0.27$/kWh; which is quite expensive for the Kenyan living standards.

2.2. Generation and Delivery of Electricity

Figure 2.5 shows a topology of generation and delivery of electricity to consumption points. In Kenya, generation and delivery of electricity have been unbundled and each function is undertaken by independent utility companies. KENGEN and IPPs do the generation part. KETRACO and KPLC transmit the electricity to various load points. Finally, KPLC does the distribution part of it.

Electricity is generated through various modes namely hydro, geothermal, wind, solar and fuel. It is generated at between 11 and 15kV. Since the electricity is consumed most of the time at different points and far off from where it is generated, it is stepped up to both 132kV and 220kV for onward transmission.

The High Voltage (HV) transmission lines deliver electricity from various generation sources to the primary substations, where electricity voltage is stepped down to 66kV, 33kV, 11kV, 415V and 240V and taken onwards through the distribution network to individual consumption points. As the power is transported from points of generation to consumption, part of it will be lost on the way and is termed as system losses.

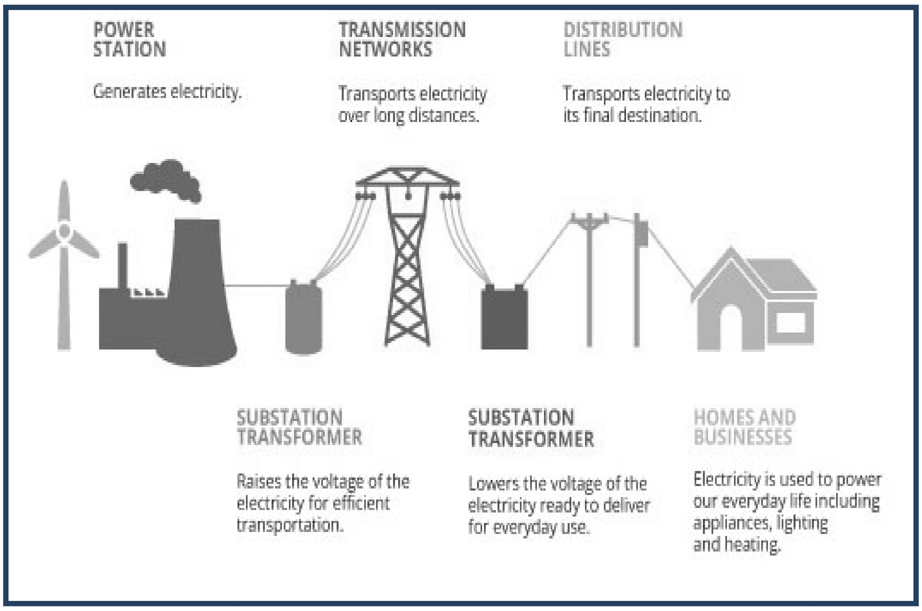


Figure 2.5: Generation and delivery of Electricity

2.3. Aggregated Technical and Commercial Losses in Power Systems.

Losses that occur in an electrical system can be termed as the Aggregated Technical and Commercial; AT&C losses. It is important to take into account this parameter because it paints a realistic picture of the energy and revenue loss situation in a utility company. It comprises of two elements: technical and commercial (Saadat, 2010).

According to annual reports (KPLC, 2012) 17.3% of the energy generated is lost along the transmission and distribution networks without being sold.

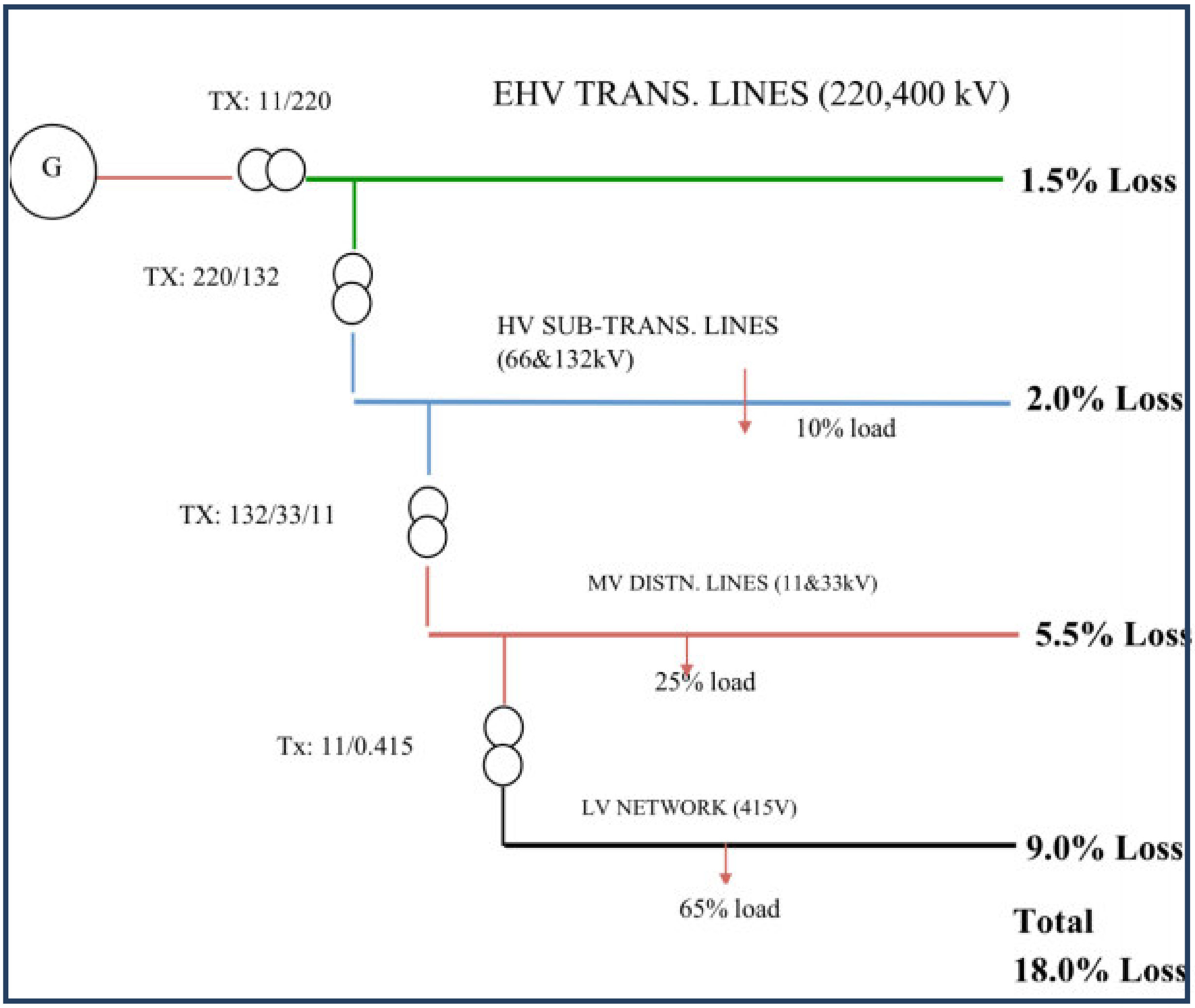


Figure 2.6: Simplified Transmission and Distribution System Diagram

As illustrated in Figure 2.6, The losses that occur on EHV Transmission lines is 1.5% of the total power transmitted. 2.0% of the total power is lost on the HV sub –Transmission lines. On the MV distribution lines, 5.5% of total power is lost; whereas 9% losses of the total power occurs on the LV network of the system.

Distribution losses constitute more than 80% of the total losses. Therefore, since the distribution losses constitute a big portion of the total losses it would be prudent to interrogate the efficiency of the power network and eliminate them as much as possible. The major handicap is that the differentiation between technical and commercial losses is not easily or at all known in the distribution network (Guymard, 2012).

This problem is not unique to KPLC alone, but prevalent in most of the Sub-Sahara African utility companies apart from South Africa and Botswana. Generation and transmission losses can be accurately measured and they are normally low, but distribution losses are hard to quantify and they are not accurately known.

2.3.1. Technical losses

Essentially, technical losses are largely brought about by transformation losses at various transformation levels. The physical nature of the equipment and infrastructure of power systems, i.e. copper losses- I^2R in conductors, cables, transformers, switches and generators also contribute a lot to the losses. The level of technical losses varies with type of conductors and cables used, transformation capacity of transformers and reactive loads. The technical losses in a power system is normally calculated based on the physical properties of its components: resistance, reactance, capacitance, voltage, current and power. It is routinely calculated by utility companies as a way to specify what components will be added to the system (Suriyamongkol, 2002).

2.3.2. Commercial Losses

The power sector, more so in the developing countries is plagued by mounting losses due to various inefficiencies; colossal commercial and technical losses. The shortages brought about by these losses have very detrimental effects on the overall economic growth of a country. According to (Singh, 2009), commercial losses can be defined as any consumed energy or service which is not billed because of failure of measurement equipment or ill-intentioned and fraudulent manipulation of the said equipment. Therefore, detection of commercial losses includes detection of fraudulent users with the sole objective of eliminating them.

The commercial losses is the component of distribution system losses that is not related to the physical characteristics and functions of electrical system. They are difficult to quantify and they occur independently of technical losses in the power system. According to (Suriyamongkol, 2002), commercial losses are caused primarily by human error, whether intentional or not. They include the electric energy lost due to:

- Pilferage and theft of energy
- Tampering of meters
- Deficiencies in metering and billing system
- Unmetered supply
- Lack of energy accounting

Of particular interest to KPLC and which contributes tremendously to the commercial losses are the load losses due to pilferage. Some of the common modes for illegal abstraction or consumption are given below:

- Making illegal extension
- Tampering with the meter readings
- Willful burning of meters
- Changing the sequence of terminal wiring
- By passing the meter
- Changing CT ratio and reducing recording
- Errors in meter reading and recording
- Improper testing and calibration of meters.

2.3.2.1. Electricity theft

Electricity theft can be defined as a conscious attempt by a person to minimize or eliminate the amount of money the consumer ought to pay the utility for electric energy consumed. This could range from tampering with the meter to create false information used in billings to making unauthorized connections to the power grid according to (Singh, 2009).

Majority of utility companies and industry sources concur that the main component of commercial losses in a electricity, water, fuel and gas distribution systems are, meter tampering, meter malfunction, illegal connections and non-payments (World Bank,1999).

Figure 2.7, illustrates a meter which has been tampered with. The neutral terminal has been disconnected. The meter coils rotation is slowed by 58.2% its normal speed. Therefore it only records 41.8% of the actual power consumption.

Figure 2.7: A photograph showing a tempered energy meter.

KPLC is not an exception, electricity theft and nonpayment of bills has reached astronomical levels, which if left unchecked could easily cripple the operations of the utility company. As per the annual reports, (KPLC, 2012) as at the end of financial year 2012, the total bill arrears stood at a staggering figure of KSh. 8 Billion.

2.4. Management of electrical losses

According to (MOE, 2013) and as illustrated by Table 2.1, 41.55% of installed capacity is generated using thermal means. KPLC is not in control of the prices of the fossil fuels; therefore it is disadvantaged in setting the unit cost of electricity in that it cannot increase the selling price of electricity although the buying price keeps on increasing.

The management of electrical losses would present an enormous opportunity to save the utility company some financial difficulties. Indeed 17.3% of electricity generated is lost through transmission and distribution networks which according to any standards is quite high.

There is a concurrence by the industry experts that the accepted range for losses in developing countries is between 15-16% (EDF, 2010) (PRISME, 2011). This is still regarded high when compared with 6.5% for France and 7.2% for Sweden (Nation Master, 2013) (G. Launey, 2013).

Although in reality, there is no utility company in the world which has a distribution efficiency of 100%, it is imperative that KPLC can avail more capacity of a theoretical 308.5MW by reducing or eliminating its losses. This is a colossal amount of power that could cost millions of dollars to build the infrastructure that will generate it. Currently, there is no single plant that generates that amount of power in the country. According to the industry experts (EDF, 2011) averagely it is 3 times less expensive to spare 1kWh by reducing losses and by improving the overall efficiency than investing in a new means to produce the 1kWh.

2.4.1. Current Situation: Global sweeps

Like any other utility business, electricity network operations involves a lot of decision making at various points and levels. The subject of decision making normally vary a lot. For example, deciding where, when and how to carry out a typical global sweep. For any decision to achieve its intended goal there must be data to be relied on to arrive at it. The quality of initial data is crucial for decision making. In general, data with poor quality or lack of it lead to a poor decision choice.

According to (McNurling et al. 2009) human beings are actively subjective in making decisions. The decision made may be informed, for example by power, incentives and ambiguity. The human's capacity to process information is significantly limited and affected by stress and the need to meet timelines. The ability to define their objectives and their preferences greatly affects their decision making.

KPLC is not an exception. Normally the decisions, especially in network operation are often made based on employees' intuition and educated guesses. The main reason is the lack of better knowledge since there is a lot of data available which can be processed into information and can further be used to support decision making process.

As discussed earlier in this report, consumption of unmetered electricity in KPLC is quite prevalent and the company knows about it. But there is no scientific or systematic way of pinpointing where, when and how it is happening. It currently relies on a chancing mechanism internally known as Global Sweeps.

The meters are grouped and arranged in an order known as itineraries, essentially for ease of reading and billing. Therefore, once in a while when it is felt or suspected that there might be theft in such an itinerary, a blind sweep is carried on it with the hope that such theft will be netted.

The success of such exercise depends largely on the element of surprise on the potential thief rather than an informed decision. However, in many a times these pre-planned sweeps are leaked by the personnel who are in the know how. Most of the times, these sweeps normally return blanks.

2.5. The Concept of Ring Fencing

Put simply, ring fencing can be said to be accounting for and audit of the energy in a power system. One of the critical inputs for improved planning of the distribution systems is acquisition and recording of load flow data. The load flow data at all interface points provides critical information which normally assists in proper diagnosis of problems in the system and provides better ways on usage of electricity. Therefore, an energy accounting and audit system is essential for prioritization of specific projects under various schemes like ESRP, DA and other system improvement programs.

With the adoption of AMR, it is possible to actively monitor the status of the grid. Installation of meters with the ability of AMR, not only in the customer's premises but also higher up in the distribution network allows the utility companies to collect real time information on the status and the integrity of the grid (Korhonen, 2012).

If we make the secondary distribution transformer the focal point, it is possible to account for the units of the energy dispensed by the transformer against those consumed by individual customers connected to the particular transformer. In a nutshell if by use of Equation 2.1, the transformer is metered and input and output units accounted for as shown in the Figure 2.6, then units dispensed from it can be dimmed to have been ring fenced.

$$y = \varphi 1 + \varphi 2 + \varphi 3 + \varphi 4 \tag{2.1}$$

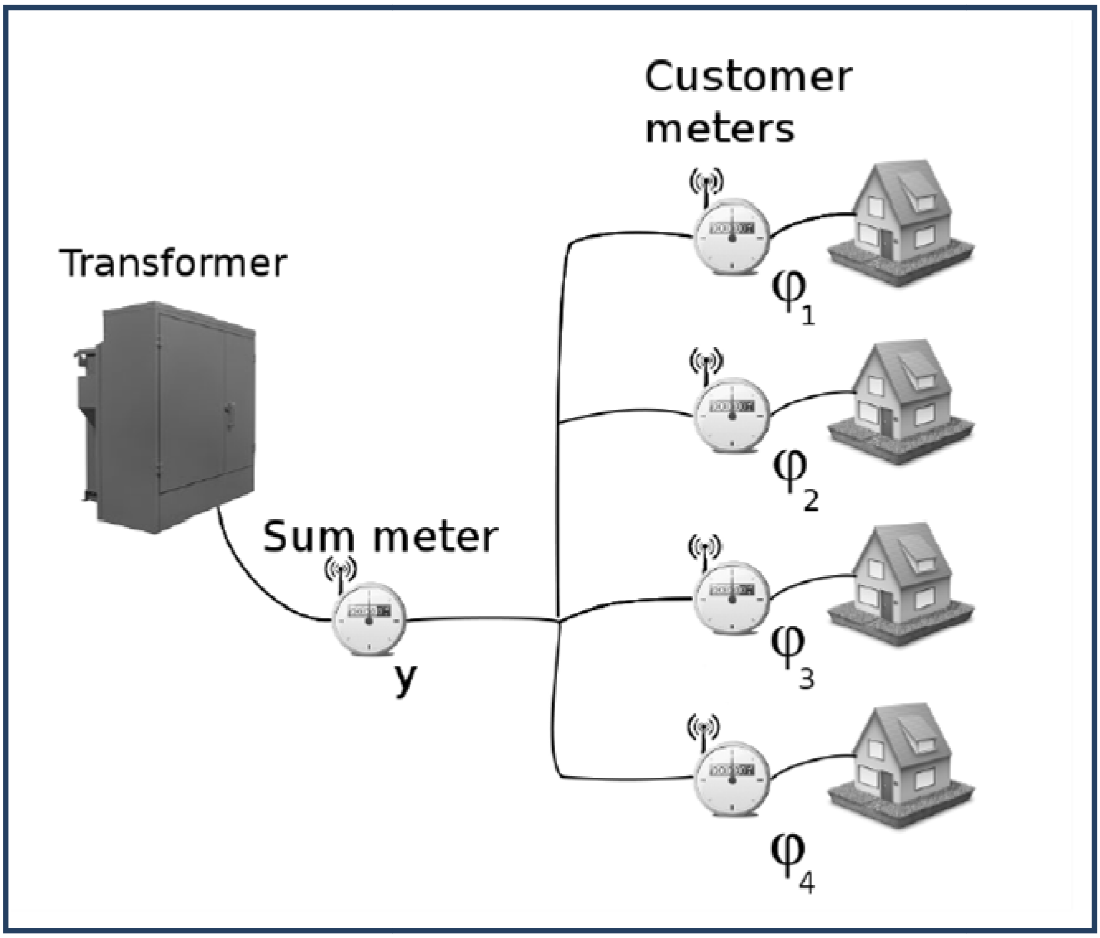


Figure 2.8: Configuration of electricity meters

2.6. Metering as a system

Energy metering commenced with the start of distribution of electricity. At inception electricity was primarily used for lighting. At the time of billing the customers for the electricity consumed, the utility company would count the number of bulbs that customer had and bill him/her based on the number of bulbs (Lamphier, 1925). The customers at that point in time were not getting value for their money since there was a likelihood of overbilling. Therefore there arose the need to find a way of accurately measuring the energy consumed; and the Watt- hour meter was born.

As the power networks expanded in size and the advancement of information technology, there grew the need to incorporate it into the energy metering system. Therefore, the metering technology has evolved over time from the rudimentary Watt-hour meter to the quite advanced smart meters available in the market today.

Metering plays a very critical role in generation, evacuation and delivery of power to the consumers. It provides an avenue where information on how much energy a customer consumes and the pattern of consumption. This information is critical to both the consumer and the utility company generating and delivering the power.

2.6.1. Automatic Metering Reading System in KPLC

Automatic Meter Reading is a remote collection of consumption data from consumers' utility meters by use of either radio frequency, packet, satellite and power lines communication technologies. AMR provides water, gas and electric utility- service companies the opportunity to increase operational efficiency, improve customer service, reduce data collection costs and quickly gather critical information that provides insight to decision making (Garcia, 2012).

It combines the mechanical rotary type counter with its related technologies, such as advanced control, wireless digital communication, sensor embedded system and database management system. It displays the amount of energy that has been consumed (Derbel, 2008), (Goh, 2003).

Until recently KPLC was using the static meters to measure the electric energy consumed by its customers. When it decided to adopt the Automatic Meter Reading, it procured both that has the feature of pre and post payment.

The meters with the prepaid feature were installed for the small domestic and commercial customers. They were installed primarily to enable the utility company to collect its debt since this category of customers has to pay prior to consuming the energy. Unfortunately, the meters don't have any communication ability with any central server. The only communication is between the User Interface Unit (UIU) and the meter which is installed either on the terminal pole for the stand alone premises or on a central metering panel for units of flats or apartments.

Large power customers have been provided with the smart meters that have got a communication channel and are connected to a central server. Normally, these meters are postpaid because of the amount of units that the customers consume in a billing cycle. Not only are they used to meter large power customers, they are also used to meter all the distribution feeders and currently being rolled out to meter the distribution transformers.

2.6.2. Usage of AMR in managing commercial losses: A hope for KPLC

KPLC like any other business concern is struggling with a bulging uncollected debt and poor distribution system efficiency. These factors are enormously affecting the cash flow in the company since KPLC pays in advance for the power procured from the power generators. In 2010, KPLC introduced the Automatic Meter Reading system with the main emphasis being the prepayment feature of the system for small domestic and commercial customers. This cluster of customers forms the majority of the customer base. It also retrofitted all the large power meters with the smart ones.

The prepayment feature of the meters presented an opportunity to the utility company to collect payments of electricity bills by its customers before they utilize it. Apart from managing the debt of customers, this feature gave the customer an opportunity to control his/her consumption. Definitely when customers pay for the services in advance before utilizing it, they tend to use less power than when they were paying after the services have been rendered. This will result in the customer managing his/her power more prudently and efficiently. The customer will actually use less for more and thereby saving some power (Kozlova, 2012) (Venables, 2007).

This project seeks to find out if this power savings by the use of AMI is significant enough and cumulatively can lower the total demand and with the ultimate goal of improving the efficiency of the distribution network.

The total consumption of electricity in Kenya has steadily been increasing as represented by Figure 2.9. This can be attributed largely to increased electricity infrastructural development and the general economic growth.

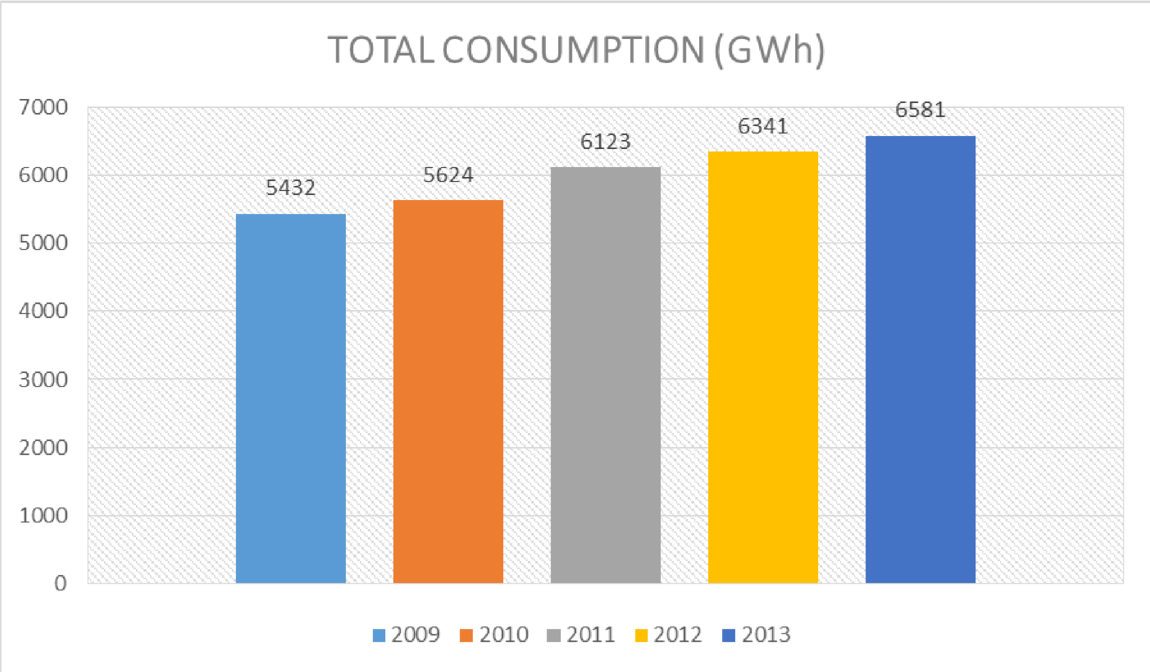


Figure 2.9: Total Electricity consumption in Kenya: Source, KPLC, 2014

2.6.3. Usage of AMI by other Utility Companies to manage Losses

Wide afield, other power distribution companies have demonstrated that, AMI can be used to investigate and control the commercial losses on their distribution networks. The most successful distribution companies that have used the methodology are in the developing countries of South America and Asia.

2.6.3.1. Uttar Pradesh Power Corporation Limited (UPPCL)

Uttar Pradesh Power Corporation is the utility company mandated to distribute and retail electricity in the state of Uttar Pradesh, India. The company is owned by State Energy Board (SEB) of Uttar Pradesh. Like other SEBs in India, it has high level of distribution losses. In the Financial Year 2010 - 2011, the overall AT&C for India was 26.15%. Uttar Pradesh, had the highest AT&C of 40.8% (Mohanty et al, 2013).

In the year 2010, the Indian Government with the various SEBs introduced a program called Restructured Accelerated Power Development and Reforms Program (RAPDRP). The overall objective of the program was to reduce the AT&C losses by 15% in a period of 5 years; 2010-2015.

The program was divided into two parts; A and B. The objective of part A were:

- Develop baseline data for the program
- Consumer indexing
- GIS mapping
- Metering of Feeders and Distribution Transformers
- Replacement of electromagnetic meters with AMR meters
- Adoption of IT applications for meter reading, billing and collection
- Energy accounting and auditing

Part B of the program was mainly to reduce the technical losses, and the main objectives were:

- Renovation of MV distribution lines
- Load bifurcation
- Feeder splitting and optimization
- Replacement of bare conductors with aerial bunched conductor in densely populated areas.

In the Financial Year 2014-2015, the AT&C losses for UPPCL was 27.66% (UPPCL, 2015). It is estimated that for the Financial Year 2015-2016, the AT&C would be 26.66% which compares well with the target for the overall objective of the program.

Therefore, by using AMI, to ring - fence its feeders and distribution transformers, UPPCL demonstrated that it reduced the AT&C losses by 14.14% in its distribution network, in the period of 5 years.

2.6.3.2. CODENSA, Bogota

The company is partly owned by Enersis Group which operates other electricity distribution companies in Argentina, Peru, Chile and Brazil in South America.

It is mandated to distribute and retail electricity in Bogota, the capital city of Colombia. It was created in 1998 when the integrated electricity company Empresa de Energía de Bogotá (EEB) was unbundled to generation, transmission, distribution and retails subsectors.

At the time of the unbundling, the AT&C losses of CODENSA was 22%. The major contributor of these losses were; illegal connections, unmetered supplies and uncollected revenue occasioned by the political instability and cartels involved in drug trafficking.

Because of the know-how and experience it had gained from successful reduction of AT&C losses in similar markets of Argentina, Chile, Peru and Brazil (Antmann, 2009), the company deployed the AMI. The system was able to segment the customers and sector the geographical area served. The system was able to provide the integral metering management, accurate reading, billing, collection, disconnection – reconnection and inspection of meters. Consequently, by the year 2007, the AT&C losses had significantly reduced from 22% in 1998 to 9%.

2.7. Load Flow Study

A load flow study is a steady state analysis whose target is to establish the voltages, currents and real and reactive power flows in a system under a given load conditions (Ghosh et al, 1999). The purpose of load flow studies is to plan ahead and account for various hypothetical situations. For example, if an equipment, like a transmission line in the network is to be taken off line for maintenance, can the remaining equipment in the system handle the required load without exceeding their rated values (Mekhamer et al, 2002).

The basic load flow study equation is derived from nodal analysis equations for the power system. Taking an example of a 4 – bus system, the load flow analysis equation is given as follows:

$$\begin{bmatrix} Y_{11} & Y_{12} & Y_{13} & Y_{14} \\ Y_{21} & Y_{22} & Y_{23} & Y_{24} \\ Y_{31} & Y_{32} & Y_{33} & Y_{34} \\ Y_{41} & Y_{42} & Y_{43} & Y_{44} \end{bmatrix} \begin{bmatrix} V_1 \\ V_2 \\ V_3 \\ V_4 \end{bmatrix} = \begin{bmatrix} I_1 \\ I_2 \\ I_3 \\ I_4 \end{bmatrix} \tag{2.2}$$

Where $\boldsymbol{Y_{ij}}$ are the elements of the bus admittance matrix, $\boldsymbol{V_i}$ are the bus voltages, and $\boldsymbol{I_i}$ are the currents injected at each node. The node equation at the bus can then be written as follows:

$$\boldsymbol{I_i} = \sum_{j=1}^{n} \boldsymbol{Y_{ij} V_j} \tag{2.3}$$

The relationship between per unit real and reactive power supplied to the system at bus $\boldsymbol{i}$ and the per unit current injected into the system at that bus:

$$S_i = V_i \, I_i^* \; = P_i +_j Q_i \tag{2.4}$$

Where $\boldsymbol{V_i}$ is the per unit voltage at the bus; $\boldsymbol{I_i^*}$ is the complex conjugate of the per unit current injected at the bus; $\boldsymbol{P_i}$ and $\boldsymbol{Q_i}$ are the real and reactive powers of the network. Therefore,

$$I_i^* = P_i +_j Q_i / V_i \; \rightarrow I_i = (P_i -_j Q_i)/V_i^* \tag{2.5}$$

$$\rightarrow \; P_i -_j Q_i = V_i^* \sum_{j=1}^{n} \boldsymbol{Y_{ij} V_j} = \sum_{j=1}^{n} \boldsymbol{Y_{ij} V_j} \, V_i^*$$

By letting

$$\boldsymbol{Y_{ij}} = \left|\boldsymbol{Y_{ij}}\right| \angle \boldsymbol{\theta_{ij}}$$

And

$$\boldsymbol{V_i} = \left|\boldsymbol{V_i}\right| \angle \boldsymbol{\delta_i}$$

Then

$$P_i -_j Q_i = \sum_{j=1}^{n} \left|\boldsymbol{Y_{ij}}\right| \left|\boldsymbol{V_j}\right| \left|\boldsymbol{V_i}\right| \angle (\boldsymbol{\theta_{ij}} + \boldsymbol{\delta_j} - \boldsymbol{\delta_i})$$

Hence

$$P_i = \sum_{j=1}^{n} |Y_{ij}||V_j|\,|V_i| cos(\theta_{ij} + \delta_j - \delta_i) \quad \textbf{(2.6)}$$

And

$$Q_i = -\sum_{j=1}^{n} |Y_{ij}||V_j|\,|V_i| sin(\theta_{ij} + \delta_j - \delta_i) \quad \textbf{(2.7)}$$

There are four variables that are associated with each bus:

P- Real power

Q- Reactive power

V- Voltage magnitude

δ- Voltage angle

Meanwhile, there are two power flow equations associated with each bus. According to (Srinivas, 1999) in a load flow study, two of the four variables are defined and the other two are unknown. That way, there are the same numbers of equations as the number of the unknown. The known and unknown variables depend on the type of the bus. Each bus in a power system can be classified as one of the three types.

i. Load bus (P-Q bus) - a bus at which the real and reactive powers are specified, and for which the bus voltage will be calculated. All buses having no generators are load buses. In here, V and δ is the unknown.

ii. Generator bus (P-V bus) - a bus at which the magnitude of the voltage is defined and is kept constant by adjusting the field current of a synchronous generator. Real power generation is assigned for each generator according to economic dispAT&Ch. Q and δ are the unknown on this bus.

iii. Slack (swing bus) - a specified generator bus serving as the reference bus. Its voltage is assumed to be fixed in both magnitude and phase. P and Q are the unknown parameters.

It was necessary to carry out a simple load flow study of the Kapsoya 11kV distribution feeder line in order to ascertain that the electrical power is economically transferred over the system network with the maximum efficiency and reliability at constant voltage and frequency to consumers. A model of the distribution feeder network was done, where the value of real and reactive powers and voltage magnitudes were obtained.

To overcome the computational problems of power flow solution using load flow iterative techniques; Newton – Raphson and Gauss Seidel, a model of the Kapsoya 11kV Feeder was established. The model is based on real data that represent the real conditions of the network. The network is then simulated using the network study, analyzing and management software Power Systems Analyzing Framework (PSAF).

By simulating the model, the expected results can be observed at every point of interest. The modelling and simulation of the distribution network on PSAF are conducted with the main objective of establishing the voltage profiles and technical losses on the 11kV and LV feeders.

CHAPTER 3

3.0. Research Methodology

This chapter details out the methodology that was used to establish AT&C losses level as a whole for Kapsoya 11kV Distribution Feeder. The feeder primarily serves Kapsoya Estate in Uasin Gishu County**.**

3.1. General Approach.

In order to investigate the AT&C losses on Kapsoya 11kV feeder, a model of the distribution network was developed. The model was then studied and analyzed so as meet the objective of the project. Primary and secondary data was used for analyzing and developing the model of the study. Primary data was obtained from field readings and measurements of the load data.

Meanwhile secondary data was obtained from official consumption records, Kenya Power and Lighting Limited Annual reports and KPLC customer database. There are 22 secondary distribution transformers on the feeder and 878 consumers represented by respective account numbers. The process that was followed was:

- Establish the AT & C losses before ring fencing of the 22 secondary distribution transformers.
- Determine the AT & C losses after ring fencing of the 22 secondary distribution transformers.
- Simulate a load flow for the Kapsoya 11kV distribution feeder.
- Obtain technical losses for the Kapsoya 11kV distribution feeder.

Technical losses for the MV distribution network was obtained just to establish the general overview of the performance of the network. Otherwise, at both stages i.e. before ring fencing and after of the secondary distribution transformers, the Technical Losses will remain the same and cancel out. Therefore, it is possible to detect any change in the commercial losses.

3.2. The Project Area

The project area was chosen primarily because the static postpaid meters in there had recently been retrofitted with prepaid AMR meters. These prepaid meters were installed to primarily manage the consumption debt. Therefore, by using this system for more than what it was intended for was very attractive and worth researching on it. Also the project area is served exclusively by the feeder, hence there is no need for installing export and import meters to the project area which subsequently simplifies the methodology and makes it cheaper.

Additionally, the composition of the population in the area is substantially varied both socially and economically. Therefore, the results that were obtained would provide a more valid conclusion. More importantly, there have been inconsistences on what the meter feeder installed at the takeoff recorded and the summation of consumption units of the project area. This pointed to the fact that there were some power losses resulting from meter bypasses and meter tempering.

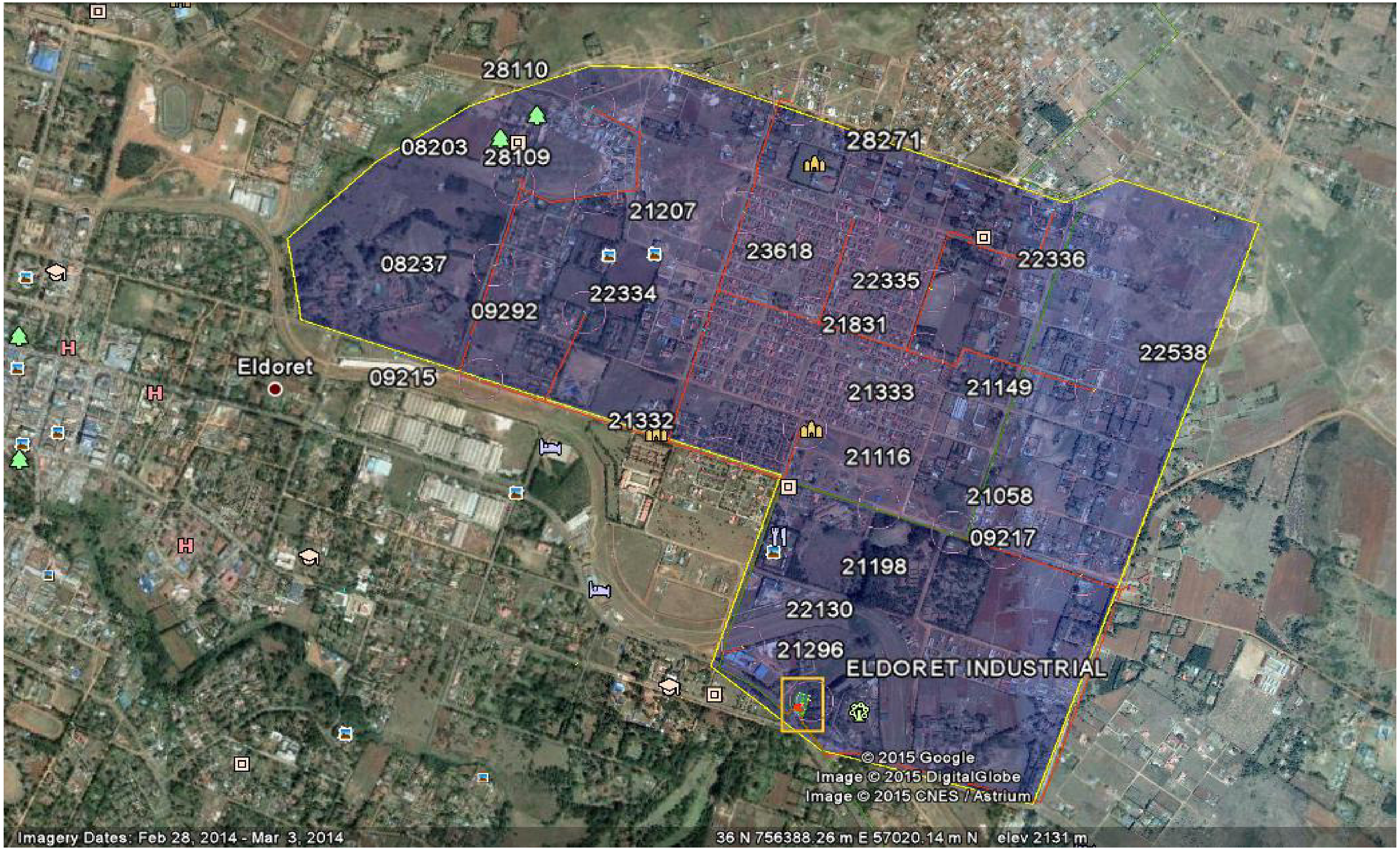


Fig 3.1: Project Area Kapsoya. Source, Google Earth, 2014.

3.3. Recent research on this field.

Recent research by (Kärenlampi, 2010), (Suriyamongkol, 2002), (Korhonen, 2012) and (Guymard, 2012) on this field of optimizing on the use of AMI with the view of reduction of commercial losses in an electrical network, greatly helped to distill and crystalize the method used for this research. The fact that they have done their research on this field still leaves room to fuse the two areas, commercial losses and AMI. This project was intended to explore the possibility of making the most of the AMI other than what is being used for or has been researched on before. Therefore, ideas were not started from the scratch but were built on what had been done before.

3.4. Data source.

The primary source of the data for this research was field measurements and recording. Whereas, the secondary data was extracted from the consumption records stored in Integrated Customer System (ICS) and Itron systems of KPLC. The consumption data of 878 customers when they were metered on postpaid metering was extracted. Thereafter, the consumption for the same customers after ring fencing of the secondary distribution transformers is collected and analyzed to contextualize the relationship between the two scenarios.

3.5. Prerequisites

There are pre-requisites which are needed to be in place so that the results of the study can remain valid both before ring fencing of the secondary distribution transformers and after. Some of these conditions are:

3.5.1. Metering of Energy input to project area

It is necessary that energy input points of the projects areas' electrical network are metered. These meters have to be installed on all such points so that the same can accurately be read. It is preferred that the meters with the ability of being read remotely be installed.

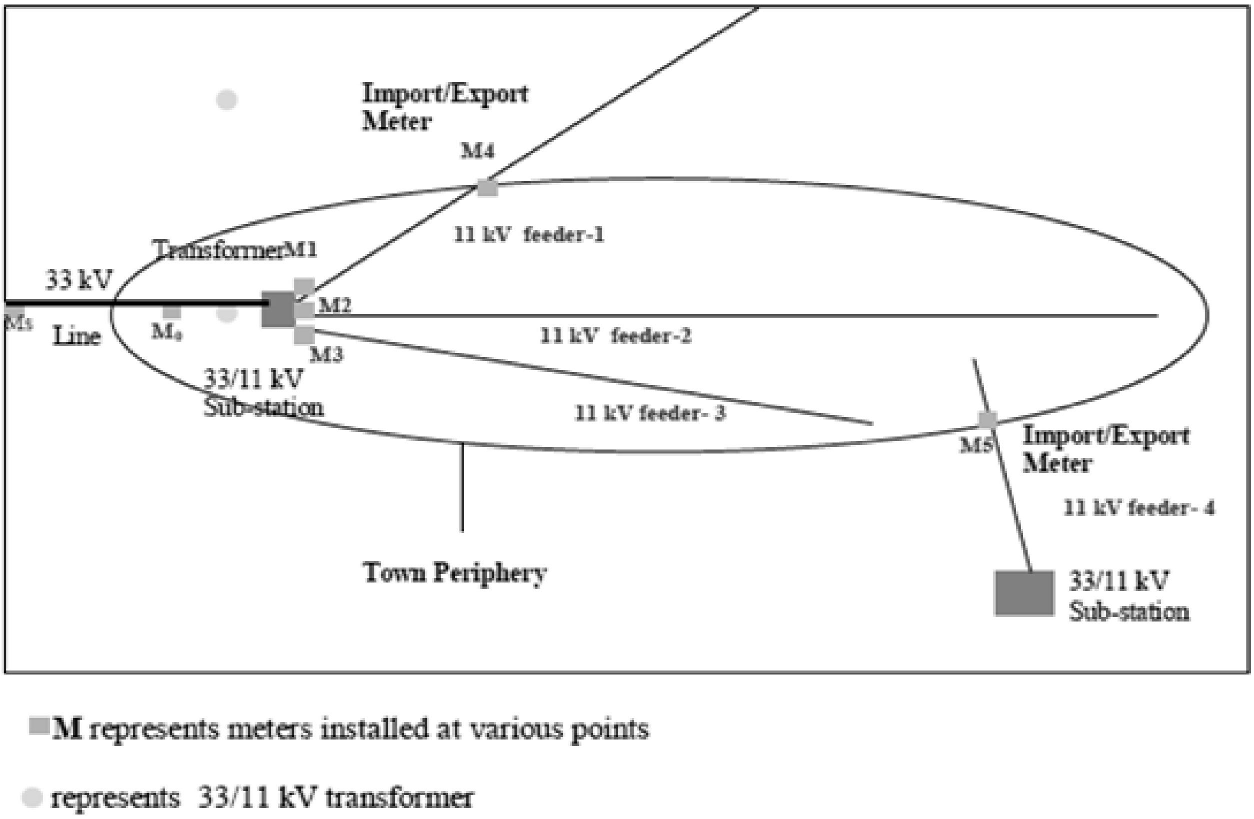


Figure 3.2: Metering of the energy input and output points of the project area

KPLC has metered all its feeder lines with AMR meters. Therefore, for success of this project AMR meters were installed on the individual secondary distribution transformers on the feeder line. And luckily, the project area is served entirely by one feeder and it does not go beyond the project area. Therefore, there was no need to install an export meter to measure the energy carried by the feeder beyond the project area.

3.5.2. Ring fencing the secondary distribution transformers of the project area.

The next pre-requisite was to electrically ring fence the secondary distribution transformers on the feeder. It was done primarily to measure the net input energy i.e. the variance of energy entering into every secondary distribution transformer and the consumption of customers connected to that particular transformer of the project area by installing secondary distribution transformers AMR meters and customer prepaid meters.

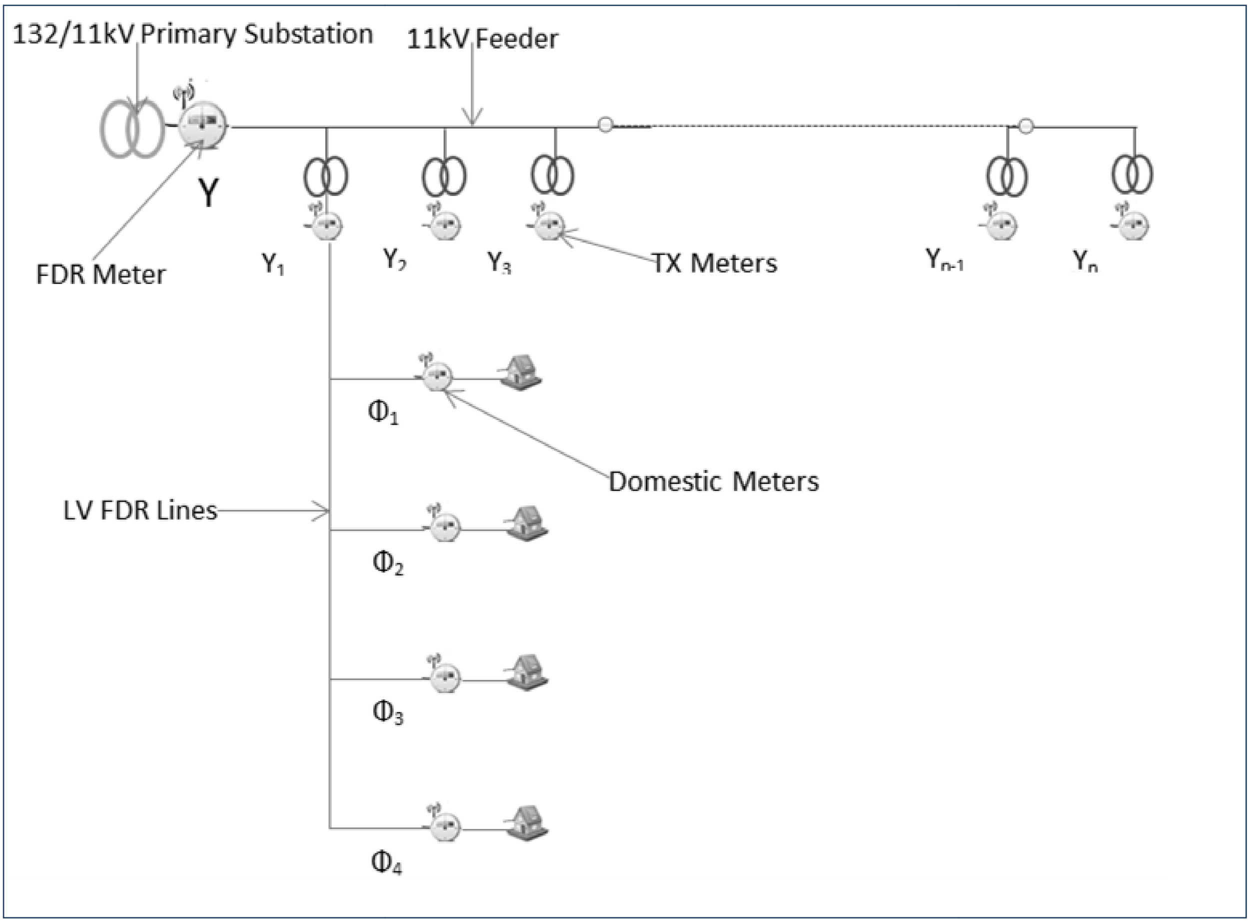


Figure 3.3: Metering the Secondary Distribution Transformers and the Feeder.

3.6. Billing and Revenue Collection System.

The billing system is preferred because it has the capability to provide data like sales, revenue billed and collected for the entire project area.

Normally under the prevailing system in utilities, billing system is designed in such a way that sales data can be extracted for the 11/33kV feeder or for the distribution center as a whole. This data may include sales which may have happened outside the project area.

In such cases it would be necessary to make provisions to account for the sales happenings outside the project area. Similarly by extracting the data for revenue billed and collected within and outside project area necessary provisions in billing systems and shall be required to be made by the utility company.

3.6.1. Computation of input energy

Electricity in Kenya is distributed in both 33kV and 11kV feeder lines and immediately after transformations/step down are low voltage distribution lines of 415 and 240V and services lines. The choice of which lines to use primarily depends on the population size of the area to be supplied, the distance from primary substation and the load of the supply points.

Before the ring fencing of secondary distribution transformers, the total energy consumption of the project area was measured using the already existing AMR meter on the takeoff of the feeder at the primary substation. The chosen feeder for this project exclusively servers the project area. Therefore, the meter at the input point of the feeder was read at an interval of one month for three billing cycles.

After the ring fencing of the transformers by use of AMR meters, the input energy to the secondary distribution transformers is measured. Also, the individual customer consumption units are extracted for the prepaid meters connected to the particular secondary transformers for an interval of one month and for the three billing cycles.

3.6.2. Computation of Sales

As it has been mentioned earlier, for the total energy supplied some is lost in the form of heat dissipation and which is termed as technical losses. Some as well is lost as a result of variances in meter reading, non- metering and theft which can be collectively termed as commercial losses.

When the new metering system was recently introduced, the old energy static meters were retrofitted with the AMR; prepaid for individual consumption. It is safely assumed that all the customers within the area of study have been metered, unless illegal connections. Since the metering is pre-paid, it can be assumed therefore, that the meter reading coverage was 100%. This is very critical in calculation of consumption sales.

Therefore, sales in terms of billed energy and corresponding billed revenue in the project area is computed by summing the total energy consumed during the defined period by all the consumers indicated in the consumption records. The details of how sales were computed within the project area are shown in Appendix A.

3.6.3. Computation of Billing Efficiency

Billing Efficiency can be termed as an indicator of proportion of energy that has been supplied and billed to an area. It can be computed use of Equation 3.1:

$$Billing\ Efficiency = \frac{Total\ Units\ Sold\ (kWh)}{Total\ Input\ (kWh)} \tag{3.1}$$

3.6.4. Computation of Collection Efficiency

All consumers are billed on the basis of energy they consume. This is obtained from metering consumption records in Itron system. The billing amount is computed on the basis of the tariff for applicable customer category.

Collection efficiency was established using Equation 3.2:

$$Collection\ Efficiency = \frac{Revenue\ Collected\ (kSh)}{Billed\ Amount\ (kSh)} \tag{3.2}$$

The revenue collected excluded arrears since customers pay before consumption having been retrofitted with prepaid meters. Therefore the Collection Efficiency of the project area was expected to be ≤ 100%.

3.7. Determination of AT &C Losses

The Aggregate Technical and Commercial Losses of the project area is then established using Equation 3.3:

$$AT\&C\ Losses = \{1 - (Billing\ Efficiency\ x\ Collection\ Efficiency)\}\ x\ 100 \tag{3.3}$$

Where;

$$Billing\ Efficiency = \frac{Total\ Units\ Sold\ (kWh)}{Total\ Input\ (kWh)}$$

And

$$Collection\ Efficiency = \frac{Revenue\ Collected\ (kSh)}{Billed\ Amount\ (kSh)}$$

The result is then tabulated in the Table 3.1.

Table 3.1: Table of Computation of AT & C losses of the Feeder

No.	Description	Notation	Pre Ring Fencing	Post Ring Fencing
1	Input Energy (kWh)	E_i		
	Total Energy Billed (kWh)	E_b		
3	Amount Billed (KSh)	A_b		
	Gross Amount Collected (KSh)	A_G		
5	Billing Efficiency	$\varphi = Eb/Ei$x100%		
	Collection Efficiency	$\omega = AG/Ab$x100%		
7	AT&C Losses	$\{1 - (\varphi x \omega)\} x 100\%$		

3.7.1. AT&C Losses before ring fencing

The AT&C losses were established before the installation of AMR meters to ring fence the secondary distribution transformers in the project area using the methodology which has just been described.

Three billing cycle's data such as energy inflow and outflow and corresponding revenue collected for computation of the initial level AT&C losses for the project area by the usage of Equation 3.3.

The primary source of the data for the establishment of AT&C losses is obtained from:

1. Outflow of energy to the project area by the feeder meter.
2. The energy sales figures, energy billed and revenue collected were as per the consumption billing and collection records.

3.7.2. AT&C Losses after Ring Fencing

The primary aim of this project is to ring fence each secondary distribution transformer of the project area by the use of AMR with the view of reducing the commercial losses. Therefore after the installation of meters energy inflow and outflow into every individual secondary distribution transformer and corresponding revenue, billing data and consumption data is collected. There after the AT&C losses is established and recorded in Table 3.1.

3.8. Modelling of Industrial Distribution Network.

In order to carry out the Load Flow study and determine the technical losses of the Kapsoya 11kV distribution feeder, it was necessary to establish a one line diagram of the distribution network connected to the Industrial Substation. The one line diagram of Industrial distribution network was established as shown in Figure 3.4. The utility company has multi - voltage systems with a substation and transformers between each of these levels. It consists of one - single 33kV Rivatex transmission line feeding Industrial 11kV injection substation. The utilities which are involved in the distribution of electricity are;

- 33kV Rivatex transmission line
- 2x 15MVA, 33/11kV Transformers
- 11kV Kapsoya Distribution Feeder
- 11kV KCC Distribution Feeder
- 11kV ELDOWAS Distribution Feeder

The sections to be modelled are those which draw power from Rivatex transmission substation. Three 11kV feeders emanate from the industrial injection substation. From the single line diagram illustrated by Figure 3.4 of the modelled distribution grid, the procedure for the load flow study is adopted starting from top to bottom and is as follows:

- The power grid. This represents the network system up to the secondary distribution. It is set to swing mode because it makes up the difference between the scheduled loads and generated power.
- The 33kV transmission line, the 33kV incomer bus bar connected to the industrial T1 and T2 33/11kV transformers are then modelled.

Inside the substation are feeders which distribute the stepped- down power to various networks. The industrial injection substation has:

- Kapsoya 11kV FDR. It serves Kapsoya Estate, the project area. It has 4x50kVA, 3x100kVA, 7x200kVA, 7x315kVA secondary distribution transformers connected to it and is 5.1km in length.
- KCC 11kV FDR. This is the feeder that serves KCC Eldoret factory and surrounding consumers. It has 1x1000kVA secondary distribution transformer. It is 1.8km in length.
- Eldowas 11kV FDR. It serves Eldowas water pumping plant and neighboring customers. It is 2.8km long.

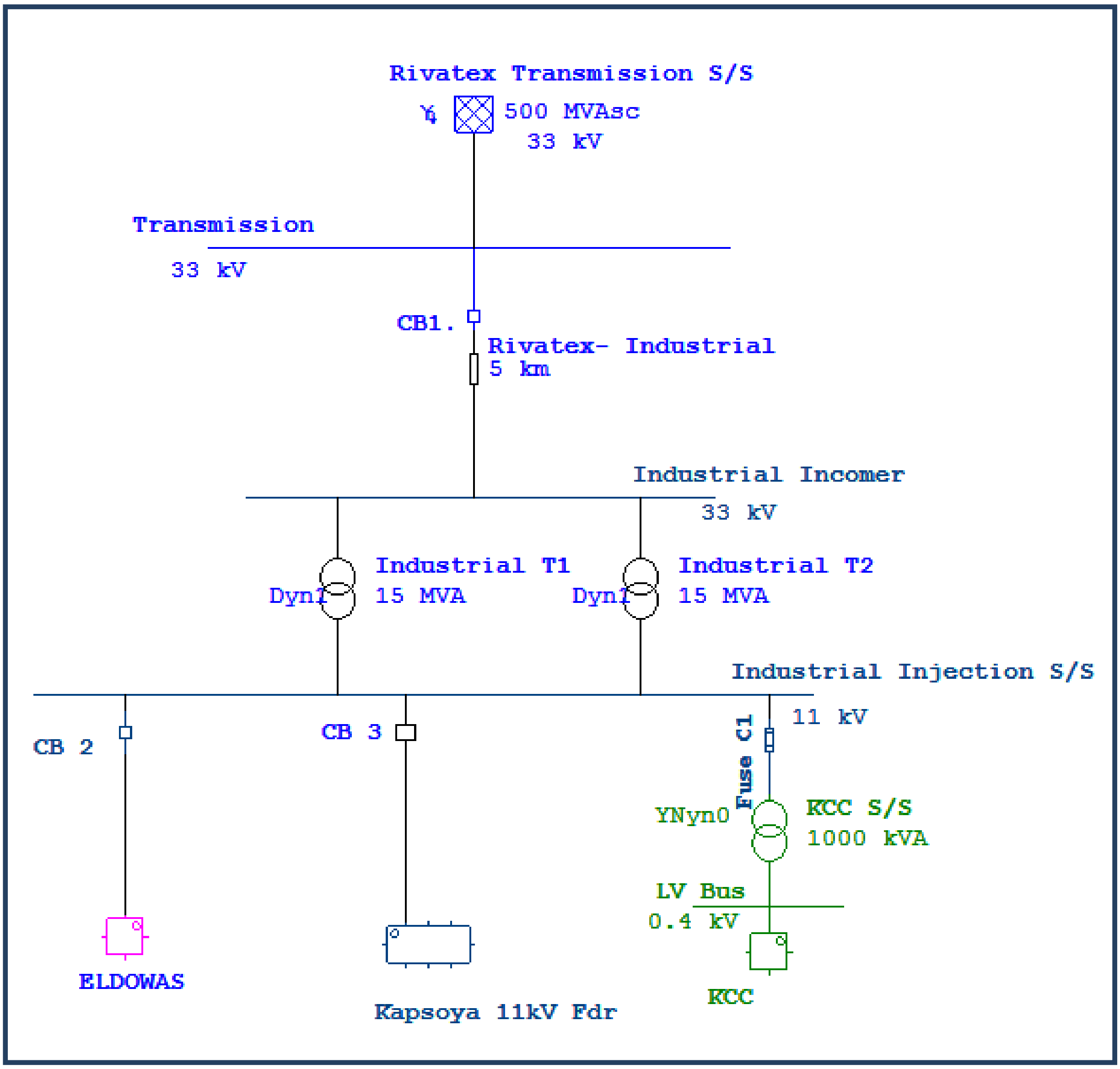
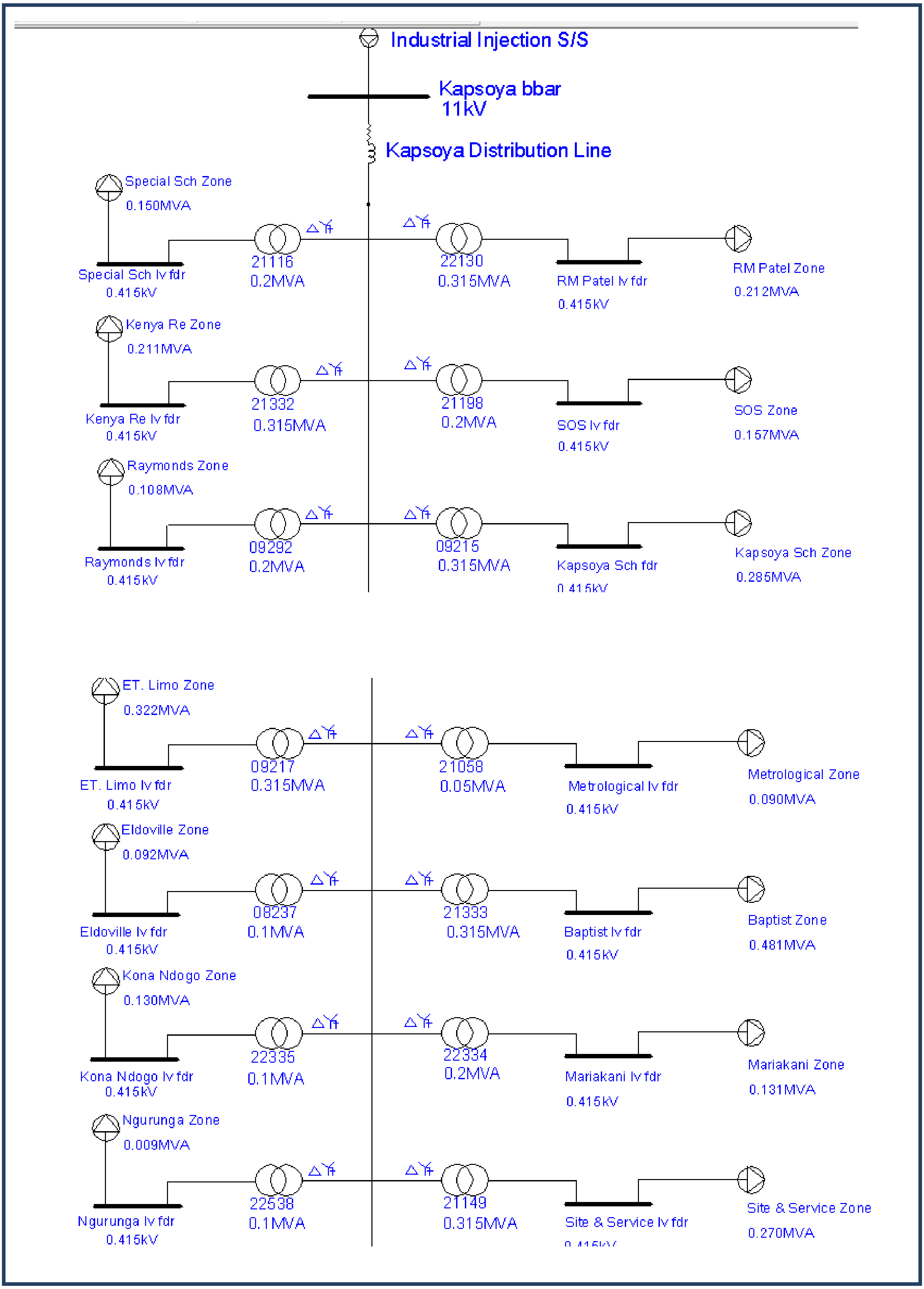


Figure 3.4: Single-Line Model of Industrial Distribution Network

The mentioned feeders are modelled in PSAF as composite networks which comprise the 11kV feeder lines, the distribution transformers and the low voltage feeders.

The model for Kapsoya 11kV feeder is shown in Figure 3.5. The other two feeders are modelled in the same format and are represented as composite networks.


Industrial Injection S/S
Kapsoya bbar
11kV
Kapsoya Distribution Line
Special Sch Zone
0.150MVA
Special Sch lv fdr
0.415kV
21116
0.2MVA
22130
0.315MVA
RM Patel lv fdr
0.415kV
RM Patel Zone
0.212MVA
Kenya Re Zone
0.211MVA
Kenya Re lv fdr
0.415kV
21332
0.315MVA
21198
0.2MVA
SOS lv fdr
0.415kV
SOS Zone
0.157MVA
Raymonds Zone
0.108MVA
Raymonds lv fdr
0.415kV
09292
0.2MVA
09215
0.315MVA
Kapsoya Sch fdr
Kapsoya Sch Zone
0.285MVA
ET. Limo Zone
0.322MVA
ET. Limo lv fdr
0.415kV
09217
0.315MVA
21058
0.05MVA
Metrological lv fdr
0.415kV
Metrological Zone
0.090MVA
Eldoville Zone
0.092MVA
Eldoville lv fdr
0.415kV
08237
0.1MVA
21333
0.315MVA
Baptist lv fdr
0.415kV
Baptist Zone
0.481MVA
Kona Ndogo Zone
0.130MVA
Kona Ndogo lv fdr
0.415kV
22335
0.1MVA
22334
0.2MVA
Mariakani lv fdr
0.415kV
Mariakani Zone
0.131MVA
Ngurunga Zone
0.009MVA
Ngurunga lv fdr
0.415kV
22538
0.1MVA
21149
0.315MVA
Site & Service lv fdr
Site & Service Zone
0.270MVA

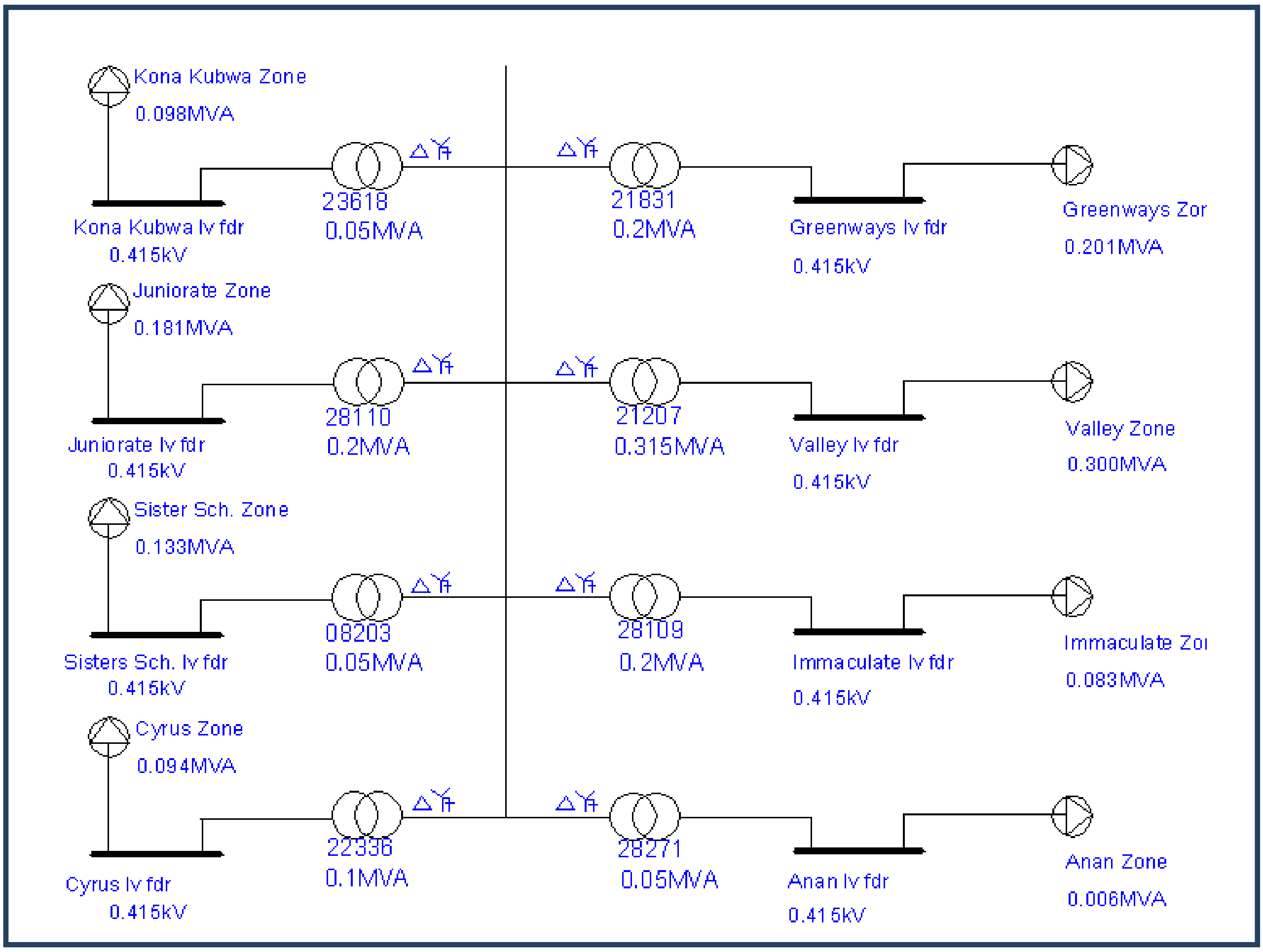


Figure 3.5: Single- Line Model of Kapsoya 11kV Feeder

3.9. Determination of Technical Losses on the Kapsoya 11kV Feeder

To simulate the technical losses on the Kapsoya 11kV Feeder line, transformers and the conductors data were required as input in PSAF software.

- For Transformers:
  - Configuration of windings in the primary and secondary side: For transformers rated 100kVA and below: Primary side windings, Y configuration and Zig Zag configuration for the secondary windings were used. Whereas for transformers rated 100kVA and above: D configuration for primary windings and Y configuration for secondary windings were used.
  - The resistance and reactance of the windings will be inserted in the PSAF
  - The rating of each transformer on the feeder will be inserted in PSAF.

- Overhead conductors:
    - Resistance and reactance per meter. Manufacturer catalogue was used to obtain this information. This data depends on cross-sectional area and the type of the material used.
    - Length of the line. The distance between two transformers and the total distance of the feeder were established and inserted in PSAF.
- Loads: Load supplied by each transformer were measured. Measurements were performed at the peak period of the day, approximately 1200Hrs for industrial consumers and 2030Hrs for domestic consumers.

CHAPTER 4

4.0. Results

For the purpose of recording and presentation of the results obtained, tables of data and graphs are used.

Since the primary objective of this study is to find out if ring fencing of distribution transformers using AMI could result in reduction of commercial losses, two scenarios arose.

4.1. Scenario I: AT&C Losses before ring fencing

The consumption records of these consumers stored in the ICS system before ring fencing of the secondary distribution transformers was retrieved from the said system and tabulated in Appendix 1. The aggregated data was then presented in table 4.1:

Table 4.1: Aggregated power consumption before ring fencing

Name of FDR	Input Energy (kWh)	Energy Sales within Project Area (kWh)	Amount Billed within Project Area (Ksh.)	Revenue Collected within Project Area (Ksh.)
Kapsoya Ex Eldoret Industrial	325589	245050	3,631,492	3,631,492

Input Energy was obtained from the AMR meter at the takeoff of the feeder line at the primary distribution substation. Energy Sales is considered as the summation of consumption reading for 878 individual AMR meters within the project area as shown in Appendix A. The amount Billed is the summation of the entire amount Billed of the said accounts within the billing cycle. The Revenue collected is money collected for three reading cycles.

4.2. Scenario II: AT&C Losses after ring fencing

This scenario is achieved by metering all the 22 distribution transformers using nonpayment AMR. The consumption records for the period under study of the 878 accounts was retrieved from the Itron system and tabulated as shown in Table 4.2.

The input energy is obtained by extracting the Feeder meter reading for the three billing cycles from the consumption records in Itron system. The output energy of the secondary distribution transformers was gotten by summation of the energy expended by the transformers on the feeder for the period under study as tabulated in Appendix A. Lastly, since the meters within the project area are all prepaid meters, the Revenue collected was devoid of any arrears. Therefore the revenue collected for the entire projected area, was summed up for the individual AMR meters for the energy sales within the area. The summation of consumption units of the prepaid meters were tabulated in Table 4.2.

Table 4.2: Summation of power consumption after ring fencing for three consecutive billing cycles.

Name of FDR	Input Energy (kWh)	Measured Energy of Transformers within Project Area (kWh)	Energy Sales of the Transformer within Project Area (kWh)	Amount Billed within Project Area (Ksh.)	Revenue Collected within Project Area (Ksh.)
Kapsoya Ex Eldoret Industrial	326601	295,891	294,665	4220644	4220644

As it has been explained earlier on the methodology to follow in carrying out this research, the data for the period when there was no ring fencing was obtained since it is hard to perform a control experiment.

4.3. Load Flow Simulation for the modelled network

When the load flow simulation for the Industrial- Kapsoya Distribution model network was performed, the conditions of the HV, LV feeder lines and transformers were established as shown in Figure 4.1. It was determined that the real power supplied to Kapsoya 11kV feeder was 3143kW which compares well with the 3144kW that the energy meter at the takeoff of the feeder registered. The total summation of the real power recorded by the meters at the low voltage takeoff of the distribution transformers, is 3026kW as illustrated by data in Appendix D. The reactive power was 1292kVAr. For KCC 11kV feeder the real power supplied to it was 408kW and reactive power was 288kVAr. Finally, the real power injected to Eldowas 11kV feeder was 76kW while 2kVAr was the reactive power.

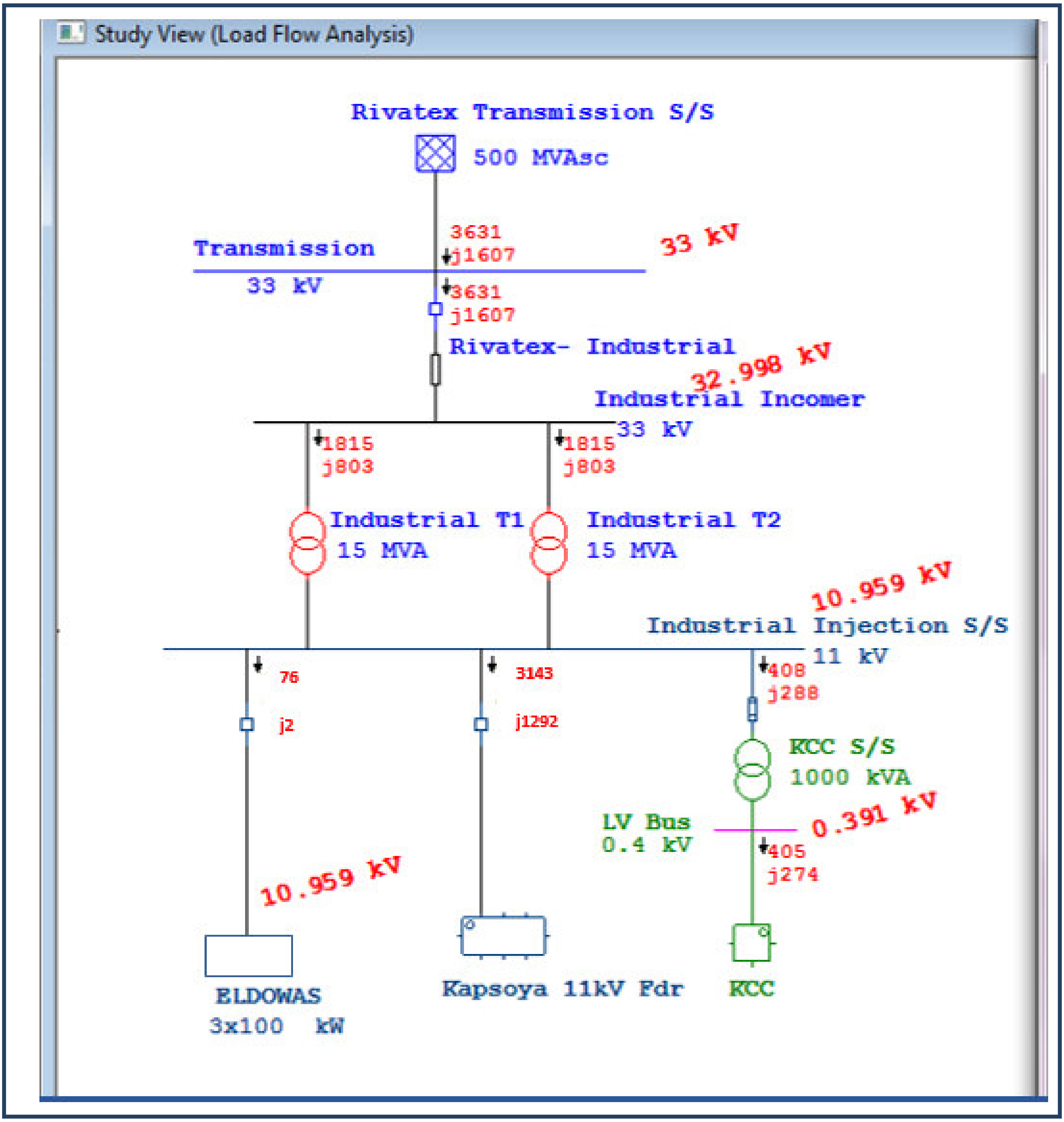
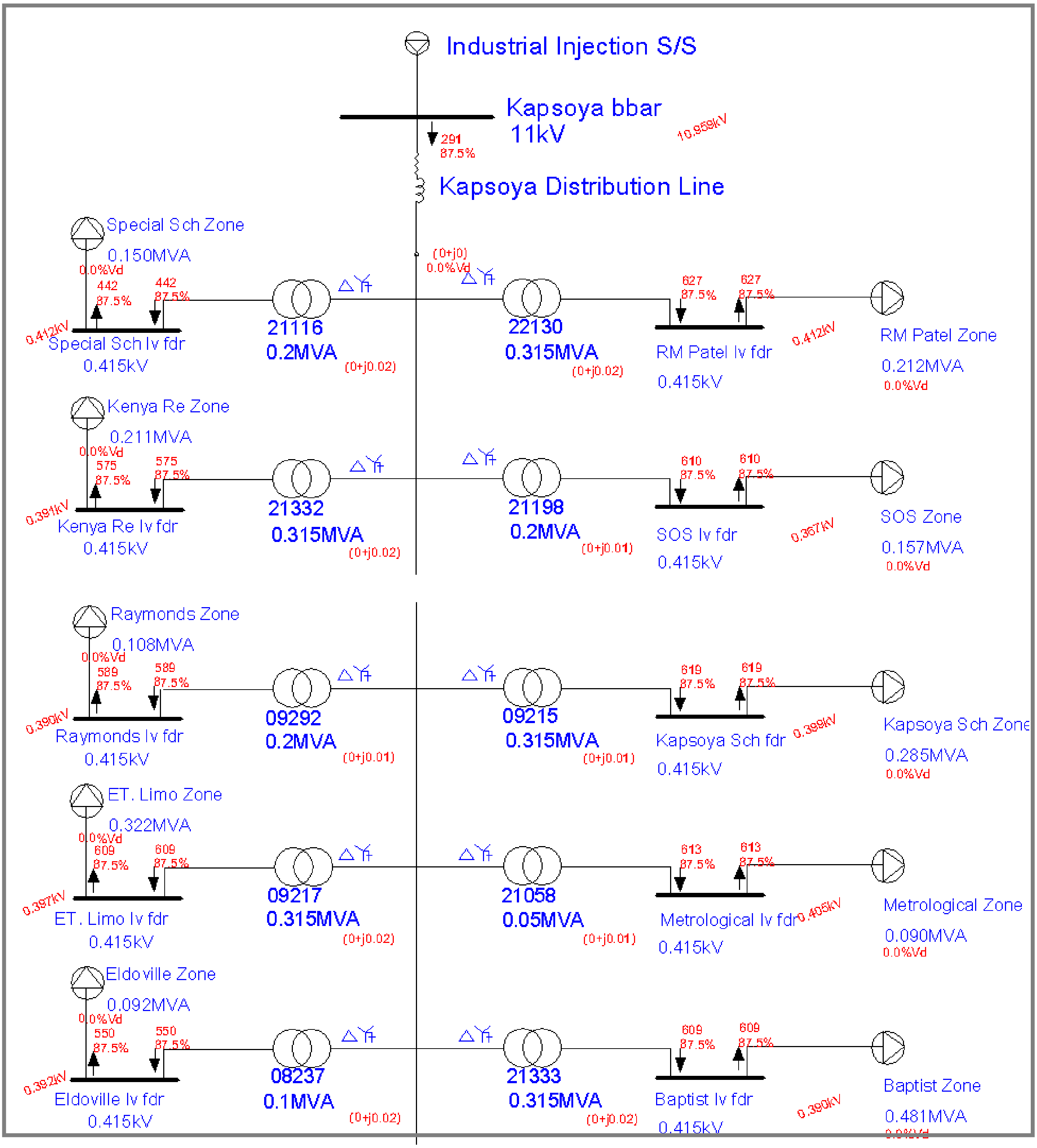


Figure 4.1: Load Flow Simulation for Industrial Distribution Network


Industrial Injection S/S
Kapsoya bbar
11kV
10.959kV
291
87.5%
Kapsoya Distribution Line
(0+j0)
0.0%Vd
Special Sch Zone
0.150MVA
0.0%Vd
442
87.5%
442
87.5%
0.412kV
Special Sch lv fdr
0.415kV
21116
0.2MVA
(0+j0.02)
22130
0.315MVA
(0+j0.02)
627
87.5%
627
87.5%
RM Patel lv fdr
0.415kV
0.412kV
RM Patel Zone
0.212MVA
0.0%Vd
Kenya Re Zone
0.211MVA
0.0%Vd
575
87.5%
575
87.5%
0.391kV
Kenya Re lv fdr
0.415kV
21332
0.315MVA
(0+j0.02)
21198
0.2MVA
(0+j0.01)
610
87.5%
610
87.5%
SOS lv fdr
0.415kV
0.367kV
SOS Zone
0.157MVA
0.0%Vd
Raymonds Zone
0.108MVA
0.0%Vd
589
87.5%
589
87.5%
0.390kV
Raymonds lv fdr
0.415kV
09292
0.2MVA
(0+j0.01)
09215
0.315MVA
(0+j0.01)
619
87.5%
619
87.5%
Kapsoya Sch fdr
0.415kV
0.389kV
Kapsoya Sch Zone
0.285MVA
0.0%Vd
ET. Limo Zone
0.322MVA
0.0%Vd
609
87.5%
609
87.5%
0.397kV
ET. Limo lv fdr
0.415kV
09217
0.315MVA
(0+j0.02)
21058
0.05MVA
(0+j0.01)
613
87.5%
613
87.5%
Metrological lv fdr
0.415kV
0.405kV
Metrological Zone
0.090MVA
0.0%Vd
Eldoville Zone
0.092MVA
0.0%Vd
550
87.5%
550
87.5%
0.392kV
Eldoville lv fdr
0.415kV
08237
0.1MVA
(0+j0.02)
21333
0.315MVA
(0+j0.02)
609
87.5%
609
87.5%
Baptist lv fdr
0.415kV
0.390kV
Baptist Zone
0.481MVA
0.0%Vd

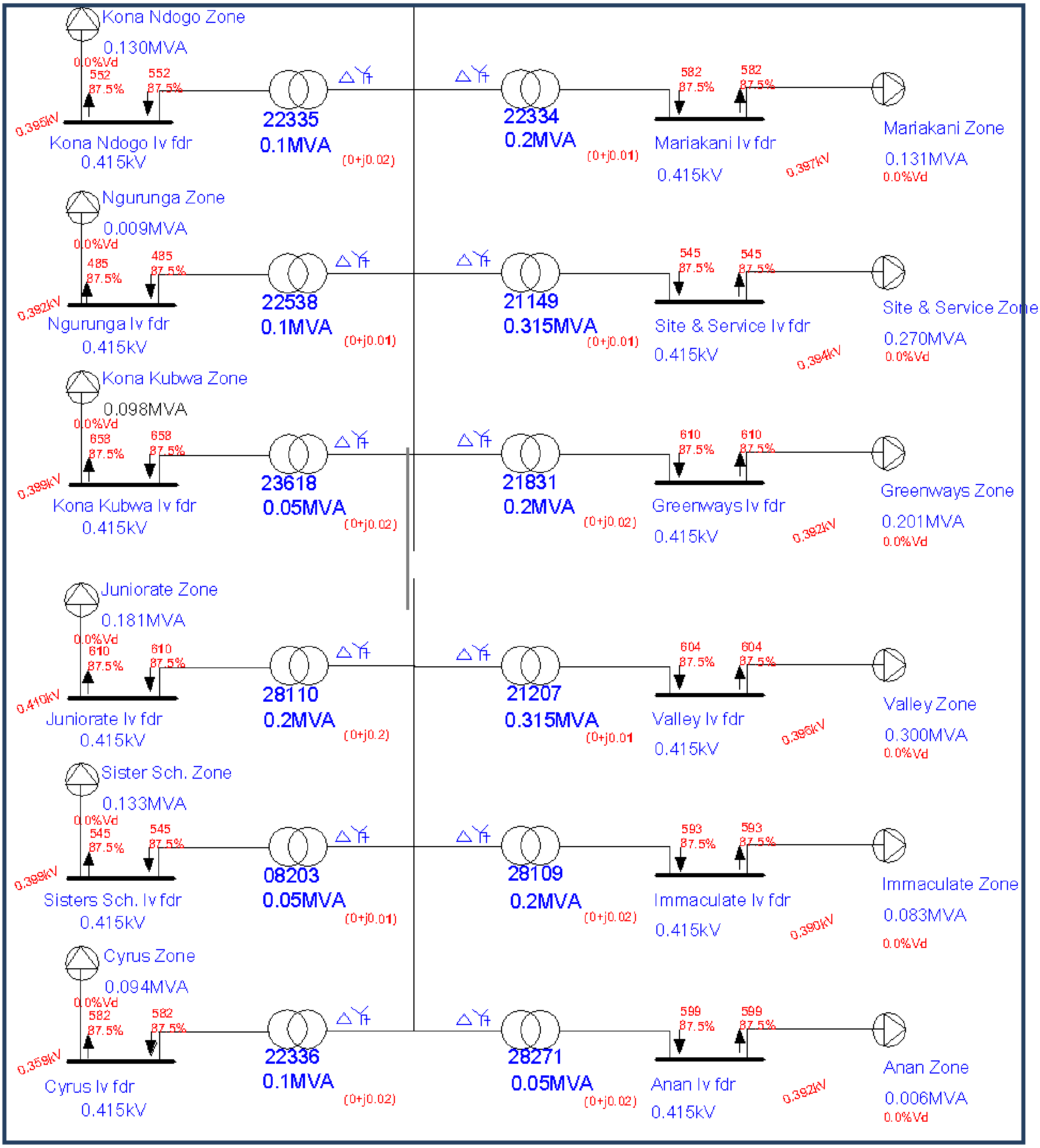


Figure 4.2: Load Flow Simulation for Kapsoya 11kV Distribution Feeder.

4.4. Technical losses on Kapsoya Feeder (FDR)

When the data for the feeder is simulated on PSAF, the technical losses on the line were established when loading of the feeder was maximum as represented by Appendix D. The losses in the transformers were separated from those that are as a result of impedance of the line. Results are presented on Table 4.3. Losses were proportional to the square of the load (I^2R).

Table 4.3: Technical Losses on the Kapsoya 11kV FDR

Name of FDR	Supplied Power to FDR (kW)	Losses in Line FDR (kW)	Losses in Transformers (kW)	Total Losses (kW)	Total (%)
Kapsoya 11kV FDR	3026	192.086	26.599	218.685	7.23

4.5. Data Analysis

The results that were obtained from the two scenarios and model simulations were tabulated and subjected to the formulae that were listed on the method of carrying out the research. The results are presented on Table 4.4.

Table 4.4: Table of computation of AT&C Losses

No.	Description	Notation	Pre Ring Fencing	Post Ring Fencing
1	Input Energy (kWh)	E_i	325,589	326,601
	Total Energy Billed (kWh)	E_b	245,050	294,665
3	Amount Billed (KSh)	A_b	3,631,492	4,220,644
	Gross Amount Collected (KSh)	A_G	3,631,492	4,220,644
5	Billing Efficiency (%)	$\varphi = Eb/Ei\text{x}100\%$	75.26	90.22
	Collection Efficiency (%)	$\omega = AG/Ab\text{x}100\%$	100	100
7	AT&C Losses (%)	$\{1 - (\varphi x \omega)\}x100\%$	24.74	9.78

4.5.1. Scenario I: Power consumption before ring fencing

The feeder meter at the primary substation recorded a total of 325,589 kWh for the three reading cycles. The amount that was billed for the same period was 245,050 kWh. The AT&C losses of the feeder were therefore 24.74% as shown in Figure 4.3 which is higher than the average AT&C losses for the entire KPLC system which stood at 17.3%

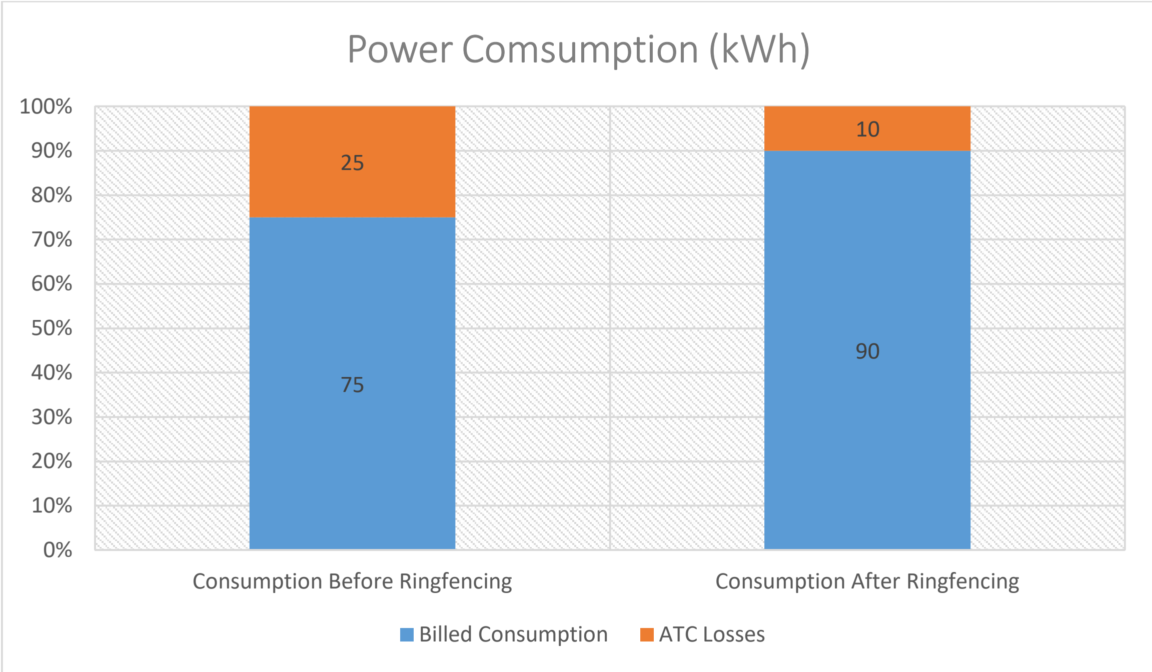


Figure 4.3: A chart of Power consumption before and after ring fencing

It is worth to note that in the project area, all the households had been connected to electricity; therefore the likelihood of illegal connection was very remote since there was no new house that was put up during the study period. Therefore, these losses must be as a result of meter tempering, bypass and the technical aspect of the network.

4.5.2.Scenario II: Power consumption after ring fencing

After metering the secondary distribution transformers on the feeder, the units recorded at the mother meter at the primary substation recorded 326,601 kWh units for a period of 3 billing cycles. The summation of the units dispensed by each secondary distribution transformer was 295891kWh and the units billed for all the accounts in the project area were 294,665 kWh. Therefore the AT& C losses for the feeder after ring fencing all the distribution transformers were calculated to be 9.78% for the 3 billing cycles as shown in Figure 4.3.

This is a significant reduction of 14.96% in AT&C losses. This can be attributed to the accounting of the energy in the power delivery highway and the actual consumption.

4.6. Consumption behaviors of customers

Consumption data of different customers presented varied patterns. There were those consumers whose consumption patterns remained relatively constant before and after ring fencing. Such consumers were dimmed to be good consumers since their load consumption nearly assumed a flat table profile.

However, there were those consumers whose consumption patterns differed a lot for the period under study more specifically before ring fencing of the secondary distribution transformers. But after ring fencing, their consumption pattern became more consistent. Such customers were dimmed to be suspicious consumers.

This kind of profiling of consumption, presented the opportunity to target them for more analysis on the way their connection through the meter is done.

4.6.1. Consumption profile of a Suspicious Consumer:

When the consumption records of customers are analyzed, some accounts out rightly show disparities with previous records. This will raise a red flag and call for more investigation on to the account. An example is Figure 4.4, the consumption for the 3 reading cycle before ring fencing showed that for the first cycle, the consumer recorded 65kWh of consumption units, second cycle was 386kWh and last cycle was 173kWh. For the 3 reading cycles the total consumption was 624kWh.

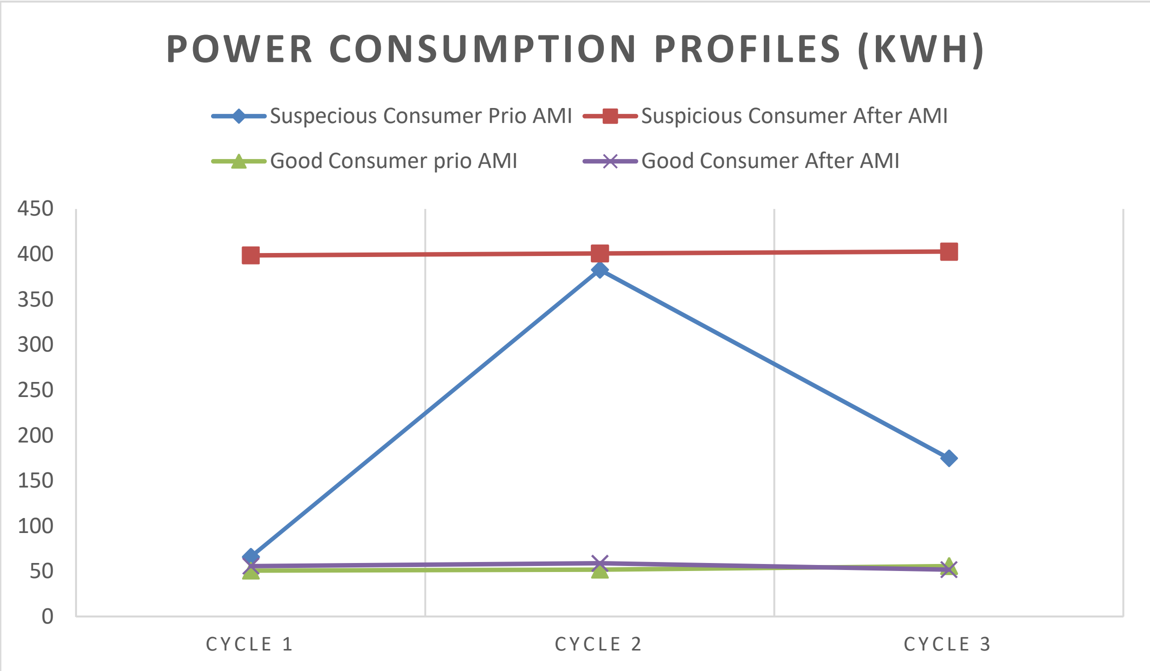


Figure 4.4: Power Consumption before and after ring fencing

After ring fencing, the consumption was 399kWh for the first cycle, 401kWh for the second cycle and 403kWh for the third cycle as represented by Figure 4.4. When the consumption for the particular account is done for the 3 reading cycles, 1203kWh was obtained. It is very clear that after ring fencing of the secondary distribution transformer was done, the amount billed for this particular account increased by nearly twofold and subsequently reduced the AT & C for the account by nearly half.

4.6.2. Consumption profile of a good consumer:

From the consumption records, there are two categories of consumers of power; those whose consumption units fluctuated during the three cycles before ring fencing but became consistent and increased after ring fencing. Likewise there were those whose consumption remained consistent both before and after ring fencing periods. Figure 4.4 represent a consumer whose consumption remained relatively consistent before and after ring fencing of the secondary distribution transformers in the project area. Before ring fencing, the consumption was 51kWh, 52kWh and 56kWh for the 1^{st}, 2^{nd} and 3^{rd} billing cycles bringing to the average of 53kWh for each cycle.

After ring fencing of the secondary distribution, the consumption for the subsequent 1^{st}, 2^{nd} and 3^{rd} billing cycles was 56kWh, 59kWh and 52kWh respectively. The average consumption was 57kWh for each billing cycle.

4.7. Load Flow Analysis for the Kapsoya 11kV Distribution Feeder

From the simulations done on the Industrial Distribution network that the real power supplied to Kapsoya 11kV feeder was 3143kW while the reactive power was 1292kVAR. For KCC 11kV feeder the real power supplied to it was 408kW and reactive power was 288kVAR. Finally, the real power injected to Eldowas 11kV feeder was 76kW while 2kVAR was the reactive power.

4.8. Technical Losses on the feeder line

From Table 4.3, it was established that the total technical losses of the Kapsoya feeder was 218.685kW which 7.23% and compares well with the range that was discussed in Figure 2.5 of chapter two of this report.

Furthermore, it was deduced that 192.086kW translating to 87.4% of the total technical losses occurred on the distribution line, whereas 26.599kW representing 12.6% occurred because of the resistances of the iron core and copper windings of the transformers.

CHAPTER 5

5.0. Conclusion

The main purpose of an electricity meter is to account for electricity generated, delivered and utilized. Currently, in the distribution network of KPLC, the instance where the electricity is metered is at the points of generation, transmission takeoffs, distribution feeder takeoffs and the points of consumption. The method proposed can be used to minimize the commercial losses incurred along the distribution network by accounting for kWh of electricity. When used alongside the prepaid AMR meters, the utility company will be able to account for electricity in its distribution network.

The method proposed was to develop an AMI system, which could easily be integrated into the existing utility infrastructure and using the commercially available AMR meters. Therefore, by ring fencing the secondary distribution transformers a method for accounting for energy in the distribution network was derived with the view of computing for the AT&C losses on the distribution network. Moreover, the method developed was able to address all the five objective of the study and these objective were achieved as illustrated;

i) .Obtain consumption data for a selected group of customers before and after introduction of AMI.

The objective of obtaining data for 878 customers for the two scenarios, the consumption data for three consecutive billing cycles of the data group was extracted from the consumption records in the ICS and Itron systems. For the first three reading cycles before ring fencing, the consumption data for the group of customers for each cycle was summed up. After the AMI had been fully deployed so as to ring fence the distribution transformers, each cycle of the billing was then summed up and recorded.

ii). Determine billing and collection efficiencies

To obtain the billing and collection efficiencies, the summation of the energy that was supplied to and billed in the area under study was computed for the three billing cycles.

The ratio of the billed to supplied energy provided the billing efficiency. Whereas the collection efficiency was determined by summing up the revenue collected for the three billing cycles and then compute the ratio between the collected revenue to the total billed units. These efficiencies were obtained before and after the deployment of the AMI.

iii). Compute aggregated technical and commercial losses

After determining the billing and collection efficiencies, AT&C losses were then computed by obtaining the product of the collection efficiency by billing efficiencies. The summation of this product and AT&C losses would add to 1.

iv). Establish distribution system efficiency

The distribution efficiency was established by computing the product of the collection efficiency and billing efficiencies. The system efficiency was established before and after ring fencing of distribution transformers was carried out.

v). Simulate a load flow for the Kapsoya 11kV feeder

The objective to simulate the load flow for the Kapsoya 11 kV feeder, was achieved by modelling Industrial Substation network using PSAF software. A load flow analysis was then carried on the model. The simulation of the load flow on the Kapsoya 11kV feeder line gave an overview of the energy flow in the feeder and its performance.

The characterization of losses and voltage profiles on the Kapsoya 11kV Distribution feeder by simulating the load flow gave an overview of state and condition of the voltage profiles of both the High Voltage and Low Voltage feeders of the network.

Testing the method with real data showed that the proposed method could be used with current technology in the appropriate installations. Applicability of the method depends largely on the accuracy of Billing and Collection efficiencies. The method worked well when the setup was properly configured. Therefore, the objectives of the study that had been stated in Section 1.5 have been met.

Recommendation

The results were primarily obtained from meter readings of energy consumption at various points of the distribution network. The data were recordings of events that had already happened.

Therefore, the conclusions that were deduced were historical in nature. It would be prudent to incorporate some features of the network so that the usability and functionality of the whole set up could be used to forecast the status and operations management of the network.

Of particular interest, is to use the system to manage the operations of the network. For example, the real time monitoring of the status of the network by relaying the status parameters like voltage, current, power factor and eventually the load flow at various points of the network.

For all these to be feasible, the following steps are recommended to be done.

5.1.1. Procurement of smart meters

Currently, the meters that have been installed both at the point of consumptions and the secondary distribution transformers are automatic meters but they are not smart meters. The functionalities of these meters would have been modified to include real time monitoring of the performance of the distribution network. This can only be achieved if there was a two way communication channel between the metering device and the Network Operation Centre (NOC).

It would therefore be prudent to procure meters which are smart so that the AMI functionalities can be incorporated.

5.1.2. Interfacing of the various electrical network elements

Distribution Automation (DA) necessitates that there is real time monitoring and control of distribution level circuits. In order to achieve this, a distribution circuit state estimator tool which can provide real time load flow estimates of the system is required. Since there is limitations on the availability of real time measurements on distribution networks, load modelling technique is used to provide real time estimates of the customer load demands. The efficiency of the distribution network will be greatly improved if the automatic switches along the distribution network are introduced. Therefore, interfacing of these elements is very critical in achievement of DA. Currently at the distribution level, the various elements are not communicating with one another at all apart from the physical electrical connection. Therefore, the DA is highly inhibited.

5.1.3. Integration and adaption of GIS

In the recent years, KPLC has been collecting data of its equipment and installations. This facility database, FDB is the Geographical Information System (GIS) for the utility company. The system provides very detailed location and conditions of the facilities in the distribution network. The company should roll out the GIS and AMI systems with the view of laying the foundation of a smart grid. The two systems are the corner stones of the smart grid.

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Appendix A: Consumption Data for the study period

					Consumption Data													
					Consumption Before Ring Fencing						Consumption After Ring Fencing						
					1st Cycle		2nd Cycle		3rd Cycle		1st Cycle		2nd Cycle		3rd Cycle		
NO	TX No	SRN	Customer Name	Meter No	kWh	Ksh	kWh	Ksh	kWh	Ksh	kWh	Ksh	kWh	Ksh	kWh	Ksh	location
		711123	JOSEPH KIPKORIR SAWE	22120426220	65	931	63	801	55	756	87	1218	86	1204	87	1218	PLOT NO 1703/9 KAPSOYA
		711148	ELIJAH MURKOMEN KITUM	01451043952	70	1205	74	1175	72	1102	73	1022	70	980	73	1022	9/986 KAPSOYA
		715708	MUHAMUD ABDULAI ABDI	14141077108	102	1502	150	2165	100	1310	159	2226	150	2100	168	2352	B9/1387 KAPSOYA
		722559	CECILIA W WANYONYI	22119665267	34	552	40	668	34	591	28	392	33	462	38	532	PLOT NO 1312
		722568	SALLY JELLAGAT MENGICH	22120469410	39	495	50	683	288	4911	321	4494	306	4284	301	4214	PLT NO. B9/1315 KAPSOYA MAIN HSE
		731375	DANIEL KIPROP CHERONO	22120469428	106	1754	37	485	84	1273	116	1624	119	1666	123	1722	OFF ELGEYO/BIK9/1390
		733751	SALLY MENGICHI	22120469469	62	788	75	1127	56	726	60	840	65	910	61	854	B9 1399 KAPSOYA
		734903	DOUGLAS NYAMWEYA OANYA	01451164790	61	954	85	1542	60	1004	81	1134	80	1120	87	1218	PLOT NO 9/1737
		735756	CAROLINE JEPKORIR KANDIE	22120469550	30	296	40	510	62	862	63	882	58	812	65	910	PLT B9/373 KAPSOYA
		2030961	DOUGLAS NYAMWEYA OANYA	22119671034	34	550	35	622	31	551	30	420	34	476	33	462	PLOT 9/281 KAPSOYA
		2036652	MARY JEBOI CHEBURET	22120469295	98	1577	239	4502	71	1031	247	3458	269	3766	256	3584	PLT 9/1227/KAPSOYA
		2039341	JOHN CHERUIYOT KIBOSIA	22119665390	75	1069	116	1583	102	1999	116	1624	109	1526	103	1442	9/973 KAPSOYA
		2065179	GEDION OMUSE EKAPOLON	22120469436	47	575	100	1643	28	399	112	1568	111	1554	89	1246	9/880 KAPSOYA
		2070307	DAVID KIPCHUMBA BETT	22120469337	40	536	93	1466	23	312	100	1400	89	1246	92	1288	BLK 9/988 KAPSOYA
1	2230	2091366	MILDRED MUKASIA HUTI	22119665424	59	734	317	5369	50	518	356	4984	340	4760	321	4494	956 KAPSOYA
		2173834	JOHN KIBET BAROROT	22120469303	39	500	32	444	35	462	39	546	32	448	46	644	PLT 9/905 ELGEYO RD
		2207556	JAPHETH KIPKEMBOI SEREM	22119665341	140	1960	143	2002	131	1834	131	1770	116	1666	168	2578	PLT 9/630 KAPSOYA NEAR MARIAKANI
		2210684	JAPHETH KIPKEMBOI SEREM	22119665283	180	2520	189	2646	191	2674	176	2508	117	1629	125	1772	PLT BLOCK 9/631 KAPSOYA
		2215756	MERCELINE AMINDE AWUORI	22120469501	39	546	40	560	48	672	33	532	34	592	39	657	PLT BLOCK 9/631 KAPSOYA
		2230191	JAPHETH KIPKEMBOI SEREM	22119665358	176	2464	156	2184	166	2324	137	1973	139	2070	161	2601	PLOT 934 KAPSOYA
		2230192	JAPHETH KIPKEMBOI SEREM	22119665317	20	280	28	392	25	350	26	367	27	376	28	413	PLOT 1596 KAPSOYA
		2230194	JAPHETH KIPKEMBOI SEREM	22119665275	60	840	69	966	66	924	63	815	45	544	64	816	PLOT 9 565 KAPSOYA MARIAKANI
		2230195	ANDREW WEKESA TABALIA	22119665309	113	1582	109	1526	110	1540	106	1917	114	1904	114	1803	PLOT 9/565 KAPSOYA MARIAKANI
		2230197	SAMUEL MABETA ONKOBA	22119665366	48	672	42	588	45	630	38	493	42	515	47	568	PLOT 9/565 KAPSOYA MARIAKANI
		2230200	IBRAHIM OMUSULA AMBUCHE	22119665259	61	854	57	798	64	896	54	638	44	547	16	291	BLK9/578 KAPSOYA
		2292259	C/O KENGEN PIUS KIPLAGAT KIPK	22120469543	17	238	14	196	15	210	6	195	13	266	9	220	PLT 9/593/6 KAPSOYA
		2297556	DUNCAN KIPTOO MTAI	22120469329	159	2226	155	2170	150	2100	159	2281	164	2383	140	2211	9/2174 KAPSOYA
		2355411	MUHAMUD ABDULAI ABDI	14141127317	50	700	53	742	42	588	41	523	48	593	29	426	P/N 1619 KAPSOYA
		2360429	FRIDAH MULWALE SHIROYA	04225859927	198	2772	191	2674	196	2744	137	1963	189	2797	173	2664	HSEBLOCK 91613 KAPSOYA

2	21116	711158	DANIEL KIBIWOT KIPRONO	01451080814	66	1123	82	1322	56	815	69	966	85	1190	70	980	9/986 KAPSOYA
		711166	MILKA TOROITICH LUTTA	01451112658	37	578	43	628	19	338	40	560	44	616	39	546	9/986 KAPSOYA
		711439	RHODAH JEMUGE KOMEN	01451190076	171	3224	202	3928	190	3212	182	2548	200	2800	203	2842	EMC9/1695 KAPSOYA
		711496	THOMAS KIPCHIRCHIR YEGO	01451041923	110	2012	122	2058	127	2085	119	1666	123	1722	132	1848	EMC9/1695 KAPSOYA
		711508	RAYMOND KARANJA NJAGA	01451080772	196	3707	179	3366	162	2794	199	2786	190	2660	183	2562	EMC9/1695 KAPSOYA
		711716	JONATHAN KIPTOO ROTICH	01451035990	92	1506	90	1355	71	1083	98	1372	96	1344	93	1302	1706 KAPSOYA
		711829	JUDITH CHEPKOECH	01451043846	23	443	18	350	9	237	66	924	63	882	69	966	9965 KAPSOYA
		712021	STANLEY KIPKERING NGOSOSEY	01451013435	70	1083	70	1101	51	726	76	1064	79	1106	75	1050	PLT 1739 KAPSOYA
		712046	ANDREW KABAGURU	14140710634	80	1415	74	1173	68	1000	86	1204	73	1022	69	966	PLT 1739 KAPSOYA
		712051	DISMAS ODUOR OPONDO	01451043507	41	632	109	1977	82	1322	119	1666	106	1484	111	1554	PLT NO B9/1401 KAPSOYA
		712092	REBECCA JEPKORIR KIPTIM	01451043499	114	2060	67	1034	103	1656	119	1666	110	1540	123	1722	B/9/1370 KAPSOYA
		712232	JAMES KIPROTICH SIGILAI	01451214389	87	1440	101	1870	88	1560	109	1526	116	1624	98	1372	1704 KAPSOYA
		712233	JAMES KIPROTICH SIGILAI	01451214371	56	861	66	1157	69	1183	57	798	61	854	70	980	ISOLATED KAPSOYA
		712234	SAMUEL NJIHIA NGANGA	01451103855	82	1437	102	1686	78	1205	107	1498	100	1400	94	1316	ISOLATED KAPSOYA
		712313	JOSEPH KIMANI NJUGUNA	01451104846	45	760	23	443	59	899	56	784	55	770	52	728	AT KAPSOYA
		712364	HENRY ODONGO GILA	01451218455	20	380	521	11625	209	4277	598	8372	524	7336	532	7448	AT KAPSOYA
		715537	LINET MASAI BUTEKA	01450992191	76	1234	76	1361	84	1481	78	1092	76	1064	75	1050	PLT NO 1372 KAPSOYA
		715639	DISHON OUMA N	22119671141	30	537	12	278	22	386	33	462	39	546	31	434	PLOT NO.1739 KAPSOYA
		715686	DUNCAN M MAINA	01451077414	32	563	31	506	35	536	33	462	32	448	32	448	9/1709 KAPSOYA
		715705	WILLIAM BIWOTT	01451041915	299	4662	170	2854	82	1218	304	4256	300	4200	301	4214	PLOT NO 9/1302 KAPSOYA
		722493	JOHN CHEPSEBA KIPYEGO	01451043523	136	2513	98	1616	176	2961	188	2632	180	2520	186	2604	B9/1387 KAPSOYA
		722497	JAMILA GUYO BORU	01450978018	89	1576	104	1725	83	1298	109	1526	100	1400	113	1582	PLT 89/1387 KAPSOYA
		722498	GIDEON K R SANGUT	01451043895	38	801	42	705	45	734	39	546	40	560	36	504	1726 BLK 9 KAPSOYA
		722499	ANNE WANJALA NAFULA	01451062291	25	470	18	350	26	430	30	420	31	434	38	532	1726 BLK 9 KAPSOYA
		722500	GODFFREY KIPTOO KOSKE	01451065344	43	662	64	1116	38	645	65	910	67	938	73	1022	PLT 9/567 KAPSOYA
		722501	GEOFFEY KIPKOSGEI CHEMAOI	01451065351	51	826	48	709	51	726	55	770	53	742	56	784	PLT 9/567 KAPSOYA
		722502	ARKAO NYAMBU WACHENJE	01451081762	58	962	47	692	58	844	59	826	65	910	58	812	BLOCK 9/1489 KAPSOYA
		722503	TECLA KOSGEI MUTAI	01451081820	34	591	42	616	39	552	36	504	39	546	43	602	BLOCK 9/489 KAPSOYA
		722504	DORCAS JEBOTIP CHOGE	01451081747	39	610	38	661	46	752	46	644	45	630	49	686	PLT B 9/1701 KAPSOYA
		722505	SERAH AWUOR OGASO	01451159626	59	877	77	1360	70	1179	84	1176	93	1302	78	1092	PLT NO B/9/1701 KAPSOYA
		722506	ISAIAH K CHEBII	01451215204	78	1270	131	2479	81	1352	140	1960	134	1876	146	2044	1702 KAPSOYA
		722508	WILLY KIBET SANG	01451062283	56	861	56	923	53	865	59	826	60	840	69	966	PLT 1318 KAPSOYA

		722509	JOHN KIPKORIR BUSIENEI	01451077349	48	779	61	936	67	1012	70	980	75	1050	62	868 PLT NO 1318 KAPSOYA
		722510	ELIZABETH MWANJUMA	01451038960	43	530	30	503	36	635	50	700	46	644	49	686 PLT 1319 / KAPSOYA
		722511	MARIA - PCHEMUT	01451077380	27	465	22	440	20	398	25	350	30	420	29	406 BLOCK 9-1482 KAPSOYA
		722514	NAOMI CHEPCHIRCHIR KEBENEI	01451083099	52	786	58	991	40	672	60	840	61	854	67	938 BLK 9/1482 KAPSOYA
		722515	JOSEPH K GITAU	01451204133	98	1643	153	2927	89	1578	175	2450	179	2506	192	2688 9/1483 KAPSOYA
		722516	CHRISTINE JEMUTAI KIBOR	04225860016	182	3216	206	4461	149	2477	209	2926	212	2968	203	2842 PLOT 9/1475 KAPSOYA EST
		722518	CLEOPHAS KIMUTAI KICHWEN	04225796632	19	390	28	510	29	482	30	420	26	364	19	266 PLOT 9/1475 KAPSOYA EST
		722519	TOMBEN KENYATTA OTIENO	04225792250	94	1571	95	1747	90	1253	100	1400	96	1344	94	1316 PLOT NO B/9/1499
		722520	SAMSON KIPKOSKEI ROTICH	01451218521	77	1356	63	1061	7	217	80	1120	81	1134	87	1218 PLT NO B/9/1499 KAPSOYA
		722521	BEATRICE LUDOVICA ADHIAMBO	01451042822	23	455	17	341	20	374	23	322	28	392	34	476 B/9/1499 KAPSOYA
		722522	MARY OGOLA SINDE	01451092306	37	547	44	725	47	697	47	658	53	742	49	686 PLOT NO .B/9/1499
		722523	JULIA MUTHONI GITAU	01451161358	44	725	56	843	53	742	59	826	64	896	64	896 PLOT NO .B/9/1499
		722525	MICAH KIPKORIR NGETICH	01451021495	45	739	40	614	44	639	46	644	46	644	51	714 PLOT 1371/9 KAPSOYA
		722526	PETER IWOUNI MANYURU	01451082018	68	1159	73	1155	100	1598	90	1260	93	1302	95	1330 PLOT 1371/9 KAPSOYA
		722527	LEAH JEMAIYO KIPKORE	01451161408	29	523	45	670	84	1316	80	1120	80	1120	85	1190 PLOT 1371/9 KAPSOYA
		722531	JAPHETH M MOGAKA	01451093379	45	736	34	531	77	1189	53	742	54	756	68	952 1313 KAPSOYA
		722532	DIMSON OMOSA NYAMOKUNYO	01451093338	41	676	24	421	44	639	46	644	44	616	48	672 1313
		722533	BETTY JELAGAT CHEPWARWA	01451080657	32	564	34	542	30	478	31	434	39	546	36	504 1313
		722535	BRYAN KERR NGAYWA	01451120651	31	551	42	637	26	432	41	574	40	560	43	602 9/1317 KAPSOYA
		722537	HIGHLAND VALUERS LTD	01451157752	61	1024	70	1201	62	953	79	1106	85	1190	68	952 1310/9 KAPSOYA
		722538	SUSAN CHEBET BIRECH	01451103863	53	789	31	490	29	440	49	686	46	644	58	812 1310/9 KAPSOYA
		722539	LILIAN - CHEROBON	01451157786	41	699	49	721	49	698	50	700	51	714	56	784 PLOT 9/1374 ELGEYO BOARDER
		722540	RUTH J. KIMUTAI	01451022253	71	1110	77	1191	77	1130	69	966	67	938	86	1204 B9/1376 KAPSOYA
		722541	MARIA NAITOTI LEKALKULI	01451190092	51	747	52	744	60	841	67	938	57	798	59	826 PLOT 1376 KAPSOYA
		722543	SAMSON KIPKOECH KIGEN	01451190043	64	1098	62	951	55	796	61	854	64	896	67	938 PLT BLOCK 1307/9 KAPSOYA
		722546	DANIEL BIWOTT TUWEI	01451041899	91	1635	81	1304	75	774	98	1372	103	1442	90	1260 BLOCK 9/971 KAPSOYA
		722547	DANIEL BIWOTT TUWEI	01451041881	22	386	17	315	13	273	9	126	13	182	19	266 PLT KAPSOYA 1307 ELGEYO BOADER
		722549	DOROTHY JEPKEMBOI KURGAT	01451156952	38	590	38	570	44	606	45	630	56	784	50	700 PLT NO 9/1303 ELGEYO BORDER
		722551	HENRY MWAURA WANGARE	01451166399	51	840	24	390	38	568	47	658	59	826	54	756 PLOT NO 9/1303
3	21198	722556	JEPKOECH KUTOL	22119671182	147	2731	166	2867	167	2800	165	2310	142	1988	152	2128 PLOT NO 1312
		722558	WILLIAM AMBOYE OBANDA	01451164774	54	834	66	932	61	904	69	966	75	1050	61	854 PLOT NO 1312
		729668	JUDITH CHEPKOECH	14105845912	39	605	58	965	52	770	67	938	62	868	53	742 AT KAPSOYA ESTATE

		2036458	JOSEPH KAHIGA KIRUKI	01451166951	15	240	14	255	20	339	12	168	10	140	18	252	PLT 9/1227/KAPSOYA HSE3
		2038190	KELLAN ASEYO KAYERE	22119671133	27	466	25	421	45	616	49	686	42	588	53	742	9/973 KAPSOYA
		2040452	STEPHEN NYONGESA MASINDE	01451190126	353	7075	190	3309	155	2586	397	5558	405	5670	432	6048	PLT 9/953 KAPSOYA
		2069213	NANCY CHEPKOECH KENER	01451103434	119	2175	149	2555	83	1298	179	2506	186	2604	189	2646	2675 KAPSOYA
		2077477	DANIEL OMONDI OCHIENG	01451166985	162	2842	165	3170	175	3287	112	1568	180	2520	176	2464	9/2655 KAPSOYA
		2080353	EUNICE MORANGI NYAMOKO	01451043861	36	588	54	855	52	769	57	798	52	728	63	882	ELD MUN/BLOCK 9/1015
		2085697	ZENNAH JEPKEMBOI KOKS	14141146937	78	1272	77	1377	65	1095	97	1358	94	1316	83	1162	9/969 KAPSOYA
		2093925	FAITH JERUTO KIPROP	01451209850	22	430	60	917	62	875	66	924	60	840	53	742	9/1696 KAPSOYA
		2097341	SHEM ELUNGAT EMOJONG	01451157802	26	491	34	493	32	451	21	294	24	336	20	280	PLT 979 KAPSOYA
		2110903	JOICE JEPKOSGEI SAWE	01451080764	81	1304	110	1781	109	1680	120	1680	110	1540	111	1554	PLOT 1294 KAPSOYA
		2111479	ESTHER WAIRIMU MBUGI	01451043960	113	1924	114	2038	98	1724	115	1610	117	1638	130	1820	P/N B9/1204 KAPSOYA
		2116449	CATHERINE SAIDI CHEPKEMOI	14140909723	40	498	44	508	26	391	49	686	41	574	52	728	9/923 KAPSOYA
		2118819	JANET AMISI	01451164576	15	314	5	191	9	230	28	392	30	420	23	322	PLT NO KAP/B/9/944 KAPSOYA
		2124986	SUSAN JERUTO CHESEREM	01451049066	35	456	12	281	2	159	40	560	44	616	36	504	PLOT 948/9//B KAPSOYA HSE2
		2132802	ANTHONY MWANGI KINYUA	01451080806	68	1161	60	917	47	673	73	1022	71	994	69	966	961 KAPSOYA
		2138764	MARY FLORENCE MWETICH	04225785288	33	574	76	1211	42	616	79	1106	81	1134	89	1246	BLK9/962 KAPSOYA
		2149922	PATRICIA NJERI WACHIRA	14140909517	17	316	34	499	39	529	46	644	49	686	49	686	1748 KAPSOYA HSE 2
		2159068	ANNAH JELAGAT SUTER	22119829871	55	905	65	973	56	815	69	966	78	1092	60	840	1748 KAPSOYA
		2162237	LEAH CHELAGAT KOSGEI	01451041857	40	614	62	923	38	541	65	910	67	938	65	910	B 2218 KAPSOYA
		2162977	DUNCAN NGATIA THUMBI	14140710717	132	2436	153	2850	142	2426	169	2366	156	2184	173	2422	1705 KAPSOYA
		2178944	DANIEL MWANGI MBUGUA	14141111527	95	1701	107	1937	123	2072	124	1736	110	1540	117	1638	BLK 9/995 KAPSOYA
		2182840	ABDALLA - OMARI	01451080798	39	654	44	661	49	694	40	560	46	644	43	602	B/9/593/3 KAPSOYA
		2185659	JUDITH OLIACHA A. C/O P.O.ODU	01451042806	90	1260	81	1134	99	1386	85	1115	81	824	90	1284	PLOT NO 9/1814/006
		2191304	CHRISTINE JEMUTAI KIBOR	01451214330	34	476	39	546	38	532	30	376	21	333	19	320	705 KAPSOYA
		2191305	PHILIP KIPLIMO KIBOR	01451204166	115	1610	117	1638	130	1820	113	1924	114	2038	98	1724	PLOT 9/594 KAPSOYA
		2196893	DIANA CHEPKOECH	01451122780	49	686	41	574	52	728	40	498	44	508	26	391	BLOCK 9/598 KAPSOYA ESTATE
		2196895	LIZZA JEPCHUMBA KOECH	14141133984	79	1106	89	1246	86	1204	73	903	60	772	61	819	9/598 KAPSOYA HSE 2
		2197951	JAMES ONYANGO AYIEYO	01451164766	223	3122	236	3304	221	3094	154	2451	205	3460	152	2330	9/598 KAPSOYA HSE 1
		2207103	MORGAN JOHNSTONE OMUSUND	01451159881	156	2184	180	2520	179	2506	139	1812	138	2018	159	2482	PLT NO; 3/02 KAPSOYA
		2216955	CLEMENTINE JEPKOSGEI KOECH	04225860909	134	1876	127	1778	130	1820	128	1893	129	1949	120	1081	PLT B9/563 KAPSOYA
		2226263	SIMON KIMANI MWANGI	01451049215	77	1078	75	1050	70	980	73	883	48	576	74	982	9/ 2203 KAPSOYA
		2240371	STANLEY MUSE SHITOTE	01451158826	81	1134	80	1120	87	1218	61	954	85	1542	60	1004	PLOT B9/1603
		2254512	GIDEAON KOMEN RONO SANGUT	01451043432	98	1372	92	1288	94	1316	94	1423	93	1324	99	1453	9/579 KAPSOYA
		2264233	HENRY JUMA ADEMBA	01451018806	63	882	58	812	65	910	30	296	40	510	62	862	PLT/591 KAPSOYA
		2275440	LEAH CHEPKOSKEI BIWOTT	04225859448	50	700	53	742	54	756	38	499	52	644	50	632	P/N KAPSAOYA CHURCH
		2290700	PIUS OSONGO GETAKWA OBURI	01451167017	80	1120	80	1120	83	1162	68	716	70	761	80	891	PLT 9/593/6 KAPSOYA
		2291324	LABAN CHEBET BOWEN	01451158800	101	1414	94	1316	91	1274	91	1362	94	1408	106	2519	PLT 9/593/6 KAPSOYA
		2310583	GRACE JEPCHIRCHIR SUGUT	01451041873	60	840	63	882	54	756	59	735	32	525	36	632	9/593 KAPSOYA
5	9215	2310585	GRACE JEPCHIRCHIR SUGUT	01451157810	156	2184	170	2380	167	2338	156	2209	112	1549	95	1298	9/593 KAPSOYA
		2310589	GRACE JEPCHIRCHIR SUGUT	01451041840	43	602	44	616	48	672	29	524	38	645	38	645	9/593 KAPSOYA
		2312507	EUNICE JEPTUM CHELAL	01451009599	51	714	53	742	56	784	22	337	50	748	50	748	9/593 KAPSOYA
		2312509	EUNICE JEPTUM CHELAL	01451077372	12	168	12	168	16	224	8	213	18	310	13	221	9/593 KAPSOYA
		2315368	LUCY NYAKINYUA MUTUA	01451041907	320	4480	318	4452	301	4214	329	5497	300	4974	285	4761	9/593 KAPSOYA HSE 4
		2323403	GEOFFREY KOSGEI CHEMAOI & 4	01451120685	198	2772	191	2674	196	2744	189	2646	173	173	2422	2520	593/4B KAPSOYA
		2323418	GEOFFREY KOSGEI CHEMAOI & 4	01451080715	88	1232	84	1176	88	1232	85	1190	59	826	68	952	9/593/ 4B KAPSOYA HSE 5
		2330980	EMILY CHEMUTAI NDIEMA	01451080731	4	56	3	42	7	98	4	171	4	171	3	162	593/4B KAPSOYA SHOP 9
		2337358	CORDRINGTON H O DOME OCHIE	01451122749	166	2324	149	2086	170	2380	149	2226	143	2181	168	2310	1629 KAPSOYA HSE 2
		2337677	DR. JOSPHAT OTWELO ABWAJO	14103965837	155	2170	143	2002	163	2282	126	1865	152	2475	117	1829	1629 KAPSOYA HSE1
		2346109	WAIRIMU SCHOLAR KAMAU	01451214413	56	784	54	756	59	826	57	740	57	757	44	511	B/9/1640 KAPSOYA

		2359460	FANICE JEROP KOMEN	01451159600	21	294	26	364	20	280	30	390	10	229	0	134	P/N B9/1591 ELGEYO RD
		2359929	JOSEPH TUITEIK BULLUT	01451091142	82	1148	66	924	70	980	60	754	68	978	68	618	PLOT 1593 KAPSOYA
		2383077	EZEKIEL KIPTOO KIPROP	01451024598	126	1764	117	1638	112	1568	110	1571	108	1062	101	1369	BLK 9/1571 KAPSOYA STE & S
		2398415	WILSON KIPROTICH BARMAO	01450992597	54	756	53	742	53	742	51	499	30	421	40	537	PLT B/9 1574 KAPSOYA
		2398417	WILSON KIPROTICH BARMAO	01451013492	39	546	40	560	43	602	46	528	44	510	47	554	PLT B/9 1574 KAPSOYA
		2398420	WILSON KIPROTICH BARMAO	01450992605	61	854	51	714	56	784	51	628	65	882	54	736	B/1576 KAPSOYA M 1
		2398468	DORCAS CHEMESON MOSONG	01450992589	46	644	59	826	56	784	51	624	59	785	53	742	B/1576 KAPSOYA M2
		2405941	JOSEPH ISEME KUCHIO	01450996945	132	1848	137	1918	139	1946	121	1707	97	1279	124	1809	BLK 9/1563 KAPSOYA
		2405943	RACHEL KIYONDI	01450996978	73	1022	70	980	78	1092	72	931	34	449	30	456	KAPSOYA HSE 9/1578
		2405944	LEO KIPKIRUI KERICH	01451041725	181	2534	189	2646	193	2702	179	2089	176	2497	156	2426	PLT B/9/ 1560 KAPSOYA
		2415077	DANIEL A KORIR KIPKURUI	01451159907	79	1106	85	1190	68	952	61	1024	70	1201	62	953	9/1602 KAPSOYA SQ 1
		2418988	LINAH JEPKEMBOI LAGAT	01451166969	47	658	59	826	54	756	51	840	24	390	38	568	B9/1646 KAPSOYA SITE AN SERVICES
		2432748	JOSEPH NG'ANG'A NJOROGE	01451122756	36	504	39	546	43	602	34	591	42	616	39	552	P/N 1665 KAPSOYA
		2432749	JOSEPH NG'ANG'A NJOROGE	01451092256	46	644	45	630	49	686	39	610	38	661	46	752	P/N 1665 KAPSOYA
6	9292	2432750	JOSEPH NG'ANG'A NJOROGE	01451122772	84	1176	93	1302	78	1092	59	877	77	1360	70	1179	P/N 1665 KAPSOYA
		2435050	GEOFFEY KIPKOSGEI CHEMAOI	01451019085	59	826	60	840	69	966	56	861	56	923	53	865	PLOT B/9/1660 KAPSOYA HSE1
		2435051	GEOFFEY KIPKOSGEI CHEMAOI	01451019101	70	980	75	1050	62	868	48	779	61	936	67	1012	PLOT B/9/1660 KAPSOYA HSE2
		2461075	EMILY NALIANYA	01451158776	109	1526	102	1428	94	1316	98	1576	86	1353	89	1397	ISOLATED KAPSOYA
		2467518	DANIEL KIBET TOWETT	01451158750	57	798	61	854	70	980	56	861	66	1157	69	1183	1543 KAPSOYA
		2479257	ALFRED MURIITHI GATUMU	01451157778	63	882	60	840	64	896	60	790	64	853	67	923	P/NO B9/1568 KAPSOYA
		2479258	JAPHETH OKUMU AGUMBA	01451157828	47	658	52	728	49	686	45	565	48	617	35	523	ELGEYO/KAPSOYA BLK 9/1535
		2479633	STEPHEN KINGORI KAGOMBE	01451092280	76	1064	79	1106	75	1050	70	1083	70	1101	51	726	BLK 9/1537 KAPSOYA
		2481730	PETER BARMAO CHIRCHIR	01450992217	86	1204	73	1022	69	966	80	1415	74	1173	68	1000	BLK 9/1537 KAPSOYA
		712142	FREDRICK MUYOMA WANJALA	22120372366	533	8915	387	6482	398	6739	579	8106	560	7840	566	7924	1704 KAPSOYA
		715549	JOSEPH OKUMU OSELLU	22120421585	232	3770	196	2800	394	6531	406	5684	401	5614	4111	57554	1485 KAPSOYA ESTATE HSE 4
		715658	ACCALEY BIWOTT	22120372382	116	1589	116	1594	105	1430	117	1638	120	1680	110	1540	PLOT 1304 KAPSOYA
		715679	EVERLYNE CHEPCHUMBA	22120426105	173	2470	110	1520	19	305	179	2506	181	2534	190	2660	1684 KAPSOYA
		715681	REUBEN ILUNDANGA MBARANI	14104375333	83	1227	86	1211	93	1353	89	1246	82	1148	96	1344	9/1709 KAPSOYA
		722589	BARNABAS KORIR	22120480524	33	460	30	407	19	280	22	308	23	322	29	406	B 9/1324 KAPSOYA
		722590	MISIA M M	22120480805	121	1707	97	1279	124	1809	132	1848	137	1918	139	1946	PLT 39/1325 KAPSOYA
		722591	JULIUS M KIPTARUS	22120361278	72	931	34	449	30	456	73	1022	70	980	78	1092	PLT 39/1325 KAPSOYA
		722592	PRAXIDES CAROLINE SIMIYU	22120361484	179	2089	176	2497	156	2426	181	2534	189	2646	193	2702	1287 KAPSOYA
		722593	JONAS KIPRONO METTO	22120480573	58	784	46	541	46	396	60	840	64	896	59	826	PLT 39 1325
		722596	DAVID KIPKOECH KIPCHUMBA	22120372168	5	178	6	188	3	152	7	98	6	84	2	28	PLT 1323 BLK 9 KAPSOYA
		722597	FRANCIS KIPKOSKEI	22120361633	62	759	45	522	24	353	55	770	69	966	67	938	PLT 1323 BLK 9 KAPSOYA
		722598	CHRISTINE CHEPKOECH BARTOCH	22120372044	14	258	32	420	14	261	33	462	26	364	29	406	PLT 1323 BLK 9 KAPSOYA
		722600	PHILIP M GACHUBE	22120361492	127	1800	130	1831	77	1020	143	2002	147	2058	139	1946	PLT 1323 BLK 9 KAPSOYA
		722601	MILKA J SIRMA	22120361450	123	1779	215	3983	300	5579	316	4424	312	4368	332	4648	PLT 9/1215 KAPSOYA
		722608	ISMAIL K SORGOR	22120359223	155	2194	111	1536	126	1784	200	2800	209	2926	213	2982	PLT 9/1215 KAPSOYA/NEAR BAPTIST CHURCH
		722609	ISMAIL K SOROGR	22120359207	88	1165	60	745	108	1178	109	1526	114	1596	125	1750	BLK 9/2698 KAPSOYA
		722611	ERNEST KEMBOI SITIENEI	22120359157	77	972	442	7354	120	1866	466	6524	487	6818	480	6720	PLT 9/967 KAPSOYA
		724078	LEONARD OUMA WANDERA	22120359199	109	1361	133	2005	205	3788	263	3682	266	3724	258	3612	PLOT B9-1208 KAPSOYA.
		730004	CATHERINE JEBET CHEMWENO	22120372127	123	1693	57	681	81	1048	135	1890	137	1918	143	2002	PLT 9/2226 KAPSOYA.
		730522	JACKSON NDOLI KAYUGIRA	22120480821	65	842	61	760	44	505	66	924	65	910	60	840	P/N 1497 KAPSOYA S/Q
		730539	TIMOTHY KIPKOSGEI RUTTO	22120480763	10	257	12	301	5	201	10	140	6	84	9	126	P/N 1497 KAPSOYA
		730546	JOSEPH MURUNGA WANZALA	22120480789	32	453	28	389	23	927	36	504	30	420	39	546	P/N 1497 KAPSOYA SITE & SER
		731862	NAOMI CHEPKEMBOI CHEBOI	22120467471	114	1600	13	252	10	219	151	2114	149	2086	139	1946	P/N 91/1474 KAPSOYA
		732973	SUSAN JEBICHII KOSGEY	22120426295	36	456	30	407	31	421	39	546	43	602	40	560	9/1414 KAPSOYA
		733367	JANE LUNG'AZO KHANIRI	22120359173	156	2209	112	1549	95	1298	156	2184	170	2380	167	2338	1466 CHEPKOILEL

		733487	SALINA J AYABEI	22120361351	52	223	64	661	73	795	61	854	68	952	70	980	PLOT 9/1421 KAPSOYA
		733657	PAUL KIPTUM TEKI	22120480490	329	5497	300	4974	285	4761	320	4480	318	4452	301	4214	BLK 9/1420 KIPSOEN
		733763	JOYCE CHEMUTAI KITALA	22120361476	130	1846	143	2030	126	1712	153	2142	141	1974	148	2072	PLT 1398 KAPSOYA
		733894	DORIS L MATANDA	22120432533	291	4819	246	4075	265	4795	298	4172	290	4060	287	4018	1384 KAPSOYA
7	21058	733998	TABITHA JEPKORIR CHIRCHIR	22120372309	12	233	127	1764	87	1161	134	1876	139	1946	132	1848	1384 KAPSOYA
		734293	BEATRICE WANJIRU THOMBE	22119606691	117	1610	78	1019	83	1114	120	1680	128	1792	119	1666	PLT 1395/89 KAPSOYA
		734317	NAOMI C CHEBOI	22120467455	71	938	50	589	54	660	76	1064	73	1022	71	994	9 /1397 KAPSOYA
		734345	ENOCK OPUKA	22120432483	159	2281	164	2383	140	2211	159	2226	155	2170	150	2100	9/1397 KAPSOYA
		734591	JOSAM NANDWA MUSAMBAYI	22120372176	1140	19378	66	805	173	2309	1321	18494	1301	18214	1260	17640	9/730 KAPSOYA
		734791	ALICE CHEBET KIRUI	14105721907	135	1876	134	1856	179	2557	183	2562	189	2646	170	2380	PLT 9/1717KAPSOYA
		735194	HENRY KIPLAGAT KOROS	22120359090	63	781	50	589	59	570	67	938	69	966	60	840	PLT 9/17141 KAPSOYA
		735246	ST PATRICKS HOUSE	22120421437	336	5500	691	11622	533	9011	589	8246	576	8064	550	7700	PLOT 1314 KAPSOYA
		735328	CECILIA CHEBET MENGICH	14140726010	94	1423	93	1324	99	1453	98	1372	92	1288	94	1316	ELGEIYO 9/1715 B ORRDER
		735329	JOYCE CHEROTICH KIRUI	22120480532	26	391	40	498	44	508	45	630	49	686	48	672	BLK 9/1647 KAPSOYA
		735750	MARGARET MUTHONI THUMBI	01451209876	101	1354	156	2205	110	1476	167	2338	159	2226	170	2380	PLOT 9/1720 KAPSOYA EST(MAIN)
		735752	MARIA AKINYI AWITI	01451075558	49	569	27	373	35	400	39	546	45	630	51	714	PLT B9/373 KAPSOYA
		2013810	PHILIP M GACHUBE	22120361518	63	815	45	544	64	816	60	840	69	966	66	924	9/1734 KAPSOYA
		2015550	AMINA NYAWIRA KANNNENJE	22120361252	38	493	42	515	47	568	48	672	42	588	45	630	PLOT B/1700 KAPSOYA (MAIN HSE)
		2025273	LABAN R.TENDET NDIEMA	22120372259	94	1259	58	702	228	4136	201	2814	211	2954	230	3220	P/N 9/1380 ELGEYO
		2026113	MARTHA DENG GARANG	22120372242	215	3461	139	1948	199	2927	220	3080	210	2940	199	2786	P/N 9/1380 ELGEYO
		2026168	ZACHAYO MADEGWA SHIGOGOD	22120372267	51	594	40	496	27	384	54	756	51	714	55	770	P/N 1377 KAPSOYA SITE
		2026174	ZACHAYO MADEGWA SHIGOGOD	22120372283	16	274	27	376	11	231	25	350	20	280	31	434	PLOT 9/1708 KAPSOYA
		2029703	MUSA YATOR KANDAGOR	22120361500	78	1105	126	1692	288	5347	290	4060	276	3864	286	4004	1282 KAPSOYA
		2031995	AMINA NYAWIRA KANNNENJE	22120361625	26	367	27	376	28	413	20	280	28	392	25	350	PLOT NO 1214 KAPSOYA
		2034398	JACKSON KOMEN CHELIMO	22120359009	176	2508	117	1629	125	1772	180	2520	189	2646	191	2674	1289 KAPSOYA
		2035952	PERIS MOKOMBA ONDICHO	14141177676	66	670	137	1904	105	1458	151	2114	146	2044	149	2086	PLT 9/227/KAPSYA HSE2
		2037237	JOSEPH KWALIA KEMU	22120442060	144	2198	102	1396	107	1490	145	2030	139	1946	154	2156	PLT 9/974 KAPSOYA
		2037556	JEREMIAH KOSGEI TANUI	22120480458	24	349	40	498	36	467	35	490	40	560	39	546	PLT 9/974 KAPSOYA
		2039589	JACKSON CHERUIYOT KIGENNY	22120480797	214	3513	185	2684	57	750	259	3626	251	3514	261	3654	9/1225 KAPSOYA
		2039730	PATRICK K KITELA	22120361310	123	1584	99	1362	96	1457	126	1764	123	1722	130	1820	KAPSOYA B9/960 KAPSOYA
		2040750	STEPHEN KIPLIMO NGOSOSEI	22120421577	94	1248	145	2040	69	884	159	2226	150	2100	161	2254	BLK 9/411 KAPSOYA
		2043038	BENJAMIN CHESEREK CHERUIYOT	22120361567	88	1131	96	1300	106	1466	117	1638	109	1526	124	1736	BLK 9/411 KAPSOYA
		2045069	CATERLINE CHESIRE	22120359017	73	935	69	884	98	1347	98	1372	97	1358	100	1400	PLT B9/957 KAPSOYA
		2046329	WILSON KIPROTICH BARMAO	22119670879	57	722	72	923	60	831	59	826	60	840	55	770	PLT 9/1693 KAPSOYA
		2047783	DAVID KIPKOECH KIPCHUMBA	22120372143	22	182	25	365	24	356	20	280	18	252	29	406	BLK 9/950 KAPSOYA
		2049902	BEATRICE WANJIRU THOMBE	22120432582	58	704	53	636	101	1393	119	1666	122	1708	116	1624	9/978 KAPSOYA
		2049904	BEATRICE WANJIRU THOMBE	22120432608	82	752	61	679	56	618	90	1260	85	1190	87	1218	P/N 9/1689 SITE&SERVICE
		2049906	BEATRICE WANJIRU THOMBE	22120432624	73	935	51	605	52	625	78	1092	83	1162	72	1008	BLK 9/1686 KAPSOYA
		2049911	MARGARET MUTHONI THUMBI	22120432640	52	613	78	1008	76	993	73	1022	78	1092	77	1078	P/N 1686 KAPSOYA EST
		2049913	MARGARET MUTHONI THUMBI	22120432665	210	3374	195	2836	193	2817	218	3052	220	3080	213	2982	P/N9/966 ELGEYO BORDER
		2050978	BASHIR MARIKO WANAMBUKO	22120361369	56	682	34	449	161	2479	178	2492	196	2744	190	2660	KAPSOYA 985
		2054768	SAMUEL OLUOCH ODUOR	22120480474	83	668	83	668	128	1816	133	1862	130	1820	143	2002	P/N 1685 KAPSOYA EST
		2060944	CAROLINE JEMELI AYABEI	22120361336	32	420	42	509	11	222	43	602	48	672	40	560	PLT 1290/9 KAPSOYA AFTER PAPTIST CHURCH.
		2062054	ESTHER WAITHERA KIBUNGI	22120359181	190	2448	102	1294	42	593	200	2800	211	2954	191	2674	PLT 9/975 KAPSOYA
		2065924	JAMES KIBET NYOLEI	22120467570	68	853	60	735	64	823	60	840	65	910	65	910	BLK 9/1181 KAPSOYA
		2066014	WILFRED KIPLAGAT MENGICH	22120480839	41	573	32	449	14	276	34	476	46	644	48	672	2202 KAPSOYA
8	9217	2070988	PHILIP KWAMBAI S/N 5075	22120480516	255	3385	99	1365	526	9320	599	8386	609	8526	601	8414	B9/1761/KAPSOYA ESTATE
		2071258	SAMMY KIPKOECH ROTICH	22120480748	116	1630	103	1576	50	612	107	1498	126	1764	118	1652	B9/1761/KAPSOYA ESTATE
		2073460	ROSE JEPKEMOI KIPSOI	04225852021	51	583	45	544	49	583	45	630	49	686	46	644	B9/1761/KAPSOYA ESTATE

		2073897	KIMUTAI CHERUIYOT KOLLUM	22120372317	69	867	55	663	58	696	54	756	59	826	56	784	B9/1761/KAPSOYA ESTATE
		2082113	MARGARET LUSIMBA MAALUMU	22120361344	106	1433	106	1433	110	1670	101	1414	132	1848	121	1694	ELD MUN/BLOCK 9/1015
		2089850	ELMADA AUMA ODENY	22120359033	11	243	9	223	8	212	15	210	11	154	11	154	PLOT NO 9/951 KAPSOYA
		2090580	LAWRENCE OMAI MUKU	22120372119	137	1916	93	1248	104	1441	139	1946	150	2100	154	2156	956 KAPSOYA
		2096365	BEATRICE HOKAH OSABWA	22120372333	112	1531	75	897	128	1819	130	1820	130	1820	135	1890	PLOT 9/1697 KAPSOYA
		2115889	ENOCK WANEKEYA OPUKA	22120421593	147	2247	120	1869	198	3030	199	2786	208	2912	212	2968	PLOT 9/983 KAPSOYA
		2115891	ENOCK WANEKEYA OPUKA	22120421619	60	1427	50	1179	47	1221	65	910	61	854	63	882	PLT 9/983 KAPSOYA
		2116102	WILLIAM LUAL RING	22120421320	16	291	54	638	44	547	60	840	60	840	69	966	9/923 KAPSOYA
		2118643	ELMADA AUMA ODENY	22120359058	374	6175	270	4885	266	4429	398	5572	403	5642	416	5824	PLT 968 KAPSOYA
		2134619	JOSEPH KIPCHIRCHIR BOINETT	22120372408	85	1581	45	616	70	1010	90	1260	89	1246	98	1372	PLT 9/992 KAPSOYA/HSE
		2138649	ALLAN LENNOX OPIJAH	22120421395	250	3921	150	2078	100	1462	251	3514	249	3486	263	3682	BLK/962 KAPSOYA
		2144202	BENSON KIARIE NJIHIA	22120421338	97	1203	86	956	57	787	100	1400	93	1302	113	1582	P/N 9/989 KAPSOYA SITE
		2144203	BENSON KIARIE NJIHIA	22120421353	44	940	28	644	38	823	51	714	42	588	56	784	PLT 9/989 KAPSOYA
		2147073	JAPHET NATANDULA OTIKE	22120442185	108	1224	128	1762	137	1932	149	2086	155	2170	159	2226	1748 KAPSOYA HSE 1
		2151224	KINIKONDA ONYANGO ACHIENG	22120372424	247	4011	150	2139	152	3172	251	3514	262	3668	259	3626	28
		2154780	IMMACULATE SEIN MUNERIA	22119606824	135	1923	119	1660	131	1866	148	2072	150	2100	150	2100	PLT 8/1745 KAPSOYA
		2162886	PHILIP KIMITEI KIMAIYO	22120480607	27	371	39	491	24	385	45	630	44	616	46	644	1705
		2162979	ISAAC NGUONO JOEL AUM	22119606592	50	615	41	283	29	402	51	714	50	700	50	700	1705
		2164624	ROBERT KIBET CHESEREK	22120426386	209	3354	129	1813	162	2347	261	3654	259	3626	251	3514	1705
		2175433	FULL GOSPEL CHURCHES OF KEN	22120421379	45	945	86	1695	73	1472	89	1246	90	1260	82	1148	1278 KAPSOYA
		2177051	PRISCA JEPKURUI	14105827233	66	921	383	6936	517	8641	399	5586	401	5614	403	5642	1278 KAPSOYA
		2180490	KIMUTAI CHERUIYOT KOLLUM	22120372291	69	853	56	629	39	495	69	966	70	980	65	910	P/N 9/561 KAPSOYA
		2182036	KIMUTAI CHERUIYOT KOLLUM	22120372358	77	1098	65	805	72	931	89	1246	70	980	73	1022	B/9/593 /3 KAPSOYA
		2193872	AUDREY CHEPKEMOI MUNAI	22120372069	88	1232	85	1190	89	1246	59	844	81	1102	78	1094	9/598 KAPSOYA
		2193873	TONNY AMBEHI AMALEMBA	22120372085	65	910	61	854	63	882	60	1427	50	1179	47	1221	9/598 KAPSOYA SHOP 2
		2202521	SIMON NDIRITU KANYATTA	22120359025	139	1946	150	2100	154	2156	137	1916	93	1248	104	1441	AT KAPSOYA
9	21333	2205125	IBRAHIM WAFULA KHATETE	22120432558	43	602	59	826	51	714	14	261	34	425	47	582	9/636 KAPSOYA
		2205132	DORICE LUKOYE MATANDA	22120432574	43	602	41	574	49	686	36	390	62	741	58	740	PLOT 636 KAPSOYA
		2221255	ARNOLD KOECH LALANG	04225792243	150	2100	151	2114	145	2030	116	1982	143	2646	101	1818	ELGEYO ROAD KAPSOYA PLOT 9/628
		2226704	LEAH JEPKORIR KIPROP	14140917361	30	420	34	476	33	462	34	550	35	622	31	551	9 /2203 KAPSOYA
		2226740	ST. MARY `S MEDICAL CENTRE	22120467448	125	1750	130	1820	128	1792	130	3146	134	3018	133	2895	PLOT 934 KAPSOYA
		2231500	STEPHEN NDARUA MUCHIRI	22120432699	79	1106	75	1050	87	1218	82	1171	80	981	85	1170	BLK 9/578 KAPSOYA
		2246633	GEORGE WAWERU MBUGWA	14105721915	70	980	66	924	70	980	69	846	70	916	79	1112	KAPSOYA B 586
		2247175	ZIPPORAH WANJIRU NJEHIA	22120416023	67	938	69	966	60	840	63	781	50	589	59	570	B9/583 KAPSOYA
		2254517	MEDICAL MISSIONARIES OF MAF	14140005266	45	630	49	686	48	672	26	391	40	498	44	508	P/N 9/582 ELGEYO BORDER RD
		2256694	FLORENCE CHEPYEGON TUM	22120361575	139	1946	132	1848	150	2100	128	1771	132	2047	147	2439	KAPSOYA SITE &SERVICE B 9/590
		2257508	NANCY WERE ODUMA	22120421452	50	700	53	742	62	868	66	807	61	824	40	518	1615 KAPSOYA
		2261913	MARGARET JESANG KOECH	22120426303	82	1148	89	1246	80	1120	67	882	79	1072	86	1236	9/1616 KAPSOYA
		2266114	NEHEMIAH NDEREBA WACHIRA	22120432749	53	742	50	700	58	812	52	675	46	528	45	559	PLT/591 KAPSOYA
		2270952	MIKE GITAHI KIHATO	22120359132	47	658	41	574	44	616	40	686	48	708	43	628	PLT/591 KAPSOYA
		2273363	JOHN CHERUIYOT KIBOSIA	22120467372	60	840	59	826	55	770	44	500	56	737	0	134	P/N 9/621 ELGEYO BORDER
		2279871	PETER GACHERU NGIGE	22120480722	151	2114	145	2030	156	2184	153	2672	155	2067	115	2095	PLT B 9/593/COMM/7 KAPSOYA/SHOP
		2281569	ISAAC NDEDE	22120361435	189	2646	189	2646	190	2660	175	2811	185	2819	185	2876	PLT 9/593 COMM/7 KAPSOYA
		2297044	SHADRACK KIPLAGAT KOSKEI	14107596232	76	1064	73	1022	71	994	71	938	50	589	54	660	9/2174 KAPSOYA
		2310486	STELLA CHELIMO KIMEI	22120467489	252	3528	256	3584	240	3360	245	5210	235	4606	234	4452	9/2174 KAPSOYA
		2310577	CORNELIUS WAFULA BUNDUKI	22120467505	51	714	52	728	56	784	56	708	59	786	52	724	9/593 KAPSOYA
		2310578	NAOMI NKATHA NKONGE	22120467521	179	2506	170	2380	161	2254	165	2450	177	2728	177	2728	9/593 KAPSOYA
		2332694	JOB KIPKURGAT NGETICH	22120359140	80	1120	89	1246	88	1232	81	1102	78	1094	59	844	593/4B SHOP 6
		2334410	ROSE JEPKEMOI KIPSOI	22120426188	48	672	40	560	45	630	18	307	44	555	24	371	PLT B/1629 KAPSOYA

		2334411	ROSE JEPKEMOI KIPSOI	22120426204	66	924	63	882	69	966	64	836	62	835	60	865	BLK 9/707 KAPSOYA
		2347158	MICHAEL CHEBURET CHESEREM	04220779179	70	980	70	980	71	994	65	786	64	882	59	785	B-9- 1622 KAPSOYA
		2349640	STANLEY KIPKEMOI KIPTOO	14103988508	39	546	40	560	43	602	46	528	44	510	47	554	BLK 9_1641 KAPSOYA STER
		2368851	ROIDA AFANDI ASAMBU	22120467356	10	140	6	84	9	126	10	257	12	301	5	201	1610 KAPSOYA
		2376957	GRACE INGAHIZA SUBA	22120432715	129	1806	137	1918	142	1988	83	1130	124	1840	114	1783	PLT NO B/9/1587
		2377487	JANE MUTHONI	22120467299	80	1120	89	1246	88	1232	81	1102	78	1094	59	844	B 9/1609 KAPSOYA
		2381344	PETER KEMBOI	22120467547	87	1218	83	1162	94	1316	88	1214	94	1344	83	1267	PLT 1572 KAPSOYA
		2381346	MARIAM NYAKANGO	22119670986	129	1806	134	1876	117	1638	120	1888	119	1116	55	672	9/1597 KAPSOYA
		2381348	MMBONE SOLANCE ANGEL	22120467588	166	2324	149	2086	170	2380	149	2226	143	2181	168	2310	B9/1606 KAPSOYA
		2385286	GIBSON KIPKOSGEI KEMBOI	22120480706	91	1274	98	1372	110	1540	101	1384	100	1461	96	1241	P/N B/1569 KAPSOYA
		2396185	GEORGE ALEX MUKUNYA	22120421536	70	980	70	980	71	994	65	786	64	882	59	785	PLT B/9 1574 KAPSOYA
		2405959	CRISPUS KAIRA REBUAHI	22120421460	60	840	64	896	59	826	58	784	46	541	46	396	PLT.B9/1589 KAPSOYA
		2405963	ROSE CHEMUTAI BARCHOK	22120421486	7	98	6	84	2	28	5	178	6	188	3	152	PLT B9/1589 MAIN HSE.
		2405964	LILIAN ATIENO OKECH	22120421502	55	770	69	966	67	938	62	759	45	522	24	353	ISOLATED KAPSOYA
		2405965	PURITY MORAA KIRERA	01451031726	33	462	26	364	29	406	14	258	32	420	14	261	980 KAPSOYA
		2406065	LEONARD LEONARD NGEIWO	22120421544	143	2002	147	2058	139	1946	127	1800	130	1831	77	1020	980 KAPSOYA
		2414382	JOYCE NJERI KUBUKUBU	22120432673	41	574	40	560	43	602	31	551	42	637	26	432	9/1602 KAPSOYA HSE 2
		2417814	ROSE NYAWIRA GITHAIGA	22120421510	69	966	67	938	86	1204	71	1110	77	1191	77	1130	PLOT NO.9/1645 KAPSOYA
		2418871	RICHARD WANYONYI WESONGA	22120415801	67	938	57	798	59	826	51	747	52	744	60	841	PLOT NO 9/1645 KAPSOYA
		2418873	JANE NJERI KAMAU	22120415827	61	854	64	896	67	938	64	1098	62	951	55	796	PLOT NO 1644 SITE AND SERVICE.
		2418876	PATRICK MUTHEE MACHARIA	22120415843	98	1372	103	1442	90	1260	91	1635	81	1304	75	774	PLOT NO. 1644
		2418878	NELLY AGUFANA HOYT	22120415983	9	126	13	182	19	266	22	386	17	315	13	273	P/N 9/1648 KAPSOYA
		2418879	CLEMENT NYAATA OBIRI	22120416007	45	630	56	784	50	700	38	590	38	570	44	606	P/O 9/1648 KAPSOYA
		2422308	ENOCK WANEKEYA OPUKA	22120432525	98	1372	105	1470	89	1246	62	1044	62	1043	94	1538	B9/1646 KAPSOYA SITE AN SERVICES
		2422309	ENOCK WANEKEYA OPUKA	22120432541	165	2310	142	1988	152	2128	147	2731	166	2867	167	2800	B 9/1646 KAPSOYA SITE AN SERVICE
10	22337	2432069	KIBET - KIPTUM	22120361534	55	770	53	742	56	784	51	826	48	709	51	726	9/1634 KAPSOYA
		2432073	KIBET - KIPTUM	22120361559	59	826	65	910	58	812	58	962	47	692	58	844	P/N 9 1665 KAPSOUYA
		2434289	GEOFREY KIBITOK A LETING	04225847708	140	1960	134	1876	146	2044	78	1270	131	2479	81	1352	PLT 9/1659 KAPSAYA
		2436407	CHRISTINE ANGOLO AMANYA	22120372051	50	700	46	644	49	686	43	530	30	503	36	635	PLT 9/1655 KAPSOYA
		2440403	PAULINE JEPKEMBOI TOROITICH 8	14105994793	175	2450	179	2506	192	2688	98	1643	153	2927	89	1578	9 /1654 KAPSOYA
		2440405	PAULINE JEPKEMBOI TOROITICH 8	22120358969	179	2506	181	2534	190	2660	173	2470	110	1520	19	305	9/1654 KAPSOYA
		2440407	PAULINE JEPKEMBOI TOROITICH 8	22120358985	89	1246	82	1148	96	1344	83	1227	86	1211	93	1353	PLT 1652 KAPSOYA
		2440408	PAULINE JEPKEMBOI TOROITICH 8	22120358852	120	1680	111	1554	119	1666	119	1717	84	1154	95	1378	PLOT 1651 KAPSOYA
		2440409	PAULINE JEPKEMBOI TOROITICH 8	22120358878	33	462	32	448	32	448	32	563	31	506	35	536	PLOT 1651 KAPSOYA
		2440410	PAULINE JEPKEMBOI TOROITICH 8	22120358894	150	2100	156	2184	168	2352	116	1537	147	2236	91	1337	PLT 1650/KAPSOYA
		2440411	PAULINE JEPKEMBOI TOROITICH 8	22120358910	112	1568	101	1414	105	1470	108	1640	77	1026	101	1411	PLT 1650/KAPSOYA
		2440412	PAULINE JEPKEMBOI TOROITICH 8	22120358936	69	966	74	1036	75	1050	67	814	67	849	33	426	PLT 1650/KAPSOYA
		2440415	PAULINE JEPKEMBOI TOROITICH 8	22120358951	67	938	69	966	60	840	61	719	55	720	0	134	PLT 1650/KAPSOYA
		2442229	EZRA KIPTOO CHERUIYOT	22120372325	33	462	39	546	31	434	30	537	12	278	22	386	BLK 9/1553 KAPSOYA EST
		2482202	GERRY LUVAI INYANGALA	22120480730	119	1666	106	1484	111	1554	41	632	109	1977	82	1322	P/N 1534 KAPSOYA
		2483615	NEHEMIAH NDEREBA WACHIRA	22120432764	120	1680	116	1624	110	1540	78	1149	78	1081	120	1801	ISOLATED KAPSOYA
		2483616	NEHEMIAH NDEREBA WACHIRA	14106008734	133	1862	139	1946	143	2002	132	1981	119	1898	121	1903	ISOLATED KAPSOYA
		2483617	NEHEMIAH NDEREBA WACHIRA	22120432806	47	658	45	630	43	602	46	627	46	587	50	641	ISOLATED KAPSOYA
		2483618	NEHEMIAH NDEREBA WACHIRA	22120432822	119	1666	110	1540	123	1722	114	2060	67	1034	103	1656	PLOT 9/1517 KAPSOYA
		711307	BENJAMIN KIPRONO CHEMOIYAI	14140568487	168	2697	107	1647	47	597	206	2884	199	2786	201	2814	AT KAPSOYA
		712058	GRACE KIPLAGAT KIPROTICH	14141122375	78	1149	78	1081	120	1801	120	1680	116	1624	110	1540	PLT NO B9/1401 ELGEYO BORDER RD
		712090	JOEL KIPKEMOI KOECH	14140576134	46	627	46	587	50	641	47	658	45	630	43	602	B/9/1370 KAPSOYA
		722534	JENIFFER JEPKORIR TOMNO	01451080699	78	1321	79	1259	98	1561	99	1386	94	1316	104	1456	9/1317 KAPSOYA
		722554	CLIUS WATAKO	22119671216	62	1044	62	1043	94	1538	98	1372	105	1470	89	1246	PLOT 9/1303 KAPSOYA

		722562	JOSEPH RONO NGIRISEY BARNO	14140568537	58	807	58	756	28	418	63	882	66	924	66	924 P/NO 1312 KAPSOYA
		722564	JOSEPH NYONGESA NYAROTSO	14140568263	110	1692	180	2738	143	2181	241	3374	224	3136	232	3248 P/NO 1312 KAPSOYA
		722565	SAMUEL SAMOEI MENGICH	14140568271	122	1879	125	1816	91	1320	141	1974	127	1778	134	1876 P/N 9/1300 KAPSOYA
		722566	REUBEN IRERI ROTICH	14140570079	7	209	16	291	8	215	5	70	13	182	8	112 P/N 9/1300 KAPSOYA
		722567	REUBEN IRERI ROTICH	14140570053	84	1249	164	2476	69	953	180	2520	198	2772	188	2632 PLT NO B9/1315 KAPSOYA.
		722570	JOSEPH K KEMEI	14141190232	8	208	9	201	28	409	24	336	12	168	17	238 PLT B9/1315 KAPSOYA
		722571	WILFRED SHINYAKA ANDABWA	14141122748	192	2828	123	1740	206	3717	220	3080	201	2814	192	2688 PLT.1316 KAPSOYA
		722572	TOM BANDA	14141122755	142	1975	119	1610	225	2657	235	3290	239	3346	235	3290 P/NO 9/1296 KAPSOYA
		722573	TOM BANDA	14141122763	79	1097	250	4337	102	1337	261	3654	258	3612	261	3654 P/NO 9/1296 KAPSOYA
		722575	RICHARD K SUGUT	14140575995	30	453	39	507	47	609	46	644	46	644	49	686 9/1295 KAPSOYA
		722576	JONAH KIPTANUI TARUS	14140575961	112	1732	168	2542	109	1498	209	2926	200	2800	195	2730 PLOT NO 9/1295 KAPSOYA
		722577	STEPHEN KIMARU TIONY	14141122771	124	1760	71	926	108	1663	111	1554	104	1456	132	1848 9/1295 KAPSOYA
11	22334	722579	C/O THOMAS KEMEI	14140576191	80	1154	4	175	359	5775	363	5082	323	4522	345	4830 HSE 9/1295 KAPSOYA
		722580	STEPHEN MAKEWIT MOSONG	14141122227	73	1062	137	2038	64	208	198	2772	194	2716	196	2744 PLOT 9/1292 KAPSOYA
		722584	KODERO H M NELLY	14141122425	23	365	39	427	28	259	30	420	29	406	30	420 PLOT 9/1292 KAPSOYA
		722585	PAUL NDARA CHEMOWO	14141122367	57	790	85	1083	112	1603	123	1722	110	1540	117	1638 PLOT 9/1292 KAPSOYA
		722587	JOSECK MOGAKA	14141122235	69	980	181	2754	70	970	210	2940	221	3094	216	3024 PLT 9/1324 KAPSOYA
		722588	JOSECK MOGAKA	14141122243	146	2105	93	1270	93	1402	156	2184	143	2002	151	2114 B 9/1324 KAPSOYA
		729671	STEPHEN KIPLETING RONOH	14141122680	35	505	30	420	24	371	45	630	40	560	39	546 1498 KAPSOYA
		729672	ALEX MUGO	14141190331	40	563	56	723	20	305	63	882	69	966	76	1064 1498 KAPSOYA
		730022	LINUS KIPYEGO	14141122797	60	754	68	978	68	618	82	1148	66	924	70	980 PLT 9/2226/KAPSOYA
		730555	GRACE ATIENO OLALA	04225859869	145	1966	636	11486	102	1409	699	9786	676	9464	639	8946 PL 9/1496 KAPSOYA
		731254	JOHN WAFULA SIMIYU	14140569881	198	2777	80	1081	196	3039	199	2786	206	2884	201	2814 P/N 9/1727 KAPSOYA
		731297	CHEPKECH NANCY MUNERIA	14141122441	130	2039	164	2478	126	1900	169	2366	154	2156	166	2324 PLT 1388 KAPSOYA
		731469	JOSPHAT SAWE BELSOY	14140258964	63	872	146	2179	171	2369	189	2646	191	2674	189	2646 2666 KAPSOYA
		731635	HILLARY KETEM KWAMBAI	14140570202	86	1861	128	1893	114	1520	133	1862	132	1848	136	1904 P/N 91/1474 KAPSOYA
		731887	JOSPHINE C.NGASURA	14140568503	155	2450	169	2482	131	1922	176	2464	154	2156	166	2324 P/N 91/1474 KAPSOYA
		732061	LILIAN WERE	14141122250	73	957	53	721	94	1341	100	1400	92	1288	97	1358 PLT NO 9/572 KAPSOYA
		732127	CHARLES CHOGE S/NO 0144	14140570038	21	244	144	2065	208	3395	269	3766	282	3948	273	3822 PLT NO. 9/572 KAPSOYA
		732137	RUTH WAITHERA KAIRU	14141122540	81	1198	114	1662	103	1516	124	1736	115	1610	132	1848 PLT 1407 KAPSOYA
		732359	COSMAS MUTAI	14141123001	103	1577	129	1909	95	1379	127	1778	121	1694	136	1904 PLT 1411 KAPSOYA
		732523	FLORA JELAGAT CHEBII	14141122334	185	2976	54	691	102	1502	197	2758	213	2982	211	2954 PLT 1471 KAPSOYA
		732697	RISPER JEPCHIRCHIR MAIYO	14141190307	69	897	34	449	51	423	65	910	70	980	74	1036 BLOCK 9/1467 KAPSOYA
		734390	JOSHUA NYAKUNDI NYAKEGO	14141122557	55	756	57	740	87	1254	76	1064	89	1246	80	1120 PN B 1729 KAPSOYA
		734743	BEATRICE BIWOTT	14141190349	175	2811	185	2819	185	2876	189	2646	189	2646	190	2660 BLK 9/1721 KAPSOYA
		734787	EUNIPHAS K KOITABA	14140576167	100	1526	100	1526	83	1051	101	1414	105	1470	98	1372 BLK 9/1721 KAPSOYA
		735343	CELIA JEBET CHELAL	14140569865	30	449	30	449	58	773	55	770	51	714	53	742 BLK 9/1647 KAPSOYA
		735812	TABITHA JELAGAT TANUI	14140575847	26	411	31	439	24	359	25	350	28	392	30	420 PLT B9/373 KAPSOYA
		2021211	DAVID KIPTARUS BIWOTT	14141122821	57	708	64	816	59	824	50	700	46	644	53	742 BLK 9/1386 KAPSOYA ESTATE
		2023604	LOYCE CHEPKORIR BIWOT	14140568370	153	2434	43	557	198	2777	184	2576	179	2506	181	2534 B 9/1383 KAPSOYA
		2030159	ROBERT CHELUGO MININGWO	14140569915	100	1526	193	2948	157	2413	201	2814	200	2800	190	2660 1282 KAPSOYA NEAR CHIEFS CAMP
		2032528	MOSES MACHARIA KARANJA	14140576019	163	2282	158	2380	97	1419	173	2422	195	2730	183	2562 9/1214 KAPSOYA
		2034884	DOROTHY CHEPKEMOI YATOR	14141122524	175	2553	101	1543	224	3914	230	3220	231	3234	237	3318 PLOT 9/1226 KAPSOYA
12	22335	2035025	PAUL - CHEBII	14141122433	102	1471	110	1158	121	1804	126	1764	123	1722	123	1722 KAPSOYA P/N 9/1285
		2035710	JOSEPH KIPCHUMBA LAGAT	14141122722	29	402	41	427	65	870	66	924	69	966	54	756 9/1225 KAPSOYA
		2035900	LEONARD KEITANY	14140570095	29	972	28	434	45	577	46	644	40	560	40	560 PLT 9/1230 KAPSOYA
		2040525	ALICE CHEPNGETICH KANDIE	14141122284	134	2108	24	380	59	847	172	2408	165	2310	170	2380 BLK 9/411 KAPSOYA
		2041500	GRENVILLE KIPLIMO MELLI	14141122292	65	780	80	1184	65	870	78	1092	75	1050	60	840 BLK 9/411 KAPSOYA
		2045141	SUSAN KIMAIYO	14140568362	120	1869	198	3030	147	2247	199	2786	208	2912	200	2800 B 9/957 KAPSOYA

		2049053	RICHARD JAMES KENYATTA	14141122599	182	2928	216	3657	145	2211	192	2688	201	2814	200	2800	PLOT NO. 978 KAPSOYA
		2049515	LOYCE CHEPKORIR BIWOT	14140568388	182	2928	66	878	116	1734	190	2660	183	2562	197	2758	9/979 KAPSOYA
		2049917	NASAMBU ROSE WILFRIDA OGOL	14105721923	180	2896	125	1978	101	1866	194	2716	186	2604	190	2660	KAPSOYA 985 KAPSOYA
		2060035	GODFREY MAINYE SWARA	01451082588	303	5551	90	1186	256	4398	361	5054	378	5292	361	5054	P[LT 1290 KAPSOYA
		2060509	WINSTON HEZRON OTIWI	14140569956	228	4138	187	2909	214	3491	213	2982	218	3052	221	3094	P[LT 1290 KAPSOYA
		2063144	PETER OYUKO ODERO	14140575888	31	378	148	2348	61	670	167	2338	175	2450	162	2268	9/880 KAPSOYA
		2063146	ELIUD KIPYEGO MUTAI	14140575896	138	2164	163	2437	146	2231	170	2380	183	2562	171	2394	9/880 KAPSOYA
		2068167	EZEKIEL KIMELI KIPKITONY	14141122482	168	2688	52	657	121	1808	199	2786	196	2744	191	2674	1016 KAPSOYA
		2076027	PAULINE JEPKEMBOI TOROITICH 8	14141122854	36	390	35	378	33	362	33	462	33	462	36	504	B9/1761/KAPSOYA ESTATE
		2076028	PAULINE JEPKEMBOI TOROITICH 8	14141122862	32	477	34	474	89	1203	84	1176	76	1064	80	1120	9/2655 KAPSOYA
		2086872	JOYCE CHEBICHII KIMOSOP	14140575904	67	961	30	429	38	520	72	1008	68	952	75	1050	9/969 KAPSOYA
		2086873	KENNETH KIPKEMBOI CHEROP	14140575912	116	1736	42	536	53	688	119	1666	131	1834	129	1806	9/969 KAPSOYA
		2091934	LEAH JEMELI MALOT	14140576209	120	1867	147	2198	99	1450	173	2422	166	2324	153	2142	9/1696 KAPSOYA
		2095711	LYDIA JEBET KIMUTAI	14140360836	56	643	203	2790	83	1185	219	3066	225	3150	231	3234	9/1696 KASOYA
		2099160	TERESA CHEMESUNDE MARU	14140568321	22	361	20	291	26	398	32	448	29	406	36	504	PLOT NO. 9/984 KAPSOYA
		2099354	TERESA CHEMESUNDE MARU	14140568339	48	648	53	654	49	629	67	938	73	1022	65	910	PLT NO 9/984 KAPSOYA
		2108244	CAROLINE JEPKEMBOI TUBEI	14141122219	58	807	104	1492	50	639	113	1582	125	1750	110	1540	BLK 9/1219 KAPSOYA
		2113500	LYDIA JEBET KIMUTAI	14140310989	154	2564	156	2205	143	2168	170	2380	165	2310	160	2240	PLOT 9/981 KAPSOYA
		2113505	LYDIA JEBET KIMUTAI	14140258717	59	844	81	1102	78	1094	88	1232	85	1190	89	1246	PLT B9/1219 KAPSOYA
		2115344	CHARLES MUGOYA OMAMBIA	14140570152	232	3653	274	4665	428	7652	453	6342	440	6160	456	6384	PLT 9/983 KAPSOYA
		2118568	PAULINE JEPKORIR KOIMUR	14140569949	154	2451	205	3460	152	2330	223	3122	236	3304	221	3094	PLOT 9/687 KAPSOYA
		2125101	SUSAN JERUTO CHESEREM	01451167470	44	539	36	576	32	363	49	686	54	756	45	630	PLOT 948/9//B KAPSOYA HSE3
		2127967	BENJAMIN CHELIMO S/N 10525	14140569964	32	477	43	557	29	428	30	420	36	504	36	504	KAPSOYA P/N 9/946
		2131501	PIUS KIPCHUMBA KINIGA	14141122466	47	637	20	329	18	313	58	812	68	952	60	840	KAPSOYA PLT 945
		2141747	JUDITH LUMAGO CHIBUTSA	14140568446	83	1227	119	1747	75	1055	120	1680	129	1806	136	1904	PLT 9/989 KAPSOYA
		2159442	ERICK KIBET LEIGH	14140575854	107	1650	103	1459	127	1877	138	1932	134	1876	144	2016	PLT 9/1742 KAPSOYA NEXT TO KINGDOM HALL
		2159586	STEPHEN MALECHE ACHESA	14140569972	40	563	44	567	48	619	47	658	47	658	49	686	PLOT 9/1742 KAPSOYA -KINGDOM HALL
		2159603	MOSES K BIRGEN	14140568438	36	507	69	935	66	906	76	1064	79	1106	71	994	BLOCK 9/1463 KAPSOYA
		2162145	HELLEN JELAGAT KIRISWO	14140575839	65	832	133	1974	138	2098	139	1946	138	1932	141	1974	1167 KAPSOYA
		2180232	JANE LELMET CHUMO	01451161366	122	2331	50	731	50	731	152	2128	167	2338	169	2366	P/N 9/561 KAPSOYA
		2180742	SUSAN JEBICHII KOSGEY	14141122839	150	2163	150	2163	150	2163	146	2044	153	2142	147	2058	B/9/593/3 KAPSOYA
		2180743	GABRIEL KOSGEY LAGAT	14141122847	24	391	17	301	11	239	40	560	39	546	36	504	B/9/593/3 KAPSOYA
		2184985	ANGELA CHEBIEGO KOSGEY	14141122532	70	980	76	1064	71	994	40	424	57	665	16	287	B/9/593/3 HSE 6A KAPSOYA
		2188648	JUDITH LUMAGO CHIBUTSA	14140568453	69	966	78	1092	60	840	55	905	65	973	56	815	9/639 KAPSOYA
		2190726	DANIEL KORIR S/N 04410	14140568412	47	658	47	658	49	686	40	563	44	567	48	619	PLOT NO 9/643
		2191277	ALFRED HITLER MULAMA	14140568461	76	1064	79	1106	71	994	36	507	69	935	66	906	9/3283 KAPSOYA
		2199496	WILLIS ODUOR OMONDI	14140310971	254	3556	243	3402	250	3500	65	874	225	3536	50	612	E/M/BLK 9/588 KAPSOYA
		2199497	FRANCIS KIMANI GITHIEYA	14141122268	249	3486	253	3542	267	3738	132	1766	244	4269	136	2089	E/M/BLK 9/588 KAPSOYA
		2200709	JAMES KIPKEMBOI BARTILOL	01451161382	15	210	11	154	11	154	11	243	9	223	8	212	PLT 588/9 KAPSOYA
		2200793	MOSES MAKONJIO OKELLO	14140568214	189	2646	200	2800	205	2870	198	3090	155	2372	181	2522	PLOT 9/627 KAPSOYA
		2206098	FRED KIMUTAI SAGALA	14141122987	173	2422	166	2324	153	2142	120	1867	147	2198	99	1450	637 KAPSOYA
		2214433	ELIUD KIPCHIRCHIR YEGO	14141122904	126	1764	123	1722	123	1722	102	1471	110	1158	121	1804	PLT BLOCK 9/631 KAPSOYA
		2215758	STANLEY KILIMO KORE	04225859422	66	924	69	966	54	756	29	402	41	427	65	870	PLT BLOCK 9/631 KAPSOYA
		2217955	JAMES ROTICH YATICH	14140576159	54	756	55	770	57	798	47	1221	60	1427	50	1179	P/N 636 KAPSOYA ESTATE
		2231503	FRED KIPKURUI KIBOR	14141122565	50	700	46	644	53	742	57	708	64	816	59	824	ISOLATED KAPSOYA
		2241969	GRACE CHEPKORIR SURTAN	14140568289	66	924	64	896	64	896	65	982	60	1004	55	692	1604 KAPSOYA
		2242366	JOSHUA NYAKUNDI NYAKEGO	14141122698	143	2002	152	2128	162	2268	159	2446	132	1789	152	2242	1604 KAPSOYA
		2257096	EZEKIEL KIPKOECH TUNGE	14141122714	99	1386	83	1162	85	1190	45	739	94	1543	81	1262	KAPSOYA P/N 1262
		2257780	JOHN KIPYEGON SOGOMO	14141122995	65	910	56	784	59	826	34	591	51	752	61	905	1615 KAPSOYA

		2300566	FRED KIPKURUI KIBOR	14141122573	76	1064	89	1246	80	1120	55	756	57	740	87	1254 9/2074 KAPSOYA
13	21149	2312780	JANET WITACHITSA AYIYA	14140568479	61	854	68	952	70	980	52	223	64	661	73	795 9/593 KAPSOYA HSE 2
		2328736	SUSAN WANGUI WAINAINA	14140258618	36	504	30	420	39	546	34	476	28	392	23	322 9/593/ 4B KAPSOYA HSE 6
		2328739	SUSAN WANGUI WAINAINA	14140258642	46	644	41	574	40	560	30	421	39	527	15	301 9/593/ 4B KAPSOYA HSE 1
		2331073	REBECCA JEPKOSGEI KATAM	14140570137	79	1106	71	994	87	1218	73	982	0	134	75	1012 593/4B KAPSOYA
		2345587	CHARLES DULO NYAORO	14141122896	33	462	30	420	30	420	0	134	29	456	32	418 P/N 1640 KAPSOYA
		2376119	GRENVILLE KIPLIMO MELLI	14141122300	79	1106	71	994	87	1218	73	982	0	134	75	1012 PLT 9/1579 KAPSOYA
		2380666	RICHARD KIPKOSGEI KIPTALAM	14141122276	40	560	42	588	45	630	38	498	47	607	42	601 B9 /1606 KAPSOYA
		2383303	MOSES MAKONJIO OKELLO	14141190257	136	1904	148	2072	126	1764	101	1384	135	2005	128	2027 BLK 9/1571 KAPSOYA SITE &S
		2388234	NOAH CHERUIYOT KETER	14140570178	139	1946	141	1974	158	2212	113	2265	130	2657	144	3096 PLOT B./9/1570 KAPSOYA
		2400081	MARY JEMATIA MENGICH	14140568313	120	1680	123	1722	134	1876	89	1287	100	1466	126	1699 B 9/1576 KAPSOYA SQ 1
		2400706	JULIUS KIPKEMBOI NG'ETICH	14140570160	21	294	26	364	20	280	30	390	10	229	0	134 BLK9/1563 KAPSOYA
		2411514	SAMUEL CHERUIYOT KIPITOK	01451161390	53	742	54	756	68	952	45	736	34	531	77	1189 PLT 9/1642 KAPSOYA/HSE
		2411515	ISABELLAH KEMUMA OKEYO	01451218471	46	644	44	616	48	672	41	676	24	421	44	639 1635 KAPSOYA==HSE B
		2411516	DINAH JEROTICH KIGEN	01451161341	31	434	39	546	36	504	32	564	34	542	30	478 1635 KAPSOYA==HSE A
		2423801	CHARLES KAPCHANGA NGEIYWO	14140576183	63	882	66	924	66	924	58	807	58	756	28	418 BLK 9 /1643 KAPSOYA HSE A
		2425920	JULIET CHEMOS BARMASAI	14141190372	109	1526	100	1400	113	1582	89	1576	104	1725	83	1298 BLK 9/1643 KAPSOYA
		2443284	EZEKIEL KIMELI KIPKITONY	14141122490	133	1862	149	2086	151	2114	133	1750	137	2032	83	1760 1548 KAPSOYA
		2443285	KOIMUR KIPLAGAT	14141122508	111	1554	113	1582	119	1666	87	1115	81	1104	110	1626 P/N 9/561 KAPSOYA
		2477574	MOSES MAKONJIO OKELLO	14141190265	45	630	41	574	43	602	41	526	47	607	49	678 9/1565 KAPSOYA
		2477577	MOSES MAKONJIO OKELLO	14141190273	66	924	63	882	69	966	23	443	18	350	9	237 BLOCK 9/1536 KAPSOYA
		711195	GRACE KAVERE MMBOHI	14140035610	3	165	60	807	0	134	56	784	66	924	59	826 9/986 KAPSOYA
14	22538	711436	CHRISTINE CHEPKOECH BARTOCH	14140560583	55	697	18	316	20	356	168	2352	170	2380	176	2464 EMC9/1695 KAPSOYA
		711532	JOHN KIPKETER LANGAT	14140560344	179	2783	156	2397	118	1580	207	2898	199	2786	203	2842 B/9/1706/KAPSOYA S/ SERVICE
		711773	JOAB OTIENO OCHIENG	14141165580	41	526	47	607	49	678	45	630	41	574	43	602 9965 KAPSOYA
		712005	MARY CHEPKURUI MIBEI	14140381782	45	565	48	617	35	523	47	658	52	728	49	686 1706 KAPSOYA
		712068	WILLIAM K KIPLAGAT BOINETT	14140381477	132	1981	119	1898	121	1903	133	1862	139	1946	143	2002 1367 KAPSOYA
		712239	JOSEPH KIMUTAI TUWEI	14140184962	119	1715	197	2206	206	3806	219	3066	221	3094	216	3024 ISOLATED KAPSOYA
		712245	JOSEPH KIMUTAI TUWEI	14140778318	62	741	65	852	29	423	66	924	67	938	59	826 AT KAPSOYA
		715652	GEORGE ODOYO OCHIENG	14140380297	18	319	17	297	16	269	19	266	20	280	19	266 1473 KAPSOYA
		715682	SUSAN CHEPKEMEI KAPKAMA	14140381600	119	1717	84	1154	95	1378	120	1680	111	1554	119	1666 9/1709 KAPSOYA
		715706	DANIEL N WAFULA	14140380438	178	2705	183	2635	170	2358	189	2646	191	2674	181	2534 9/1209 TINYAR
		722528	ABSOLOM A ANGALUKI	14140381733	67	884	48	617	72	1073	65	910	66	924	59	826 1313 KAPSOYA
		724079	MARY KALEHA KISAMBO	14140381691	0	134	33	409	43	542	40	560	40	560	41	574 PLT B9-1208 KAPSOYA
		724083	CHRISTOPHER KIMARU SANG	14140026551	143	1950	107	1516	129	1939	144	2016	154	2156	145	2030 PLT 9/955 /KAPSOYA
		724084	CHRISTOPHER KIGEN	14140035131	75	1165	137	2452	128	2349	197	2758	186	2604	198	2772 BLOCK 9/952 KAPSOYA
		724085	ABWAOO NDAYARA	14140380222	113	2265	130	2657	144	3096	139	1946	141	1974	158	2212 PLOT 9/952 KAPSOYA
		724086	VINTO CHERUIYOT KIPLIMO	14141165747	0	134	29	456	32	418	33	462	30	420	30	420 PLT NO.40 KAPSOYA
		724093	S K BOINET	14140560401	80	1090	65	885	79	1197	87	1218	87	1218	94	1316 B9/1212 KAPSOYA
		724094	ISMAEL K KURUI	14140560534	65	786	64	882	59	785	70	980	70	980	71	994 1207 BLK 9 KAPSOYA
		724095	GABRIEL S CHEPKWONY	14104590329	51	499	30	421	40	537	54	756	53	742	53	742 1207 BLK 9 KAPSOYA
		724096	HENRY KIPLAGAT KOROS	14140560567	46	528	44	510	47	554	39	546	40	560	43	602 1207 BKL 9 KAPSOYA
		724098	ABRAHAM KEINO	14140143968	51	624	59	785	53	742	46	644	59	826	56	784 PLT 1718KAPSOYA
		724099	MOSES OKOTH OINDO	14140560237	41	523	48	593	29	426	50	700	53	742	42	588 PLT 1718 KAPSOYA

		724103	ONGOU ALLOYCE	14140560559	17	306	18	287	12	248	14	196	12	168	11	154	1472 KAPSOYA
		724104	ALLOYCE NYANDIEKA ONGOU	14140026379	30	390	10	229	0	134	21	294	26	364	20	280	PLT 9/1476 KAPSOYA/HSE/NEXT TO MARIAKANI
		724105	ONGOU ALLOYCE	14140035461	216	3810	146	2226	152	2085	234	3276	237	3318	243	3402	PLT B9/1480 KAPSOYA==SQ 2
		724106	JANE CHEPKORIR SANG	14140560443	120	1888	119	1116	55	672	129	1806	134	1876	117	1638	PLT B9 /1480 KAPSOYA==MAIN HSE
		724107	NANCY OKAL	14140381568	149	2226	143	2181	168	2310	166	2324	149	2086	170	2380	PLT B9/1480/KAPSOYA==SQ 1
		724108	DANIEL KIPKOSGEI MURGOR C/O	14140560278	126	1865	152	2475	117	1829	155	2170	143	2002	163	2282	P/N BLK 9/1481 KAPSOYA
		724109	JULIUS KIPTOO SINGOEI	14140560575	110	1571	108	1062	101	1369	126	1764	117	1638	112	1568	P/N BLK 9/1481 KAPSOYA
		724110	JAMES K KITTUR	14140381642	101	1384	135	2005	128	2027	136	1904	148	2072	126	1764	9/1484 KAPSOYA
		724111	JENIFER JEMUTAI ROTICH	14140778508	101	1384	100	1461	96	1241	91	1274	98	1372	110	1540	9/1484 KAPSOYA
		724112	CHARLES K CHERUIYOT	14140380420	113	1675	134	2161	91	1389	138	1932	131	1834	143	2002	B 9/1477 KAPSOYA
		724113	CECILA CHEPKOK	14140560435	229	3989	418	7955	1609	32228	1507	21098	1599	22386	1611	22554	B9/1477 KAPSOYA
		724114	EUNICE JEROTICH TEROTICH	14140560450	192	2881	195	3020	173	2844	209	2926	203	2842	199	2786	B9/1477 KAPSOYA
		724115	CAROLINE ATIENO AWUOR	14140560369	62	806	156	2306	68	933	197	2758	209	2926	203	2842	B9/1477 KAPSOYA
		724119	DAVID KIPKEMOI CHERUTICH	14140560476	30	421	39	527	15	301	46	644	41	574	40	560	PLT.1492 KAPSOYA
		724120	DINAH JUDITH KIPTALA	14140560260	4	171	4	171	3	162	4	56	3	42	7	98	PLOT B/9/1488 KAPSOYA
		724122	A A ADAN	14140140147	73	982	0	134	75	1012	79	1106	71	994	87	1218	PLOT B\9\1488 KAPSOYA
		724124	RASHID KIBIWOT HASSAN	14140380495	31	390	46	574	41	547	52	728	45	630	49	686	PLOT B\9\1488 KAPSOYA
		724127	PETER K MATHENGE	14140560500	83	1130	124	1840	114	1783	129	1806	137	1918	142	1988	P/N 1493 KAPSOYA
		724128	EDWARD B SIMBA	14140560229	81	1102	78	1094	59	844	80	1120	89	1246	88	1232	9/2661 KAPSOYA
		724129	L.K.KOTUT MR L.K.KOTUT	14140560526	22	355	6	180	4	156	24	336	31	434	23	322	9/2661 KAPSOYA
		724130	FRANCIS KARIUKI GICHUKI	14140560468	18	307	44	555	24	371	48	672	40	560	45	630	9/2661 KAPSOYA
15	21831	724131	K KOECH	14140560542	64	836	62	835	60	865	66	924	63	882	69	966	9/2661 KAPSOYA
		724132	KENNETH LAWRENCE CHEBET	14140380537	38	498	47	607	42	601	40	560	42	588	45	630	PLT B9/1498 KAPSOYA
		724133	ZACHARA MOHAMED ISMAIL	14140380248	88	1214	94	1344	83	1267	87	1218	83	1162	94	1316	PLT B9 574 KAPSOYA
		724135	FRED KWAME AMAMO	14140560484	138	1285	77	1162	80	1199	236	3304	249	3486	232	3248	PLOT 573 KAPSOYA
		724136	THOMAS IBRAHIM OKINDA	14140560286	103	1440	112	1580	118	1821	123	1722	117	1638	119	1666	PLOT 573 KAPSOYA
		729675	ISMAEL K KURUI	14140560310	24	456	22	393	28	455	31	434	29	406	25	350	1498 KAPSOYA
		729676	ROTICH KIMUTAI	14140560328	26	352	146	2219	25	409	156	2184	161	2254	157	2198	PLT B9 571 KAPSOYA
		729677	GABRIEL ARAP CHEPKEMBOI TOF	14140560252	46	574	54	699	56	295	59	826	67	938	66	924	PLT 9/1736/ KAPSOYA.
		729778	PATRICK CHERUIYOT KOSIOM	14140184632	20	327	19	326	19	327	20	280	20	280	23	322	PLT 9/2226-KAPSOYA.
		729894	ROSE JERUTO KANDA	14140380313	37	398	68	837	0	134	74	1036	69	966	61	854	PLT 9/2226 KAPSOYA.
		730136	JAPHET N OTIKE	14140381485	137	1963	189	2797	173	2664	198	2772	191	2674	196	2744	PLT 1735 KAPSOYA
		730281	ELIZABETH WAMBUI KARANJA	14140560377	59	687	61	788	51	654	60	840	66	924	60	840	1731 KAPSOYA
		730293	THOMAS C N MISOKA	14140360786	12	251	7	194	10	205	11	154	10	140	13	182	BLK B9/572 KAPSOYA
		730681	LILIAN KOBILO CHEMJOR	14140381527	116	1625	200	3009	252	4414	241	3374	255	3570	257	3598	PLOT NO 9/1496 KAPSOYA
		730787	JOSEPH OBUDHO OWARE	14140138752	57	801	160	2326	216	3526	213	2982	202	2828	220	3080	BLK 9/ 1728 BORDER ELGEYO
		730848	GEORGE MATHU	14140381436	155	2456	128	2027	223	3597	243	3402	239	3346	251	3514	BLK 9/1728 BORDER ELGEYO HSE 1
		731175	CHRISTINE KEMUNTO NYARANGO	14140380362	168	2243	189	2833	157	2400	186	2604	195	2730	190	2660	P/N 9/1727 KAPSOYA
		731442	NICHOLAS KIPKURUI RONO	14140184988	94	1162	94	1162	36	442	89	1246	97	1358	100	1400	2666 KAPSOYA
		731511	BEATRICE KEYA KWANDA	14140380271	50	562	51	654	60	751	67	938	63	882	69	966	B 9 1494 KASPOYA
		731657	ELIJAH K RONO	14140560211	30	320	29	407	42	415	39	546	40	560	40	560	P/N 91/1474 KAPSOYA
		731665	JOSEPH GITHINJI KIHARA	14141165606	81	1660	84	1754	83	1741	76	1064	89	1246	80	1120	P/N 91/1474 KAPSOYA
		732113	STEPHEN KYALO KUENDO	14140381741	0	134	0	134	150	2058	162	2268	150	2100	154	2156	PLT NO. 9/575 KAPSOYA
		732146	JONATHAN KUTO MAIYO	14140381626	14	276	1	144	36	469	34	476	30	420	33	462	KAPSAOYA P/N 9/1407
		732405	PEREZ CHEPKIRUI BIRIR	14140184897	44	452	40	473	41	526	43	602	40	560	40	560	PLOT 9/1470 KAPSOYA
		732721	FLORENCE KWAMBOKA NYAMETE	14140184806	28	401	3	160	11	256	30	420	30	420	23	322	BLOCK 9/1467 KAPSOYA
		732851	DCKSON ASHIRA	14140184715	46	574	55	720	73	1092	45	630	46	644	45	630	PLOT NO B/1419 KAPSOYA
		733206	PHILIP KIPKOSGEI KIMAIYO	14140025462	92	1190	93	1299	94	1321	90	1260	89	1246	82	1148	9/1414 KAPSOYA
		733215	ELIZABETH BOINETT	14140184905	195	2929	233	4062	98	1557	294	4116	307	4298	316	4424	B9/1404 KAPSOYA

		733659	SALMA MOHAMED SAID	14140138943	115	1717	105	1384	147	2162	149	2086	143	2002	154	2156 BLK 9/1420 KIPSOEN
		733820	DAVID KIPKEMOI CHERUTICH	14140381725	391	7391	90	1495	222	4827	429	6006	431	6034	412	5768 PLOT B1396 KAPSOYA
		734380	NEVADA KADENYEKA SHIRAMBA	14140381683	84	1151	82	1145	98	1530	99	1386	90	1260	93	1302 9/1397 KAPSOYA
		734394	JAMES IRUNGU MWANGI	14140035016	120	1777	122	1627	105	1487	139	1946	121	1694	111	1554 1394 KAPSOYA HSE 1
		734469	WILLIAM K KIPKITONY	14140778284	38	459	27	392	33	463	36	504	43	602	39	546 1394 KAPSOYA HSE 2
		734585	RASHID KIBIWOT HASSAN	14140560419	165	2450	177	2728	177	2728	179	2506	170	2380	161	2254 P/N B/9/1725 KAPSOYA
		734847	EMMANUEL KIPKOGEI ROP	14140381469	91	1362	94	1408	106	2519	101	1414	94	1316	91	1274 PLT 1738/9 KAPSOYA/HSE
		734849	LENA CHEMUTAI KORIR	14140035792	299	5352	166	2562	86	1113	310	4340	316	4424	280	3920 PLOT NO 9/1737
16	23618	734916	SUSAN J BARTILOL	14140360760	65	982	60	1004	55	692	66	924	64	896	64	896 PLOT NO 9/1737
		734989	NYIRANTA KIRUTI MAINA	14140778409	159	2446	132	1789	152	2242	143	2002	152	2128	162	2268 PLOT NO. B9/1714 KAPSOYA
		735042	DANIEL BARTONJO	14140184921	51	571	43	544	42	548	55	770	59	826	49	686 PLOT NO. B9/1714 KAPSOYA
		735141	ISAAC KIPLIMO SANG	14140184772	69	846	70	916	79	1112	70	980	66	924	70	980 PLT 9/1741 KAPSOYA/BEFORE CORNER NDOGO
		735274	JANE JEPCHUMBA SARMWEI	14140184822	68	942	63	857	60	709	64	896	66	924	66	924 9/1366 KAPSOYA
		735276	JANE JEPCHUMBA SARMWEI	14140381790	36	501	44	580	38	459	46	644	40	560	45	630 9/1366 KAPSOYA
		735534	GLADYS JERUTO KANGOGO	14140381675	67	882	79	1072	86	1236	82	1148	89	1246	80	1120 PLT 9/1704 KAPSOYA/NEAR KENYA-RE
		735799	MIRIAM JELAGAT KAPKIAI	14140035347	52	675	46	528	45	559	53	742	50	700	58	812 PLT B9/373 KAPSOYA
		736081	PAULINE JEPKEMBOI TOROITICH	14140184707	40	626	7	232	203	4278	254	3556	243	3402	253	3542 PLT B9/373 KAPSOYA SHOP 5
		2010824	MARY CHEBOO GIMNYIGE	14140184657	38	499	52	644	50	632	50	700	53	742	54	756 PLT B9/373 KAPSOYA SHOP7
		2018690	AGFAXARD KIPRUTO KOECH	14140778250	82	1171	80	981	85	1170	79	1106	75	1050	87	1218 BLK 9/982 KAPSOYA HSE 3
		2022325	SYLVESTER KIMAIYO NGETICH	14140184699	156	2306	181	2796	162	2651	180	2520	178	2492	186	2604 B 9/1383 KAPSOYA
		2022811	ROBERT KOECH BUTTIT	14140184673	77	1045	24	456	78	1134	71	994	80	1120	79	1106 B 9/1383 KAPSOYA
		2024185	ROBERT KIPKOECH LIMO	14140184756	27	385	30	413	52	866	50	700	57	798	56	784 KAPSOYA 9/985
		2026056	NAOMI CHEROTICH SEUREY	14140184681	107	1557	25	407	167	2436	169	2366	174	2436	189	2646 P/N 9/1380 ELGEYO
		2026243	ROBERT KOECH BUTTIT	14140560336	477	8076	202	3729	181	2944	497	6958	486	6804	491	6874 9/1205 KAPSOYA
		2027122	WILSON KIGEN S/N 1061	14140778383	128	1893	129	1949	120	1081	134	1876	127	1778	130	1820 BLK 9/1205 KAPSOYA
		2030804	ROSALYN G MUGO	14140185001	73	883	48	576	74	982	77	1078	75	1050	70	980 PLOT 9/1281 KAPSOYA
		2031768	TECLAH CHEPCHUMBA LEL	14140184939	81	1038	81	1038	50	689	76	1064	80	1120	82	1148 PLT NO. B9/1280 KAPSOYA
		2031772	TECLAH CHEPCHUMBA LEL	14104595252	137	1973	139	2070	161	2601	176	2464	156	2184	166	2324 P/N 9/1210 ELGEYO RD
		2039816	JOHN KIPKOECH TOO	14140381535	12	321	17	461	30	751	11	154	15	210	10	140 KAPSOYA B/9/960
		2040082	FATUMA FARAH WAISH	14105814157	193	2990	190	2651	189	2794	187	2618	178	2492	190	2660 PLT 9/959 KAPSOYA ESTATE
		2043341	PATRICK WAMATUBA WAFULA	14141165549	109	1558	84	1198	220	4081	260	3640	249	3486	257	3598 BLK 9/411 KAPSOYA
		2046484	EPIMACH KIPCHIRCHIR MARITIM	14140380230	208	3226	228	4423	248	4638	243	3402	232	3248	250	3500 PLT 9/1690 KAPSOYA
		2047058	JANE NANYAMA KIGEN	14140184996	165	2273	196	2943	137	2068	217	3038	236	3304	220	3080 BLK 9/950 KAPSOYA
		2052220	KIPSANG DAVID NYOLMO	14140778482	39	507	53	687	62	900	60	840	63	882	60	840 PLOT 91963 KAPSOYA
		2054124	MWANGI MWANIKI GITONGA	14140026312	161	2445	114	1692	106	1670	175	2450	181	2534	178	2492 PLOT 91963 KAPSOYA
		2058221	JOSPHINE JEPKORIR ROTICH	14140380552	30	421	32	487	49	678	50	700	54	756	43	602 BLOCK9/1221 KAPSOYA
		2058264	ADILITE GAUDENZIA MAKAA	14140380529	62	803	67	913	34	510	66	924	76	1064	71	994 BLOCK 9/1221 KAPSOYA
		2059021	STANSLOUS KOKONYA NDOMBER	14140380214	126	1837	97	1513	92	1404	118	1652	120	1680	129	1806 BLOCK 9/1221 KAPSOYA ESTATE
		2065325	REGINAH MUGURE GITAU	14140380560	225	3937	87	1116	581	12992	598	8372	607	8498	589	8246 9/880 KAPSOYA
		2065659	ATANAS KIPCHUMBA BITOK	14140380370	105	1491	105	1491	108	1705	106	1484	101	1414	110	1540 BLK 9/1181 KAPSOYA
		2065930	THOMAS CN MISOKA	01451036014	318	3841	249	3937	214	3591	333	4662	329	4606	331	4634 BLK 9/1181 KAPSOYA
		2066362	ROSELINE CHEPKEMBOI SEII	14140380578	125	1805	173	2664	186	3070	190	2660	176	2464	189	2646 1016 KAPSOYA
		2066781	DANIEL CHESEREK BARTONJO	14140380321	55	694	100	1411	117	1741	120	1680	129	1806	123	1722 1016 KAPSOYA
		2066782	DANIEL CHESEREK BARTONJO	14140380289	23	224	97	1031	188	3167	254	3556	239	3346	216	3024 1016 KAPSOYA
		2069602	JAMES KARANJA MUHUHU	14141165721	27	392	54	699	72	1070	80	1120	79	1106	76	1064 BLK 9/988 KAPSOYA
		2069604	JAMES KARANJA MUHUHU	14140778540	40	536	38	456	38	498	39	546	40	560	40	560 BLK 9/988 KAPSOYA
		2070842	MWAURA NGUKU KAMAU	14140380255	100	1461	89	1372	133	2117	141	1974	150	2100	146	2044 B9/1761/KAPSOYA ESTATE
		2070844	MWAURA NGUKU KAMAU	14140380487	17	304	20	356	12	262	11	154	10	140	11	154 B9/1761/KAPSOYA ESTATE
		2075597	RICHARD BYEGON KIPROTICH	14140380602	198	3242	150	1911	228	3328	253	3542	251	3514	269	3766 B9/1761/KAPSOYA ESTATE

		2082941	AMINA ISSAK ALI	14140184749	46	546	49	553	47	583	45	630	44	616	49	686	BK 9/2732 KAPSOYA
		2084881	RICHARD KIPLAGAT SAINA	14140184913	56	708	60	800	60	800	61	854	66	924	65	910	9/1114 KAPSOYA
		2090313	MARY NYIVA MWANIKI	14140778243	198	3090	155	2372	181	2522	189	2646	200	2800	205	2870	PLOT 9/951 KAPSOYA
		2090315	JANET JERUTO KURUI	14140184798	54	709	71	989	81	1148	79	1106	66	924	76	1064	9/951 KAPSOYA EST
		2091737	JANE CHERONO MAIYO	14140778326	14	261	34	425	47	582	43	602	59	826	51	714	956 KAPSOYA
		2091740	JOHN - MAIYO	14140380586	36	390	62	741	58	740	43	602	41	574	49	686	956 KAPSOYA
		2096747	ALICE KALUKI MUSYA	14140380594	11	204	60	772	93	1346	99	1386	101	1414	94	1316	PLT 1697 KAPSOYA SITE SER
		2099968	ROSE KIBII S/N 12996	14140381519	119	1598	196	2747	186	2785	198	2772	211	2954	203	2842	PLT NO 9/984 KAPSOYA
		2100148	SALOME JEPKOSGEI CHEBET	14140381634	118	1598	68	1085	108	2012	101	1414	132	1848	127	1778	PLT NO 9/984 KAPSOYA
17	21207	2100388	JAPHET NATANDULA OTIKE	14140184814	46	528	79	1072	62	916	79	1106	67	938	81	1134	PLOT B9/977 KAPSOIYA
		2103147	ROBIBINSON RONO LELEI	14104590311	143	2168	78	1098	133	2018	169	2366	176	2464	180	2520	PLOT NO 9/977
		2105682	JOYCE KIMALEL KIMALEL	14140380511	142	1939	151	2226	153	2334	159	2226	170	2380	161	2254	9/981 KAPSOYA
		2118293	JONAH KIPCHUMBA KIPLIMO	14141165796	73	903	60	772	61	819	79	1106	89	1246	86	1204	9/923 KAPSOYA
		2118610	DANIEL NGUGI WAITARA	14141165663	65	874	225	3536	50	612	254	3556	243	3402	250	3500	PLT 968 KAPSOYA
		2131070	LEAH CHEPKORIR	14140380396	96	1313	27	365	435	9671	467	6538	497	6958	473	6622	PLT NO 40 KAPSOYA
		2132599	ISAAC KIPLIMO SANG	14140184848	40	516	26	389	35	513	44	616	44	616	50	700	KAPSOYA 945
		2136176	JENIFER JEMUTAI ROTICH	14140026577	107	1574	106	1662	93	1421	110	1540	116	1624	128	1792	PLT 9/992 KAPSOYA
		2144204	LEAH JEMELI MALOT	14140380503	77	966	67	814	49	603	79	1106	80	1120	80	1120	KAPSOYA HSE 1 PLT 91991
		2144207	LEAH JEMELI MALOT	14140380354	78	1052	49	622	91	1984	98	1372	82	1148	83	1162	PLT 9/991 KAPSOYA
		2145090	HARED HASSAN ADAN	14140380461	113	1472	98	1317	101	1478	120	1680	120	1680	129	1806	PLOT 9/991 KAPSOYA EST(MAIN)
		2152289	EUNICE JEPTUM CHELAL	14140380412	54	703	13	278	20	353	65	910	66	924	73	1022	PLT 9/1746 KAPSOYA SRS
		2155880	JOHN NYABUTO MOSE	14140380305	25	341	28	402	27	406	24	336	32	448	30	420	.PLT 9/1745 KAPSOYA
		2155882	JOHN NYABUTO MOSE	14140380404	40	424	57	665	16	287	70	980	76	1064	71	994	PLT.9/1749 KAPSOYA
		2156432	JENIFER JEMUTAI ROTICH	14140380453	83	1264	103	1328	121	2210	129	1806	137	1918	130	1820	PLT 9 1744 KAPSOYA
		2156433	JENIFER JEMUTAI ROTICH	14140380339	19	325	27	434	21	363	23	322	23	322	24	336	91744 KAPSOYA
		2165209	EMILY CHELIMO KEMBOI	14140035743	230	3948	190	2833	173	2374	253	3542	244	3416	256	3584	PLT NO 9/882 KAPSOYA
		2182034	LEAH JEMELI MALOT	14141165689	116	1253	90	1247	77	1007	103	1442	98	1372	96	1344	B/9/593/3 KAPSOYA
		2183506	LEAH JEMELI MALOT	14140380263	122	1757	72	955	82	1165	126	1764	131	1834	120	1680	B/9/593/3 KAPSOYA
		2183507	LEAH JEMELI MALOT	14141165739	65	910	66	924	73	1022	54	703	13	278	20	353	B/9/593/3 KAPSOYA
		2183508	LEAH JEMELI MALOT	14140380388	79	1106	79	1106	84	1176	62	864	78	991	15	285	B/9/593/3 KAPSOYA
		2184291	RICHARD OKELO NYAMWALO	14141156407	148	2072	150	2100	150	2100	135	1923	119	1660	131	1866	B/9/593/3 KAPSOYA
		2188419	NAOMI MUMBI NGUGI	14141165754	23	322	23	322	24	336	19	325	27	434	21	363	9/639 KAPSOYA
		2189250	STEPHEN KANGETHE KARANJA	14141165713	138	1932	134	1876	144	2016	107	1650	103	1459	127	1877	PLT NO 9/643 ELGEYO BORDER RD
		2191558	KEFA - VUHULA	14141165788	70	980	70	980	65	910	65	946	43	517	44	519	PLT 9/594 KAPSOYA
		2191560	KEFA - VUHULA	14140380545	32	448	31	434	32	448	17	461	20	196	23	443	9/594 KAPSOYA
		2192734	JEREMIAH RONOH S/N 11874	14141165614	170	2380	165	2310	160	2240	154	2564	156	2205	143	2168	PLT 9/610 KAPSOYA
		2194739	JULIUS CHEMWENO	14141165705	60	840	60	840	69	966	16	291	54	638	44	547	9/598 KAPSOYA SHOP 3
		2203540	WASHINGTON OCHIENG OITO	14141165648	356	4984	340	4760	321	4494	59	734	317	5369	50	518	9/636 KAPSOYA
		2208227	ISAAC KIPLIMO SANG	14140381550	290	4060	285	3990	302	4228	150	2250	161	2223	295	5938	PLT BLOCK 9/631 KAPSOYA
		2222476	KIPSANG DAVID NYOLMO	14140778417	290	4060	276	3864	286	4004	78	1105	126	1692	288	5347	P/N B9 /624 KAPSOYA ESTATE
		2225184	JANE CHELAGAT LIMO	14105806401	244	3416	246	3444	250	3500	244	4791	244	4791	244	4791	P/N 1554 KAPSOYA
		2230096	FLORENCE JEPKEMEI KOSGEI	14141079831	76	1064	80	1120	82	1148	81	1038	81	1038	50	689	PLOT 934 KAPSOYA
		2231074	SALINA JELIMO CHEBETT	14141165531	156	2184	148	2072	147	2058	95	2336	135	3040	106	2356	BLK9/578 KAPSOYA
		2235506	JAMES KARANJA MUHUHU	14141165564	180	2520	178	2492	186	2604	156	2306	181	2796	162	2651	ISOLATED KAPSOYA
		2237589	CAROLINE JERONO CHEBOROR	14141165440	82	1148	60	840	73	1022	46	767	46	767	71	1079	B1 9-1599 KAPSOYA
		2238749	DAVID KIPTARUS BIWOTT	14141165523	71	994	80	1120	79	1106	77	1045	24	456	78	1134	P/NO B9/1603 KAPSOYA
		2246094	EDWARD BARARE SIMBA	14141165630	91	1274	99	1386	98	1372	90	1779	0	134	97	1737	1604 KAPSOYA
		2247116	FLORENCE KWAMBOKA NYAMETI	14141165432	160	2240	161	2254	165	2310	93	1539	99	1754	163	2724	89/583 KAPSOYA
		2248934	JUSTUS KIPKEU CHEBOI	14140560518	589	8246	576	8064	550	7700	336	5500	691	11622	533	9011	B9/583 KAPSOYA

		2249339	CHARLES KEMBOI TOROITICH	14141165416	215	3010	200	2800	193	2702	154	2693	213	4620	166	3108 ISOLATED KAPSOYA
		2253426	SIMON GITHUA MATIA	14140381584	28	392	20	280	23	322	19	367	22	440	22	339 PLT 9/579 KAPSOYA
		2253558	BRIGID JEROTICH KIPRONO	14141165457	64	896	66	924	66	924	68	942	63	857	60	709 PLT 9/579 KA[SOYA
		2264133	PAUL KIPROP KANDIE	14104595385	39	546	45	630	51	714	49	569	27	373	35	400 PLT/591 KAPSOYA
		2265623	DANIEL CHESEREK BARTONJO	14140560427	170	2380	196	2744	189	2646	173	2666	0	134	162	2285 PLT/591 KAPSOYA
		2271354	SOLOMON ANGENYI WAMWAYI	14141165762	119	1666	110	1540	113	1582	66	1123	108	1800	70	1028 PLT 9/591 KAPSOYA
		2272340	MOSES OWADE IMO	14141165697	25	350	28	392	30	420	26	411	31	439	24	359 PLT 9/591 KAPSOYA
		2290558	ANNAH CHEBII TUM	14141165424	183	2562	189	2646	170	2380	135	1876	134	1856	179	2557 PLT 9/593/6 KAPSOYA
		2291334	ANNE WANGARI WAIHARO	14141165465	298	4172	290	4060	287	4018	291	4819	246	4075	265	4795 PLT 9/593/6 KAPSOYA
18	28110	2297622	ROBERT KOECH BUTTIT	14140035362	99	1386	90	1260	93	1302	84	1151	82	1145	98	1530 9/2174 KAPSOYA
		2304780	L K KOTUT	14140778607	139	1946	121	1694	111	1554	120	1777	122	1627	105	1487 9/2074 KAPSOYA
		2309797	ELIZEBA JEPLETING TARUS	14140035404	36	504	43	602	39	546	38	459	27	392	33	463 9/2174 KAPSOYA
		2313559	JAMES NDUTU MUTISO	14140035073	80	1120	76	1064	83	1162	82	1318	76	1171	56	772 9/593 KAPSOYA HSE 3
		2316911	ALI SHEIKH HASSAN	14140035024	268	3752	176	2464	298	4172	69	869	209	3349	280	4061 9/593 KAPSOYA
		2316913	ALI SHEIKH HASSAN	14140035271	82	1148	66	924	70	980	68	952	68	952	61	854 B/593 KAPSOYA
		2325544	MILGO MOHAMMED JAMAH	14140035032	11	154	10	140	13	182	12	168	14	196	17	238 9/593/ 4B KAPSOYA HSE3
		2328072	SUSAN CHEPKEMEI KAPKAMA	14140035081	66	924	65	910	60	840	61	854	56	784	44	616 9/593/ 4B KAPSOYA HSE 2
		2328073	SUSAN CHEPKEMEI KAPKAMA	14140778359	10	140	6	84	9	126	12	301	12	301	5	201 9/593/ 4B KAPSOYA HSE7
		2331479	PETER NG'ANG'A MBURU	14140778367	52	728	45	630	49	686	31	390	46	574	41	547 593/4B SHOP 7
		2332653	VINCENT OCHIENG OOKO	14140035305	129	1806	137	1918	142	1988	83	1130	124	1840	114	1783 593/4B SHOP 4
		2336249	RUTH CHEMINING CHEMOBO	14141165473	40	560	42	588	45	630	38	498	47	607	42	601 BLK 9/707 KAPSOYA
		2336250	GEORGINA KIMWATTAN	14141165515	87	1218	83	1162	94	1316	88	1214	94	1344	83	1267 PLT 1636 KAPSOYA
		2336879	EMILY JEPTEPKENY CHIRCHIR	14140184830	129	1806	134	1876	117	1638	120	1888	119	1116	55	672 PLT 1636 KAPSOYA
		2340400	PETER GACHIGI KAMAU	14140035149	126	1764	117	1638	112	1568	110	1571	108	1062	101	1369 P/NO 8145 KAPSOYA
		2341857	ELIJAH KISABEI KIMISIK	14141165507	136	1904	148	2072	126	1764	101	1384	135	2005	128	2027 PLT 9/1637 KAPSOYA
		2341858	ELIJAH KISABEI KIMISIK	14141165499	91	1274	98	1372	110	1540	101	1384	100	1461	96	1241 PLOT NO 9/1637 KAPSOYA
		2346201	JOHN NYABUTO MOSE	04225860875	87	1218	87	1218	94	1316	80	1090	65	885	79	1197 B-9-1622 KAPSOYA
		2358044	EDWARD KIPKEMBOI CHOGE	14140710626	120	1680	123	1722	134	1876	89	1287	100	1466	126	1699 P/N B9/1591 ELGEYO RD
		2358054	FLORENCE KWAMBOKA NYAMETE	14140560591	14	196	12	168	11	154	17	306	18	287	12	248 P/N B9/1591 ELGEYO RD
		2360960	ANNE WANGARI WAIHARO	01451167637	88	1232	84	1176	88	1232	46	699	85	1539	59	985 PLT NO 9/1614 KAPSOYA
19	28109	2360962	ANNE WANGARI WAIHARO	14140381592	60	840	66	924	60	840	59	687	61	788	51	654 PLT NO 9/1614 KAPSOYA
		2360964	ANNE WANGARI WAIHARO	14140035065	11	154	10	140	13	182	12	251	7	194	10	205 PLT NO 9/1614 KAPSOYA
		2370016	NANCY CHEPKOECH RONO	14140035123	36	504	30	420	39	546	32	453	28	389	23	927 PLT 1610 KAPSOYA
		2374038	CALEB WILLIAM OPATI	04225791963	46	644	41	574	40	560	30	421	39	527	15	301 PLT NO B9/1610 KAPSOYA
		2376203	LILY JERUTO KANJI	14140025736	52	728	45	630	49	686	31	390	46	574	41	547 PLOT NO B/9/1587 KAPSOYA
		2394467	LEAH CHEPKOSGEI NGENY	14140139990	56	784	54	756	59	826	57	740	57	757	44	511 1644 SITE AT SERVICE
		2394469	CHARLES K. NG'ETICH S/N 15971	14140140154	87	1218	87	1218	94	1316	80	1090	65	885	79	1197 PLOT B/1567 KAPSOYA
		2399376	JARED NYANGERI MONGONI	14140139933	50	700	53	742	42	588	41	523	48	593	29	426 B9/1576 KAPSOYA SQ2
		2400640	HELLEN ROSELINE LUNG'AHO	01451209884	14	196	12	168	11	154	17	306	18	287	12	248 BLK 9/1563 KAPSOYA
		2404011	DANIEL MUDANYI OCHENJA	14140025454	22	308	23	322	29	406	33	460	30	407	19	280 BLK 9/1563 KAPSOYA
		2407085	DENNIS KIPRONO LANGAT	14140025504	30	420	26	364	19	266	19	390	28	510	29	482 1586 KAPSOYA
		2407086	ANNE WANGARI WAIHARO	14140025777	100	1400	96	1344	94	1316	94	1571	95	1747	90	1253 1586 KAPSOYA
		2407087	ANNE WANGARI WAIHARO	14140025603	80	1120	81	1134	87	1218	77	1356	63	1061	7	217 1586 KAPSOYA
		2407088	ANNE WANGARI WAIHARO	14140025694	23	322	28	392	34	476	23	455	17	341	20	374 1586 KAPSOYA
		2407089	ANNE WANGARI WAIHARO	14104133153	47	658	53	742	49	686	37	547	44	725	47	697 PLT B9/1590 ELGEYO/KAPSOYA/HSE
		2407091	ANNE WANGARI WAIHARO	14140025678	59	826	64	896	64	896	44	725	56	843	53	742 PLOT B9/1590 ELGEYO/KAPSOYA
		2407093	ANNE WANGARI WAIHARO	14140025611	46	644	46	644	51	714	45	739	40	614	44	639 PLT 9/1590 KAPSOYA
		2407095	ANNE WANGARI WAIHARO	14140025520	90	1260	93	1302	95	1330	68	1159	73	1155	100	1598 1590 ELGEYO
		2409699	NELLY CHEPNG'ETICH	01451086738	80	1120	80	1120	85	1190	29	523	45	670	84	1316 1590 ELGEYO

		2409701	NAOM JEPKOGEI LEMISO	14140139818	65	910	66	924	59	826	67	884	48	617	72	1073 PLT.9/1642 KAPSOYA
		2412657	CHARLES K LAGAT	14140381451	99	1386	94	1316	104	1456	78	1321	79	1259	98	1561 9/1602 KAPSOYA HSE 1
		2426737	DANIEL CHESIR ROTICH	14140025488	39	546	40	560	36	504	38	801	42	705	45	734 BLK 9/1643 KAPSOYA HSE 2
		2437241	NANCY CHEROBON ROP	14140025652	25	350	30	420	29	406	27	465	22	440	20	398 9/1655 KAPSOYA
		2437243	NANCY CHEROBON ROP	14140025751	60	840	61	854	67	938	52	786	58	991	40	672 9/1655 KAPSOYA
		2460513	MOSES OWADE IMO	14140025470	117	1638	120	1680	110	1540	116	1589	116	1594	105	1430 PLOT NO.1556 KAPSOYA
		2462439	KWAKE MUTISYA KASINGA	01451038978	69	966	75	1050	70	980	65	907	58	780	58	780 P/N B901539 KAPSOYA
		2462440	JACOB KIPSANG KOSGEI	14140025629	88	1232	88	1232	96	1344	82	1041	72	1001	56	751 1544 KAPSOYA
		2462441	DANIEL KIPLAGAT TARUS	14140025421	99	1386	100	1400	91	1274	90	1198	75	1050	21	351 1543 KAPSOYA
		2462442	PATRICK KIPYEGO METTO	14140025595	109	1526	116	1624	98	1372	87	1440	101	1870	88	1560 1543 KAPSOYA
		2467700	BENJAMIN SAMIKWA KEMOI	14140025769	107	1498	100	1400	94	1316	82	1437	102	1686	78	1205 1543 KAPSOYA
		2472241	JOHN - MAIYO	14140140063	219	3066	221	3094	216	3024	119	1715	197	2206	206	3806 BLK 1547 KAPSOYA
		2472245	ESTHER JEPKEMEI KIPLAGAT	14140025710	66	924	67	938	59	826	62	741	65	852	29	423 BLK 9/1547 KAPSOYA
		2472247	JANE CHERONO MAIYO	14140140204	56	784	55	770	52	728	45	760	23	443	59	899 BLK 9/1547 KAPSOYA
		2473447	FLORENCE KWAMBOKA NYAMETE	14140710667	598	8372	524	7336	532	7448	20	380	521	11625	209	4277 BLK 9/1547 KAPSOYA
		2473448	FLORENCE KWAMBOKA NYAMETE	14140025553	98	1372	96	1344	93	1302	92	1506	90	1355	71	1083 PLT.9/1565 KAPSOYA
20	8203	2352360	EVANS ORENGE ONDERI	01451064396	46	644	59	826	56	784	51	624	59	785	53	742 P/N 1619 KAPSOYA
		711317	VIOLET CHEPTAI KIMKUNG	14141165481	68	918	67	923	67	817	67	938	68	952	69	966 AT KAPSOYA
		711714	DAVID NDEGWA MAINA	14140035552	174	2700	73	1022	71	876	186	2604	189	2646	185	2590 PLT NO 1706 KAPSOYA
		711943	SAMUEL K KAMAU	01451086746	60	790	64	853	67	923	63	882	60	840	64	896 9965 KAPSOYA
		724080	MICHAEL KIGEN CHEPKONGA	14140025561	232	3653	274	4665	428	7652	433	6062	451	6314	457	6398 BLK 9 965 KAPSOYA
		724088	PHANUEL - KIPLAGAT	22119671190	57	740	57	757	44	511	56	784	54	756	59	826 B9/1212 KAPSOYA
		724097	ERIDADI O ONJORO	14140144198	51	628	65	882	54	736	61	854	51	714	56	784 1207 BLK 9 KAPSOYA
		724101	JANE CHERUTO MUTAI	01451049223	89	1287	100	1466	126	1699	120	1680	123	1722	134	1876 KAPSOYA SITE SERVICE PLOT 1468
		732212	EDWARD KIPRONO BUSIENEI	14140035479	109	1614	77	1080	102	1340	101	1414	92	1288	90	1260 KAPSOYA P/N 9/1407
		732534	ERIDADI O ONJORO	14140144156	101	1403	91	1313	101	1403	109	1526	112	1568	103	1442 PLOT NO. 1471 BLOCK 9
		733900	JANE CHERONO MAIYO	14140035800	6	195	13	266	9	220	17	238	14	196	15	210 1384 KAPSOYA
		734836	CATHERINE WAMBOI	14140025801	68	716	70	761	80	891	80	1120	80	1120	83	1162 PLT 1738/9 KAPSOYA ESTATE
		735535	STEPHEN ACHESA MALECHE.	14140025496	97	1257	90	1251	98	1424	93	1302	103	1442	98	1372 PLOT 9/1720 KAPSOYA EST(SERVANT)
		2024747	ANDREW BRIAN WAMBULWA	14140144032	22	348	20	318	25	441	23	322	26	364	22	308 PLT 1381 KAPSOYA
		2032747	CLEMENT KIPTUM KOMEN	14140025587	131	1770	116	1666	168	2578	140	1960	143	2002	131	1834 P/NO 1297 KAPSOYA
		2033903	ANDREW BRIAN WAMBULWA	14140035438	150	2250	161	2223	295	5938	290	4060	285	3990	302	4228 1289 KAPSOYA
		2056177	PAUL MBURU NGETHE	14140025538	61	826	61	826	126	1624	120	1680	128	1792	125	1750 P /N 1685 KAPSOYA EST
		2062301	JANE WATHIRA WACHI	14140035776	85	1217	82	1041	120	2193	123	1722	119	1666	128	1792 PLT 9/975 KAPSOYA
		2069615	JOHN - MAIYO	14140035693	77	1091	72	1006	62	727	77	1078	76	1064	79	1106 BLK 9/988 KAPSOYA
21	28271	2071619	MICHAEL KIMELI CHUMO	14140143810	65	842	50	601	100	1461	113	1582	109	1526	110	1540 B9/1761/KAPSOYA ESTATE
		2074103	JOAB SAMUEL OTIENO KAMUMB	14140035339	22	350	24	378	28	402	25	350	30	420	30	420 B9/1761/KAPSOYA ESTATE
		2095123	ISSACK ADAN MOHAMED	14140025637	139	1812	138	2018	159	2482	156	2184	180	2520	179	2506 9/1696 KAPSOYA
		2097265	ISSACK ADAN MOHAMED	14140025785	26	256	29	411	29	426	29	406	27	378	23	322 PLT 979 KAPSOYA.
		2125119	JOSEPH NYARIKI MASIMBA	14140143851	104	1370	111	1587	115	1708	129	1806	125	1750	130	1820 PLOT NO. B/9/948 KAPSOYA
		2166233	DAVID KIPKORIR . M. MAIZS	14140025793	45	565	44	623	32	483	49	686	43	602	50	700 PLT NO 9/882 KAPSOYA
		2218133	ALEX KIPROTICH CHERUIYOT	14140025413	126	1764	125	1750	128	1792	118	2868	100	2270	88	1981 P/N KAPSOYA ESTATE
		2231071	CHRISTOPHER KIBIWOT KEMBOI	14140025439	59	826	53	742	56	784	43	709	63	966	57	833 BLK9/578 KAPSOYA
		2253684	CORNELIUS KIPKEMEI KURERE	14140710618	46	644	40	560	45	630	36	501	44	580	38	459 9/579 KAPSOYA
		2261897	PIUS TUM KIPKEMBOI	01451039018	116	1624	121	1694	130	1820	128	2354	108	1800	104	1582 PLT NO B /9 /1616 KAPSOYA
		2262134	DORCAS JEPKEMBOI KANDIE	14140909640	93	1302	103	1442	98	1372	97	1257	90	1251	98	1424 PLT 9/591 KAPSOYA
		2262135	DORCAS JEPKEMBOI KANDIE	14140025579	167	2338	159	2226	170	2380	101	1354	156	2205	110	1476 PLT/591 KAPSOYA
		2323467	KIPCHIRCHIR BARMASAI ROTICH	14140025686	60	840	66	924	60	840	61	788	51	654	65	1137 9/593/ 4B KAPSOYA HSE A
		2345585	DANIEL KIPKOSGEI SERONEY	14140560294	138	1932	131	1834	143	2002	113	1675	134	2161	91	1389 PLOT 9/1625 KAPSOYA

		2345586	ANGELA - CHELAGAT	14141165622	139	1946	141	1974	158	2212	113	2265	130	2657	144	3096	9/593 KAPSOYA
		2456166	JULIUS KIPSANG KOECH	14140143885	19	266	20	280	19	266	18	319	17	297	16	269	PLOT NO 1556 KAPSOYA
		715647	PRISILLA WAIRIMU	14140035487	87	1115	81	1104	110	1626	111	1554	113	1582	119	1666	1740 KAPSOYA ESTATE
		724137	FRANCIS MUKUINGURU	14140035669	185	2883	0	134	165	2282	198	2772	187	2618	182	2548	573 ELGEYO RD
		724138	AMSELMO THUO WAIGANJO	14140035768	36	478	38	514	49	677	41	574	43	602	52	728	PLT 1511/9 KAPSOYA
		734569	GEORGE OKUMU ODERA	14140381428	56	708	59	786	52	724	51	714	52	728	56	784	P/N B9/1725 KAPSOYA
		2062889	GEOFFREY KIPKEMOI KIRUI	01451122822	106	1913	65	1137	122	2055	130	1820	129	1806	116	1624	ISOLATED PLOT KAPSOYA
		2174733	JOYCE JEROTICH MUTTAI	14140778334	132	1954	130	1836	139	1894	145	2030	131	1834	156	2184	1278 KAPSOYA
		2332977	WESLEY KIPNGETICH	14140035727	24	336	31	434	23	322	22	355	6	180	4	156	PLT B/1629 KAPSOYA
		2244295	JOEL KIBOR KIPKEMBOI	14107583354	55	770	59	826	49	686	51	571	43	544	42	548	1604 KAPSOYA
		712099	LIVINGSTONE A MIYA	22119719023	130	1751	175	2699	95	1403	236	3304	241	3374	238	3332	B/9/1370 KAPSOYA
		712400	PATRICK KIPROP SANG	22119761637	105	1420	110	1643	60	818	151	2114	156	2184	153	2142	AT KAPSOYA
		715548	JOYCE AMULE MUKA	22119718892	70	899	62	834	48	628	73	1022	74	1036	71	994	1485 KAPSOYA ESTATE HSE 3
		715566	IRENE CHEPKOSGEI KIPTOON	22119761595	108	1640	77	1026	101	1411	112	1568	101	1414	105	1470	1485 KAPSOYA ESTATE HSE2
		715632	ELIZABETH NYALUIT TUDI	22119761272	67	814	67	849	33	426	69	966	74	1036	75	1050	1485 KAPSOYA ESTATE HSE 1
		715634	LINET NYAMOITA ONKUNDI	04225859968	61	719	55	720	0	134	67	938	69	966	60	840	B9/1723 KAPSOYA
		715646	ANNA CHELAGAT BIRECH	22119597882	133	1750	137	2032	83	1760	133	1862	149	2086	151	2114	1740 KAPSOYA ESTATE
		715659	GEOFFREY NJUGUNA KIARIE	22119719171	98	1576	86	1353	89	1397	109	1526	102	1428	94	1316	PLOT NO. 1304-KAPSOYA
		715660	ERICK NAIBEI	22119719239	65	907	58	780	58	780	69	966	75	1050	70	980	PLOT NO. 1304-KAPSOYA
		715664	PAULINA JEMELI KOMEN	22119761546	82	1041	72	1001	56	751	88	1232	88	1232	96	1344	BLK 9/2664 KAPSOYA
		715675	KENNEDY KIPLIMO KILEL	22119597957	90	1198	75	1050	21	351	99	1386	100	1400	91	1274	PLT B9/1684 KAPSOYA
		715676	DAVID OCHIENG MBORI	22119718934	82	1048	133	2006	142	2187	159	2226	163	2282	161	2254	1684 KAPSOYA
		715689	DAVID A.K MANYANG	22119697500	116	1537	147	2236	91	1337	150	2100	156	2184	168	2352	9/1710 KAPSOYA
22	22336	715699	ROSE NELIMA MAKOKHA	22119761389	123	1693	154	2347	40	544	156	2184	153	2142	151	2114	9/1710 KAPSOYA
		715700	ELKANA KIMUTAI CHEPSAIGUT	22119761447	208	3607	206	3609	168	2377	230	3220	223	3122	239	3346	9/1710 KAPSOYA
		715707	W K C TOLGOS	22119719056	55	655	88	923	56	775	89	1246	99	1386	97	1358	009/1293 KAPSOYA
		730783	ALI ABDALLA YEK	22119719205	67	902	97	1554	126	2024	129	1806	127	1778	132	1848	PLOT NO 9/495 KAPSOYA
		730858	SOLOMON NZULA MUTUA	22119597932	141	1964	132	1841	110	1520	149	2086	143	2002	152	2128	BLK 9/1728 BORDER ELGEYO HSE 2
		731495	MAGDALENA JEPKOECH CHESANG	22120373166	77	956	101	1109	75	958	106	1484	113	1582	110	1540	PLT 9/1390 KAPSOYA.
		732056	LUCY KITUI CHEMTAI	22119597981	148	2250	36	506	115	1568	148	2072	145	2030	156	2184	PLT NO 9/575 KAPSOYA
		732284	ELIJAH KOECH CHEBOTIBIN	22119719155	131	2244	85	1335	77	1014	135	1890	130	1820	131	1834	PLOT 9/1406 KAPSOYA
		732307	ALBINA JEMUTAI CHELANGA	22120373018	140	2127	108	1594	58	784	179	2506	181	2534	186	2604	MUNYAKA BLK 9 1410
		732915	JOHN KEMBOI KIBOWEN	22119718884	94	1233	151	2302	82	1186	143	2002	150	2100	157	2198	PLOT NO B/1419 KAPSOYA
		733454	ESTHER JEROTICH CHEPKIYENG	22119697369	8	213	18	310	13	221	12	168	12	168	16	224	P/N 1400 KAPSOYA
		733663	MOSES KIPLAGAT KETER	22119718975	69	869	209	3349	280	4061	268	3752	176	2464	298	4172	9/1413 KAPSOYA
		733708	WILFRED K BIY	22119597890	127	1722	168	2583	89	1302	198	2772	189	2646	171	2394	PLT B9/1399 KAPSOYA
		733772	SAMUEL KIPKEMOI KOSGEI	01451080103	89	1451	128	2103	97	1478	121	1694	123	1722	130	1820	PLT 1398 KAPSOYA
		733773	SAMUEL KIPKEMOI KOSGEI	01451080095	33	452	26	357	105	1284	110	1540	113	1582	98	1372	PLT 1398 KAPSOYA
		734596	STEPHEN ONYANGO OJANGA	22119719163	227	3224	0	134	180	2781	250	3500	256	3584	263	3682	PLOT 9/1730 KAPSOYA
		734707	DIVINAH JEROP KEINO	22119761413	31	422	5	184	4	175	30	420	30	420	34	476	P/N 9/1734 KAPSOYA
		735409	SAMUEL KIPKEMOI KOSGEI	01451166332	45	739	94	1543	81	1262	99	1386	83	1162	85	1190	BLK 9/1647 KAPSOYA
		735425	ESTHER J CHEPKIYENG	22119697252	66	807	61	824	40	518	50	700	53	742	62	868	PLT.B9/1716 MIYAKA RD.KAPSOYA
		735514	DAVID N N KITONGA	01451080111	34	591	51	752	61	905	65	910	56	784	59	826	AT KAPSOYA
		735791	MAGDALENA JEPKOECH CHESANG	22120373182	173	2666	0	134	162	2285	170	2380	196	2744	189	2646	PLT B9/373 KAPSOYA
		736011	MAGDALENA JEPKOECH CHESANG	22120373208	44	500	56	737	0	134	60	840	59	826	55	770	PLT B9/373 KAPSOYA SHOP 4
		2016016	DAVID KIPYEGON KURGAT	22119719072	54	638	44	547	16	291	61	854	57	798	64	896	PLOT B/1700 KAPSOYA (SERVANT A)
		2039407	MANYANG MAKUR MAGOL	22119719213	219	3903	75	1127	166	2354	240	3360	246	3444	243	3402	9/1225 KAPSOYA
		2039597	PAMELLAH SCHOLASTICA ORWA	22119719106	167	2370	153	2123	182	2814	198	2772	192	2688	197	2758	9/978 KAPSOYA
		2039681	MARTHA AJAKA ATONG	22119719130	172	2611	82	986	92	1582	189	2646	186	2604	183	2562	E M C BLK 9/964 ELGETO RD

2041749	ELLY OCHIENG ODIWA	22119761280	20	196	26	235	199	2869	220	3080	223	3122	227	3178	BLK 9/411 KAPSOYA
2043837	GODSON OWENDHO GUMBA	22119597775	33	385	10	223	20	361	28	392	16	224	31	434	B 9/957 KAPSOYA
2056593	PAUL KIPSANG MENGECH	22119719015	75	1126	68	941	133	1813	139	1946	134	1876	142	1988	AT KAPSOYA
2058184	MARGARET JEPTUM MAIYO	22119597676	89	1176	104	1639	103	1613	100	1400	103	1442	108	1512	BLOCK 9/1221 KAPSOYA ESTATE
2073050	BENARD MARITIM KIBER	22119761587	92	1219	95	1380	54	715	102	1428	97	1358	99	1386	B9/1761/KAPSOYA ESTATE
2074096	FATUMA JEBET FARAJ	22119597965	84	1088	37	463	38	477	93	1302	89	1246	76	1064	B9/1761/KAPSOYA ESTATE
2076245	HENRY KIPSANG AMDANY	22119597742	50	821	59	936	44	547	43	602	47	658	56	784	PLT 9/2665 KAPSOYA
2079123	LYDIA KORIR	22119597908	142	1962	286	4681	144	2046	321	4494	329	4606	316	4424	ELD MUN/BLOCK 9/1015
2089059	CLAUDE KIRWA BUSIENEY	22120372994	132	1766	244	4269	136	2089	249	3486	253	3542	267	3738	P/NO 1692 KAPSOYA
2107997	REBECCA JEROTICH KIPKORIR	22119761397	114	1148	98	1391	33	475	121	1694	129	1806	106	1484	P/NO B/9/1219 KAPSOYA
2111001	JOSEPH CHEPTOO KENDAGOR	22119761322	177	2731	96	1420	90	1187	189	2646	195	2730	196	2744	PLT NO. 1291 KAPSOYA
2111928	DORCAS - CHEPKOSKEI	22119598013	65	946	43	517	44	519	70	980	70	980	65	910	P/N B9/1204 KAPSOYA
2112409	KIPRUTO KIPTOO	22119597825	17	461	20	196	23	443	32	448	31	434	32	448	NEXT TO KAPSOYA BAPTIST CHURCH
2135436	EVANS LUYALI KHADAMBI	22120373075	46	609	66	820	120	1656	151	2114	166	2324	163	2282	PLT 9/992 KAPSOYA /HSE
2151462	ROSEMARY OSOR0 JEPKETER	22119598021	107	1604	171	2422	271	3955	289	4046	291	4074	290	4060	PLT 8/1745 KAPSOYA
2152314	PAULINE - KWAMBAI	22119719064	62	864	78	991	15	285	79	1106	79	1106	84	1176	PLT 8/1745 KAPSOYA
2156380	WILLIAM MBURU MACHARIA	22119665374	85	1115	81	824	90	1284	90	1260	81	1134	99	1386	PLT 9/1749 KABSOYA
2160317	ERNEST KORIR OLBARA	22119719148	30	376	21	333	19	320	34	476	39	546	38	532	KAP/9/1008 KAPSOYA
2167615	PETER WAFULA ICHUDI	22119718959	30	340	18	294	21	341	33	462	39	546	41	574	PLT NO 9/882 KAPSOYA
2174384	PAULINE - KWAMBAI	22119718983	44	525	40	305	56	596	59	826	52	728	61	854	1278 KAPSOYA
2184669	TIMOTHY KOSGEI KIPYAGAN	14104590295	24	336	32	448	30	420	25	341	28	402	27	406	B/9/593/3 HSE 14A KAPSOYA
2187090	EMMA DINAH MAKOKHA	22119665325	129	1806	137	1918	130	1820	83	1264	103	1328	121	2210	PLOT 9/639 KAPSOYA
2202023	FESTUS ANYONA OKERO	22119697310	79	1106	66	924	76	1064	54	709	71	989	81	1148	PLOT 9/KAPSOYA
2206571	LIVINGSTONE A MIYA	22119718918	66	924	60	840	53	742	22	430	60	917	62	875	PLT 566 BLK 9 KAPSOYA
2213551	KIPLANGAT TERER	22119606139	230	3220	231	3234	237	3318	175	2553	101	1543	224	3914	PLT BLOCK 9/631 KAPSOYA
2222135	BENSON SAKWA WAKHULE	22120373174	60	840	50	700	55	770	26	483	24	422	53	762	PLT 628 BLK 9 KAPSOYA
2222932	BENSON SAKWA WAKHULE	22120373216	26	364	18	252	20	280	5	247	14	436	25	659	P/N B9 /624 KAPSOYA ESTATE
2222933	BENSON SAKWA WAKHULE	22120373190	201	2814	200	2800	190	2660	100	1526	193	2948	157	2413	P/N B9/624 KAPSOYA ESTATE
2254746	EVANS NYAGECHI NYANG AYA	22120373091	55	770	51	714	53	742	30	449	30	449	58	773	KAPSOYA SITE & SERVICE B9/590
2275231	ABRAHAM KPTARUS KIPTOO	22119718942	254	3556	243	3402	253	3542	40	626	7	232	203	4278	P/N 9/1621 ELGEYO BORDER
2275837	CLAUDE KIRWA BUSIENEY	22120372952	30	420	30	420	34	476	31	422	5	184	4	175	PLOT NO.1619
2275838	CLAUDE KIRWA BUSIENEY	22120372978	39	546	43	602	32	448	32	563	32	563	40	613	PLT B9/593 KAPSOYA
2314511	GEOFFEY RONOH MOTELIN	22119598005	59	826	52	728	56	784	53	789	49	696	51	687	9/593 KAPSOYA HSE 5
2316089	KISILU MASHTAKH KITAINGE	22120372911	149	2086	143	2002	154	2156	115	1717	105	1384	147	2162	9/593 B KAPSOYA
2348091	ROSEMARY AMAKUNDU OYALO	22119597866	54	756	53	742	53	742	51	499	30	421	40	537	P/N B9 1622 KAPSOYA
2351292	DAVID HANNINGTON ISANDA	22119665242	61	854	51	714	56	784	51	628	65	882	54	736	P/N 1619 KAPSOUA
2368101	RUTH JEPCHUMBA KOMEN	22119761264	66	924	65	910	60	840	65	842	61	760	44	505	P/N 9/1588 KAPSOYA
2375793	KIBIWOT SUMBAEI GILBERT	22119697245	4	56	3	42	7	98	4	171	4	171	3	162	PLT B9/1605 KAPSOYA
2379780	WILLIAM MBURU MACHARIA	22119697633	24	336	31	434	23	322	22	355	6	180	4	156	B 9/1609 KAPSOYA
2379781	JOSEPHINE AUMA AGURE	22119665572	48	672	40	560	45	630	18	307	44	555	24	371	PLT E M BLOCK 9/1598 KAPS
2379783	WILLIAM MBURU MACHARIA	22119665408	66	924	63	882	69	966	64	836	62	835	60	865	B 9/1606 KAPSOYA
2382157	EVANS NYAGECHI NYANG AYA	22120373117	155	2170	143	2002	163	2282	126	1865	152	2475	117	1829	B9/1606 KAPSOYA
2387854	MARY CHEPKEMBOI LAGAT S/N 4	22119718868	138	1932	131	1834	143	2002	113	1675	134	2161	91	1389	P/NO B/1569 KAPSOYA
2392487	JOHN KIPRONO CHERUIYOT	22119697385	33	462	30	420	30	420	0	134	29	456	32	418	1644 SITE AT SERVICE
2415167	ALICE CHEPEKITUI NAMTALA	22119761470	49	686	46	644	58	812	53	789	31	490	29	440	9/1602 KAPSOYA SQ 2
2415749	MARY NALIAKA MUNIAFU	22119761306	50	700	51	714	56	784	41	699	49	721	49	698	BLK 9/1639 KAPSOYA ESTATE
2423603	NADHIFA SHARIF KANGETHE	22120373083	69	966	75	1050	61	854	54	834	66	932	61	904	B9/1646 KAPSOYA SITE AN SERVICES
2423604	NADHIFA SHARIF KANGETHE	22120373109	28	392	33	462	38	532	34	552	40	668	34	591	BLK 9/1643 KAPSOYA HSE B
2426811	GILBERT KIPRUTO OLBARA	22119697526	30	420	31	434	38	532	25	470	18	350	26	430	9/1634 KAPSOYA
2426813	IRENE JEPKORIR KOLEBECH	22119719189	65	910	67	938	73	1022	43	662	64	1116	38	645	9/1634 KAPSOYA

Appendix B: Power Consumption before ring fencing

Name of FDR	Input Energy (kWh)	Secondary Distribution TX No.	Energy Sales of the Transformer within Project Area (kWh)	Revenue Collected from the Transformer within the Project Area (Ksh.)
Kapsoya Ex Eldoret Industrial	325589	2230	7414	109194
		21116	12544	213219
		21198	9660	166809
		21332	13687	229273
		9215	6834	95676
		9292	12551	189238
		21058	13237	191478
		9217	9630	103637
		21333	12069	168966
		22237	10381	149995
		22334	9935	147615
		22335	18549	274036
		21149	4519	63490
		22538	12310	193502
		21831	9737	148701
		23618	15355	233760
		21207	18439	263805
		28110	5551	77714
		28109	8564	119896
		8203	5395	79969
		28271	9380	133887
		22336	19309	277632
		TOTAL	245,050	3,631,492

Appendix C: Power Consumption after ring fencing

Name of FDR	Input Energy (kWh)	Secondary Distribution TX No.	Measured Energy of Transformers within Project Area (kWh)	Energy Sales of the Transformer within Project Area (kWh)	Revenue Collected from the Transformer within the Project Area (Ksh.)
Kapsoya Ex Eldoret Industrial	325155	2230	9221	9194	131225
		21116	16118	16053	224742
		21198	12131	12067	168938
		21332	15697	15666	221526
		9215	6083	6064	85336
		9292	21001	20097	284044
		21058	19431	19426	271964
		9217	12797	12756	180130
		21333	10943	10937	166900
		22237	11138	11114	161341
		22334	14893	14870	208180
		22335	21467	21438	305776
		21149	3751	3728	56845
		22538	17547	17522	245308
		21831	13345	13303	186242
		23618	20471	20431	286034
		21207	17823	17808	275215
		28110	4798	4792	68651
		28109	6543	6531	104915
		8203	6501	6496	93613
		28271	10856	10845	158961
		22336	23336	23327	334758
		TOTAL	295891	294665	4220644

Appendix D: Transformer Loading

No.	Secondary Distribution TX No.	Rating of Sec Dist. Transformer (kVA)	Loading of the Sec Dist. Transformer (kVA)	Loading Area
	22130	315	212	RM PATEL
	21116	200	150	SPECIAL SCH
	21198	200	157	SOS
	21332	315	211	KENYA RE
	9215	315	91	KAPSOYA SCH
	9292	200	108	RAYMONDS
	21058	50	69	METROLOGICAL
	9217	315	322	ET LIMO
	21333	315	281	BAPTIST
	22237	100	92	ELDOVILLE
	22334	200	130	MARIAKANI
	21149	315	270	SITE & SERVICE
	22538	100	9	NGURUNGA
	21831	200	201	GREENWAYS
	23618	50	98	KONA KUBWA
	21207	315	300	KAPSOYA VALLEY
	28110	200	181	JUNIORATE
	28109	200	83	IMMACULATE
	8203	50	133	SISTERS SCH
	28271	50	6	ANAN
	22336	100	94	CYRUS
	TOTAL	4080	3026	