

TRANSMISSION MASTER PLAN

VOLUME II

2025 - 2044



JUNE 2025

Table of Contents

ANNEX 1: CAPACITY AND GENERATION FOR THE PAST 5 YEARS	1
ANNEX 2: LIST OF GOVERNMENT OF KENYA OFF-GRID STATIONS.	5
ANNEX 3: DEMAND DRIVERS	8
ANNEX 4: DEMAND FORECAST RESULTS	13
ANNEX 5: GENERATION DISPATCH	15
ANNEX 6: LOAD DISTRIBUTION BY REGIONS.....	17
ANNEX 7: SIMULATION FINDINGS	18
ANNEX 8: CLIMATE RISK MATRIX.....	32
ANNEX 9: CLIMATE FINANCE AND CARBON MARKET POTENTIAL FOR KEY TRANSMISSION PROJECTS	34
ANNEX 10: RISK AND MITIGATION MATRIX.....	37
ANNEX 11: LOG FRAME FOR MONITORING EVALUATION ACCOUNTABILITY AND LEARNING (MEAL)	43
ANNEX 12: SUMMARY TRANSMISSION LINES PROJECT AS AT JUNE 2025	45
ANNEX 13: TRANSMISSION GRID NETWORK	67

ANNEX 1: CAPACITY AND GENERATION FOR THE PAST 5 YEARS

Table 0-1: Power system operation statistics for 5 years

COMPANY	Capacity (MW) as at 30.06.2024		Energy Purchased GWh				
	Installed	Effective ¹ / Contracted ²	2019/20	2020/21	2021/22	2022/23	2023/24
KenGen							
Hydro:							
Gitaru	225.0	216.0	879	884	709	456	806
Kamburu	94.2	90.0	350	443	368	236	407
Kiambere	168.0	164.0	905	977	796	516	806
Kindaruma	72.0	70.5	203	184	165	102	188
Masinga	41.2	40.0	48	176	154	77	116
Tana	25.7	20.0	133	123	87	82	118
Turkwel	106.0	105.0	426	715	539	486	413
Sondu Miriu	60.7	60.0	509	431	339	375	280
Sang'oro	21.2	20.0	166	144	110	122	126
Small Hydros	11.35	11.08	19	16	34	67	75
Hydro Total	825	797	3,636	4,091	3,300	2,520	3,335
Thermal:							
Kipevu Diesel Power I	0.0	0.0	80	55	141	93	0
Kipevu Diesel Power III	120.0	115.0	162	147	399	231	365
Muhoroni GT	60.0	0.0	37	43	40	35	0
Thermal Total	180	115	279	245	580	360	365
Geothermal:							
Olkaria I (Units 1,2&3)	0.0	0.0	291	70	204	113	0
Olkaria II	104.5	101.0	583	500	488	730	627
Eburru	2.4	2.1	7	8	4	8	9
OW37 - WellHead 37 ³	22.0	17.5	118	101	65	70	56
OW 43 - WellHead 43	14.0	10.0	56	55	40	29	44
OW 914 - WellHead 914 ⁴	52.5	42.5	285	231	215	211	161
Olkaria IV	149.9	140.0	1,006	960	1,007	1,013	970
Olkaria I AU (Units 4&5)	150.5	140.0	985	861	774	1,042	1,020
Olkaria V	172.3	158.0	945	1,268	1,066	1,266	1,164

COMPANY	Capacity (MW) as at 30.06.2024		Energy Purchased GWh				
	Installed	Effective ¹ / Contracted ²	2019/20	2020/21	2021/22	2022/23	2023/24
Olkaria I (Unit 6)	86.9	80.0			113	607	583
Geothermal Total	755	691	4,276	4,053	3,977	5,089	4,633
Wind							
Ngong	25.5	25.5	46.6	53.6	53.6	57	50
KenGen Total	1,786	1,628	8,237	8,443	7,911	8,027	8,383
Government of Kenya (Rural Electrification Programme)							
Off-grid Diesel	41.0	24.2	60.1	64.8	71	74	85
Off-grid Solar	2.3	1.7	0.00	0.26	0.25	0.34	0.28
Off-grid Wind	0.6	0.0	0.33	0.00	0.00	0.00	0.00
Total Offgrid	44	26	60	65	71	75	85
Independent Power Producers (IPP) - Thermal & Geothermal							
Thermal:							
Iberafrica	52.5	52.5	55	45	86	116	38
Rabai Power	90.0	88.6	252	266	502	446	441
Kipevu II (Tsavo)	0.0	0.0	152	183	48	0	0
Thika Power	87.0	87.0	50	93	211	194	121
Gulf Power	80.3	80.3	18	21	81	170	53
Triumph Power	83.0	83.0	15	22	70	35	26
Thermal Total	393	391	543	630	997	961	678
Geothermal:							
OrPower 4 -Geothermal (1st plant)	63.8	63.8	460	390	392	399	332
OrPower 4 -Geothermal (2nd plant)	39.6	39.6	277	269	265	245	210
OrPower 4 -Geothermal (3 rd plant)	17.6	17.6	136	128	128	116	104
OrPower 4 -Geothermal (4th plant)	29.0	29.0	202	194	190	180	147
Sossian Menengai Geothermal	35.0	35.0				6	282
Geothermal Total	185	185	1,076	981	976	946	1,075
Wind							
Lake Turkana Wind Power	310.0	300.0	1,237	1,559	1,573	1,678	1,326

COMPANY	Capacity (MW) as at 30.06.2024		Energy Purchased GWh				
	Installed	Effective ¹ / Contracted ²	2019/20	2020/21	2021/22	2022/23	2023/24
Kipeto Energy PLC	100.0	100.0		88	426	466	404
Wind Total	410	400	1,237	1,647	1,999	2,144	1,730
Small Hydro:							
Imenti Tea Factory	0.3	0.3	1.0	0.4	0.2	0.3	1
Gikira small hydro	0.5	0.5	1.8	1.8	0.9	1.0	2
Regen-Terem	5.0	5.0	31.6	22	15	20	23
Gura KTDA	2.8	2.8	21.2	11.3	20	11	14
Chania KTDA	0.5	0.5	1.1	1	1	0.2	1
North Mathioya (Metumi) KTDA	3.6	3.6		13.8	9.9	14	17
Kianthumbi Small hydro	0.5	0.5		0.36	2.0	1.5	3
Small Hydro Total	13.2	13.2	56.6	50.3	48.5	48.9	60.7
Cogeneration:							
Biojoule Biogas	2.0	2.0	0.3	0.3	0.4	0.2	0.1
Cogeneration Total	2.0	2.0	0.3	0.3	0.4	0.2	0.1
Solar:							
Strathmore Solar	0.3	0.3	0.14	0.09	0.05	0.08	0.08
Selenkei Solar Farm	40.0	40.0		1.50	89	86	94
Cedate Solar Farm	40.0	40.0			88	94	96
Malindi Solar Group	40.0	40.0			54	99	99
Alten Kenya SolarFarm	40.0	40.0				79	100
Solar Total	160.3	160.3	0.1	1.6	230.4	357.8	389.0
IPP Total	1,163	1,152	2,913	3,310	4,251	4,458	3,933
REREC Garissa Solar Plant							
Garissa Solar Plant	50.0	50.0	91	86	82	86	84
REREC Garissa Total	50	50	91	86	82	86	84
Imports							
UETCL			156	192	332	275	217
TANESCO			0.0	0.0	0.0	0.0	0.0
EEU (MOYALE)			4.5	4.8	5.5	5.5	5.5
EEP 500 HVDC	200.0	200.0				364	977

COMPANY	Capacity (MW) as at 30.06.2024		Energy Purchased GWh				
	Installed	Effective ¹ / Contracted ²	2019/20	2020/21	2021/22	2022/23	2023/24
Total Imports	200	200	161	197	338	644	1,199
SYSTEM TOTAL	3,243	3,056	11,462	12,101	12,653	13,290	13,684
SUMMARY OF KEY STATISTICS							
SALES - KPLC System (GWh)			8,154	8,553	9,147	9,539	9,813
- REP System (GWh)			602	632	650	667	660
- Export to Uganda (GWh)			18	17	16	27	43
- Export to Tanesco (GWh)			0.00	0.00	0.00	0.00	0.00
TOTAL SALES (GWh)			8,773	9,203	9,813	10,233	10,516
System Losses (GWh) ⁵			2,689	2,898	2,839	3,057	3,169
System Peak Demand (MW) ⁶			1,926	1,994	2,057	2,149	2,177
System Load Factor			67.9%	69.3%	70.2%	70.6%	71.8%
Sales % of Energy Purchased			76.5%	76.1%	77.6%	77.0%	76.8%
Losses as % of Energy Purchased			23.46%	23.95%	22.44%	23.00%	23.16%
Annual Growth: - Energy Purchased			-0.26%	5.57%	4.56%	5.04%	2.97%
-Total Sales			0.05%	4.90%	6.63%	4.28%	2.76%
-KPLC Sales			0.08%	4.90%	6.94%	4.28%	2.87%
-REP Sales			1.12%	5.02%	2.89%	2.58%	-1.06%
-System Peak Demand			2.33%	3.51%	3.18%	4.49%	1.30%

Notes:

1)PPA Effective Capacity - Contracted Capacity for the Power Plant on Energy PPA

2)PPA Contracted Capacity – Contracted Capacity for the Power Plant on the Capacity PPA

3) Includes OW37, OW 37 kwg 12, OW 37 kwg 13 and OW 39 Olkaria Mobile Wellheads centrally metered at OW 37

4) Includes OW905,OW914 ,OW915 and OW919 Olkaria Mobile Wellheads centrally metered at OW 914

5) System losses comprise of technical and non-technical losses.

6) The peak demand shown includes export to Uganda.

Source: KPLC Annual report June 2024

ANNEX 2: LIST OF GOVERNMENT OF KENYA OFF-GRID STATIONS.

Table 0-1: RREC Off-Grid and Mini-Grid Projects

	Capacity (MW)	
	Jun-2024	
COMPANY	Installed	Effective*/Contracted
Government of Kenya (OFF-GRID Stations)		
Off-Grid		
Wajir Diesel	4.8	2.98
Mandera Diesel	0.8	0.2
Mandera Aggreko Diesel	2.6	2.1
Mandera Solar	0.33	0.23
Marsabit Diesel	2.8	1.5
Marsabit Wind	0.5	0
Lodwar Diesel	0.4	0.3
Lodwar Solar	0.06	0
Lodwar Aggreko Diesel	2.6	2.4
Merti Diesel	0.52	0.4
Merti Solar	0.01	0.01
Habasweni Diesel	1.8	1.36
Habasweni Solar	0.03	0
Habasweni Wind	0.05	0
Elwak Diesel	1.36	0.52
Elwak Solar	0.06	0.03
Baragoi Diesel	0.24	0.129
Mfangano Diesel	0.64	0.33
Mfangano Solar	0.01	0.01
Lokichogio Diesel	1.085	0.6
Eldas Diesel	0.92	0.28
Eldas Solar	0.03	0.024
Takaba Diesel	0.8	0.55
Takaba Solar	0.03	0.03
Rhamu Diesel	1.1	0.84
Rhamu Solar	0.06	0.03
Laisamis Diesel	0.584	0.47
Laisamis Solar	0.08	0
North Horr Diesel	0.584	0.4
Lokori Diesel	0.6	0.44
Moyale Diesel	2.252	1.34
Dadaab Diesel	0.784	0.54
Faza Diesel	1.72	1.02
Lokitaung Diesel	0.184	0.15
Kiunga Diesel	0.27	0.2
Hulugo Diesel	0.24	0.18
Banisa Diesel	0.48	0.32
KAMOLIRIBAN Diesel	0.402	0.08
KOTULO Diesel	0.36	0.28
Kakuma Diesel	1.6	0.961
LOKIRIAMA	0.464	0.05
KHORONDILE	0.6	0.5
Sololo	0.64	0.52
Maikona	0.304	0.05

	Capacity (MW)	
	Jun-2024	
COMPANY	Installed	Effective*/Contracted
Government of Kenya (OFF-GRID Stations)		
REREC Mini-Grids		
Ashabito Diesel	0.04	0.04
Ashabito Solar	0.06	0.06
Kiliwaheri Diesel	0.04	0.04
Kiliwaheri Solar	0.06	0.06
Gari Diesel	0.04	0.04
Gari Solar	0.06	0.06
Burduras Diesel	0.04	0.04
Burduras Solar	0.06	0.06
Lafey Diesel	0.04	0.04
Lafey Solar	0.06	0.06
Shibir Fatma Diesel	0.04	0.04
Shibir Fatma Solar	0.06	0.06
Ambalo Diesel	0.04	0.04
Ambalo Solar	0.06	0.06
Illaut Diesel	0.04	0.04
Illaut Solar	0.06	0.06
Balesa Diesel	0.04	0.04
Balesa Solar	0.06	0.06
Basir Diesel	0.04	0.04
Basir Solar	0.06	0.06
Sarman Diesel	0.04	0.04
Sarman Solar	0.06	0.06
Sarif Diesel	0.04	0.04
Sarif Solar	0.06	0.06
Gurar Diesel	0.04	0.04
Gurar Solar	0.06	0.06
Hadado Diesel	0.04	0.04
Hadado Solar	0.06	0.06
Riba Diesel	0.04	0.04
Riba Solar	0.06	0.06
Biyamadhow Diesel	0.04	0.04
Biyamadhow Solar	0.06	0.06
Sangailu Diesel	0.04	0.04
Sangailu Solar	0.06	0.06
Eldera Diesel	0.04	0.04
Eldera Solar	0.06	0.06
Garsweno Diesel	0.04	0.04
Garsweno Solar	0.06	0.06
Liboi Diesel	0.04	0.04
Liboi Solar	0.06	0.06
Napelelelim Diesel	0.04	0.04
Napelelelim Solar	0.06	0.06
Letea Diesel	0.04	0.04
Letea Solar	0.06	0.06
Ilowareng Diesel	0.04	0.04
Ilowareng Solar	0.06	0.06
Eliye Diesel	0.04	0.04
Eliye Solar	0.06	0.06

	Capacity (MW)	
	Jun-2024	
COMPANY	Installed	Effective*/Contracted
Government of Kenya (OFF-GRID Stations)		
Kangangipur Diesel	0.04	0.04
Kangangipur Solar	0.06	0.06
Lopeduru Diesel	0.04	0.04
Lopeduru Solar	0.06	0.06
TOTAL		
Off-grid Diesel	41.0	24.2
Off-grid Solar	2.3	1.9
Off-grid Wind	0.55	0.00
Total Off-grid	43.8	26.1

Source; KPLC Annual report June 2024

ANNEX 3: DEMAND DRIVERS

The main factors influencing demand growth considered were demography, GDP growth, Specific Vision 2030 Flagship projects, E-cooking, and Electric vehicles.

Demography

Historically, population size and urbanization rate have shown a positive correlation with electricity usage. As shown below, domestic commercial (DC), small commercial (SC), and street lighting (SL) show positive correlations with population growth. This correlation is used to perform trend analysis in estimating future electricity demand within the named classes.

The demand for more electricity is mainly due to economic activities and household needs. Currently, the inadequacy of individual consumer data makes forecasting power demand a challenge, thus requiring the utilization of aggregated data for system load predictions. Population growth and urbanization are essential elements to the demand rise, as is the growth of GDP, which has an immediate result on household earnings and thus electrical consumption. Additionally, key government priority projects through the Bottom-up Economic Transformation Agenda (BETA) and Vision 2030 flagship projects have a bearing on GDP growth in both the reference and high scenarios.

The methodology used to undertake the forecast is similar to that used in the previous updates of the LCPDP plans. The methodology follows Model for Analysis of Energy Demand (MAED) principles for the domestic consumers, whereby a simple correlation factor between GDP growth and consumption for the commercial & industrial consumers and a correlation between street lighting consumers and domestic consumers is formulated. A regression analysis using the past seven years' records of GDP and large power consumption, shows that a 100% increase in GDP results into approximately 47% increase in large power consumption.

The demand forecasting model considers this correlation to perform trend analysis in estimation of future electricity demand within these classes. Historically, population size and urbanization rate have shown a positive correlation with electricity usage in Domestic, small commercial and street lighting customer categories as shown in figure 1 below.

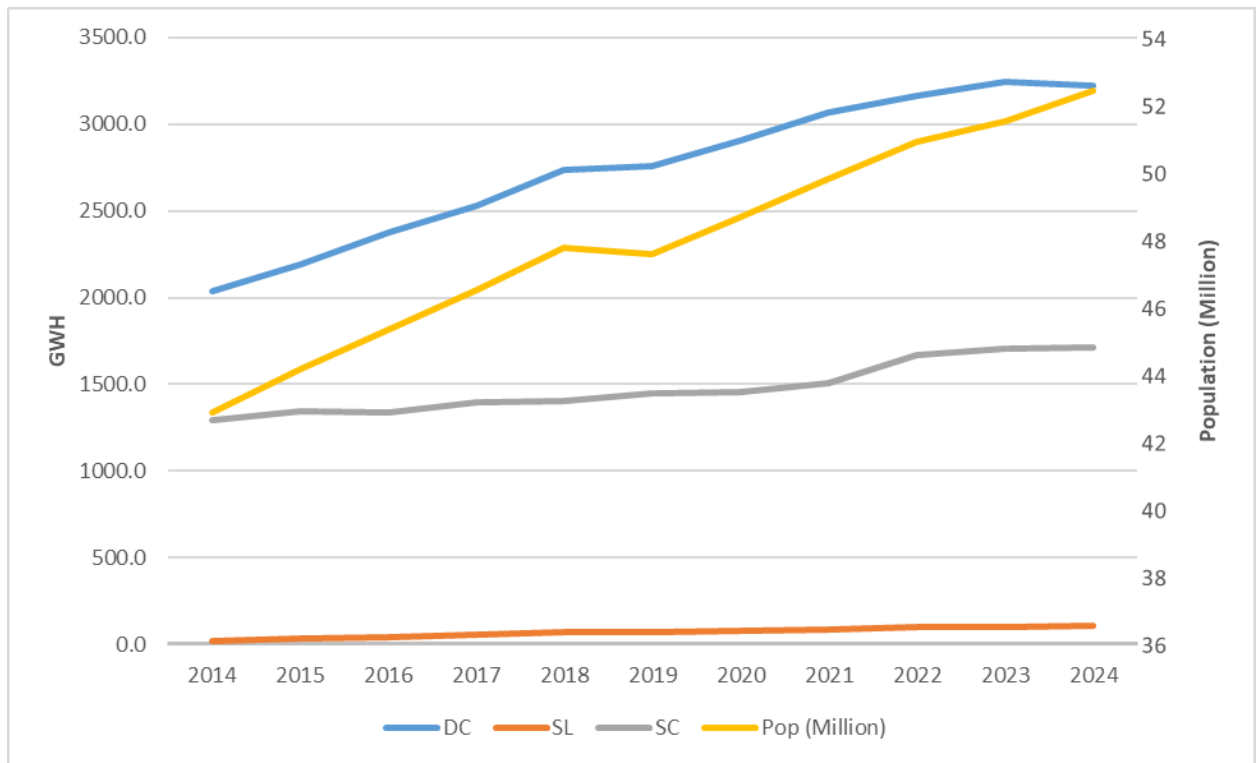


Figure 3-1; Historical trend between SC, DC, SL and Population

Source: MTP 2025-2029

Domestic Consumption

In the past decade, domestic connections has significantly increased; however, annual specific consumption has declined from 819kWh in 2014/15 to 351kWh in 2023/24 as shown in the table below. The decrease is due to two factors: universal electricity access leading to more low-income households being connected yet they consumer less power, and advancements in energy-efficient appliances and electronics.

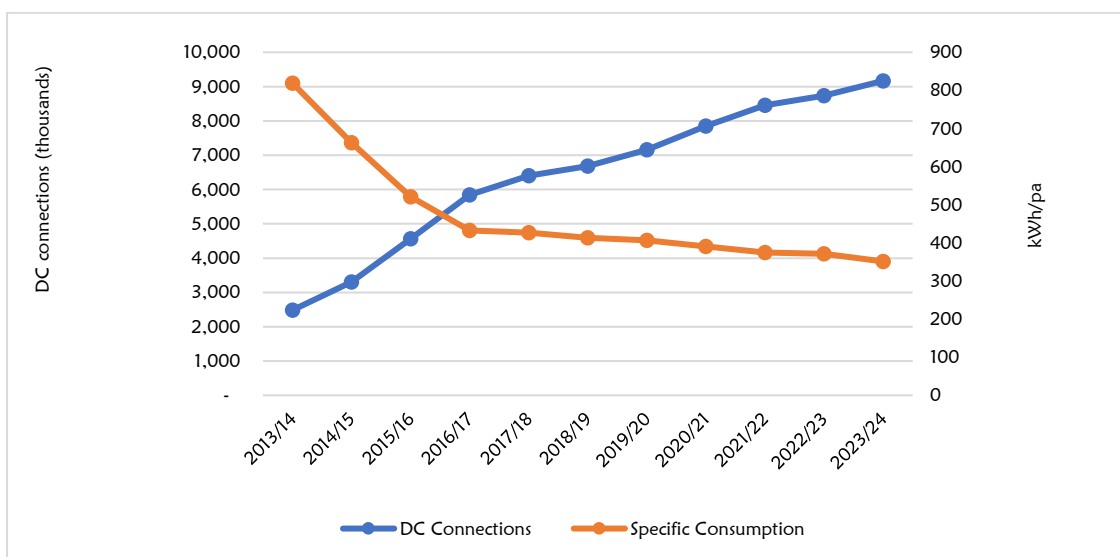


Figure 3-21; Historical trend between SC, DC, SL and Population

An analysis of power demand as a result of e-mobility and e-cooking was undertaken to assess the impact on overall future electricity demand.

E-Mobility

Kenya's electric vehicle (EV) sector is steadily progressing, supported by favourable government policies, expanding charging infrastructure, and rising public awareness of environmental and economic benefits. To support the government initiatives, Kenya Power and Lighting Company (KPLC) has introduced a special tariff for this category of consumers, offering off-peak rates for those connected under the tariff categories CI1-CI5. The sector also plays a significant role in the country's energy transition and Vision 2030 goals especially in reducing greenhouse gas (GHG) emissions and enhancing energy security. According to National E-Mobility Policy Kenya, 2024, road transport accounts for 94% of transport emissions. The National Climate Change Action Plan (NCCAP) 2023-2027 identifies the uptake of EVs as one of the climate actions in the transport and energy sectors as they significantly cut CO₂ emissions, improve energy efficiency, and build a clean transport network.

According to the bi-annual EPRA statistic report 2024/25, cumulative number of registered EVs stood at 5,294 as of December 2024, a rise from 3,753 registered in 2023. The growth is attributed to various government initiatives such as introduction of special electric mobility tariff of 16 Kshs/kWh, reduction in excise duty on electric vehicles from 20% to 10%, exemption of fully electric cars from VAT, the expansion of charging infrastructure, and declaration by the Kenyan government to the COP26 to transition to 100% zero-emission cars by 2035. Besides, according to National Energy Efficiency and Conservation Strategy 2020, 5% of the target newly registered vehicles will be EVs by 2030. With all these initiatives, it is expected that the level of EV's adoption in Kenya will increase substantially. It is therefore expected that modelling the demand for EVs will be improved as more data becomes available. Using the projections in the MTP 2025-2029, electricity demand from EVs is expected to increase from 23.51MW in 2024 to 219.2MW and 273MW in 2030 for both reference and vision scenarios and subsequently to **397.87MW in 2044, assuming a growth rate of 4.35%.**

E- cooking

According to Kenya National e-Cooking Baseline Study Report 2023 done by Nuvoni, 0.58% of the population who own electric appliances primarily use electric appliances for cooking while 3.9% of households use these appliances for cooking, reheating food and preparing beverages. Ownership and usage of the appliance is influenced by gender, wealth, and urban-rural divide. Besides, 74.6% of the Kenyan households, believed that traditionally cooked food tastes better. Kenya aims to achieve 100% access to clean cooking by 2028, a strategy that is aligned with Sustainable Development Goal 7 (SDG7). The milestone also aligns with reducing deforestation, indoor air pollution, and greenhouse gas emissions.

An assessment of the transition to e-cooking was conducted, focusing on a typical residential customer. Currently, 0.58% of the household primarily rely on electricity for cooking. Projected demand growth attributed to e-cooking is anticipated to be 10% by 2028, according to the Kenya National Cooking Transition Strategy (2024-2028) which outlines a five-year plan to establish a sustainable eCooking marketing place. The value will be escalated to 15% by 2030. Further, a diversity factor of 22% from a study done in Malawi, was employed to account for the variation in uses of the appliance. The estimated demand of 1.16MW in 2024 is projected to increase to 28.2MW and 37.43MW by 2029 and 38.57 MW by 2030 and 141.14 MW by 2044 for reference and vision scenario, respectively.

Government Priority areas

Electricity demand in Kenya is expected to grow steadily in the coming years driven by various government-led development initiatives that aim to transform and sustain the economy. Strategic programs target housing, industrialization, digitalization, and energy transition, which intend to significantly increase Kenya's energy consumption.

- a. Affordable housing and urban development: as per the National Housing Corporation Strategic Plan 2023-2027, the Kenyan government has identified housing as one of its development priorities and targets to facilitate the construction of at least 1,000,000 affordable houses by 2027.
- b. Industrialization and MSME Growth: MTP IV has proposed a 5.9% annual industrial growth by 2027.
- c. Digital superhighway and creative economy: the Kenya National Digital Master Plan 2022-2032 aims at expanding Kenya's fibre network coverage countrywide by connecting 100,000 KM of fibre optic cable to provide internet to schools, government institutions/offices, health facilities, and public spaces among others. The facilities will require electricity to support data centers and ICT operations. Coupled with the Last Mile connectivity program, this effort will empower the creative digital sectors while reducing the digital divide.
- d. Green Energy Transition and Electric Cooking: Kenya is accelerating its shift towards clean energy, focusing on electric mobility and electric cooking. These trends underscore the need for grid expansion and investment in green infrastructure.
- e. Social services and healthcare: the Universal Health Coverage initiative indirectly increases electricity demand through hospitals and clinics construction and upgrades. Increased use of medical equipment especially in rural areas connected through the Last Mile Connectivity program will contribute towards rising energy needs.
- f. Green hydrogen development: Kenya has positioned itself as a pioneer in green hydrogen, a clean energy carrier capable of transforming energy storage and transport. In a major step, Kenya has published a Green Hydrogen Strategy and Roadmap and Guidelines on Green Hydrogen and its Derivatives in September 2023 and May 2024 respectively. Green hydrogen policy framework is also underway. A notable project includes the development of a geothermal-powered green hydrogen plant to produce green ammonia for local fertilizer manufacturing, reducing fossil reliance and boosting energy innovation.

2025 Budget Policy Statement

The 2025 BPS is built on the Government's Bottom-Up Economic Transformation Agenda with a strong emphasis on inclusive green growth. This approach recognizes the energy sector as a foundational enabler for economic transformation, job creation, and sustainable development. The energy agenda is aligned with the national goals such as reducing the cost of living, supporting manufacturing, expanding infrastructure, and transitioning to clean energy. Some of the proposals in the BPS that will influence energy consumption include the following

- a. expansion of electricity generation and access: the government plans to connect 1.44 million new electricity customers and 1,080 public facilities and develop infrastructure to enhance energy resilience and meet the growing electricity demand, especially in industrial, residential, and institutional sectors.
- b. Green energy and E-mobility Transition: BPS promotes clean energy technologies by installing solar PV systems, promote clean cooking technologies and energy-efficient appliances, expand energy centers to all counties, and electrify schools, boreholes, and public institutions. BPS also highlights E-mobility as a key intervention to reduce emissions and fuel dependence. In collaboration with BasiGo and Kenya Vehicle Manufacturers (KVM), the Kenyan government

has begun a local assembly of electric buses, aiming for 1,000 units over three years. The aim is to support the target of a fully electric bus fleet by 2027.

- c. Green Hydrogen and climate adaptation: Kenya is developing green hydrogen strategy to leverage excess renewable energy for hydrogen and ammonia production and support fertilizer production and export capability. Climate resilience and emission reduction is also key in the document with the ongoing integration of climate data and environmental accounting into economic planning.
- d. Infrastructure for economic growth: infrastructure expansion includes electrification of transport (Bus Rapid Transit and Mass Rapid Transit System) using electric vehicle buses signaling a demand shift in electricity usage towards public transit systems. Cooling demand from new data centers and creative digital economy also contributes to the projected rise in electricity consumption.

ANNEX 4: DEMAND FORECAST RESULTS

Table 4-1: Peak Demand Forecast Results.

Year	Reference (MW)	Vision (MW)	Low (MW)
2024	2,288	2,288	2,288
2025	2,416	2,731	2,327
2026	2,523	2,914	2,376
2027	2,626	3,092	2,426
2028	2,745	3,283	2,478
2029	2,847	3,493	2,532
2030	3,067	3,846	2,657
2031	3,305	4,234	2,788
2032	3,561	4,662	2,925
2033	3,836	5,132	3,069
2034	4,133	5,651	3,220
2035	4,453	6,221	3,379
2036	4,798	6,849	3,545
2037	5,169	7,541	3,720
2038	5,569	8,302	3,903
2039	6,000	9,141	4,096
2040	6,464	10,064	4,297
2041	6,965	11,080	4,509
2042	7,504	12,199	4,731
2043	8,085	13,430	4,964
2044	8,710	14,786	5,209
Average Growth rate	6.92%	9.81%	4.21%

SOURCE: LCPDP 2024-2043 and MTP 2025-2029

Table 4-2: Electricity Consumption Forecast Results

Year	Reference (MW)	Vision (MW)	Low (MW)
2024	10,763	10,763	10,763
2025	11,168	12,518	11,043
2026	11,732	13,432	11,488
2027	12,323	14,388	11,949
2028	13,001	15,423	12,428
2029	13,595	16,548	12,934
2030	14,516	18,138	13,550
2031	15,499	19,881	14,196
2032	16,548	21,791	14,872

Year	Reference (MW)	Vision (MW)	Low (MW)
2033	17,669	23,885	15,580
2034	18,865	26,180	16,323
2035	20,143	28,695	17,100
2036	21,507	31,453	17,915
2037	22,963	34,475	18,768
2038	24,518	37,787	19,663
2039	26,179	41,418	20,599
2040	27,952	45,398	21,581
2041	29,845	49,760	22,609
2042	31,866	54,541	23,686
2043	34,024	59,781	24,814
2044	36,328	65,525	25,996
Average Growth rate	6.28%	9.47%	4.51%

SOURCE: LCPDP 2024-2043 and MTP 2025-2029

ANNEX 5: GENERATION DISPATCH

Table 5-1: Medium Term System Summary (Generation, Load & Losses)

ZONE		2025			2030		
		Generation	Load	Losses	Generation	Load	Losses
Ethiopia	MW	194.1	0	1.1	600.7	0	10.8
	MVAr	-245.4	0	129.6	-244.6	0	471.7
Nairobi	MW	227.5	1077.2	25	208	1557	51.7
	MVAr	10.6	324.1	204.4	24.2	495.4	407.6
Uganda	MW	73	0	0	150	0	0
	MVAr	-19	0	0	-19	0	0
Coast	MW	156	330	7	45	508.2	17.1
	MVAr	93.5	70.7	69.5	-23	167.8	138
Mt. Kenya	MW	470.5	216.9	17.6	377.2	335.8	13.1
	MVAr	9.8	46.2	97.9	-8.5	106.9	105.9
Central Rift	MW	761.8	203.7	20.1	1136.4	267.9	16.1
	MVAr	-57	34.5	174.2	-74.1	85.3	251.2
Western Region	MW	81	205	10.6	125.1	232.1	12.1
	MVAr	-8.6	25	39.5	-5.9	73.9	39.5
North Rift	MW	277	116.2	8.6	745	151.7	11.9
	MVAr	-28.3	30.2	85.2	-83.8	48.3	114
Tanzania	MW	0	0	0.1	0	200	0.4
	MVAr	0	0	1.5	0	90	4
Active Power (MW)	MW	2,194.1	2,071.1	121.3	2,924.4	2,835.8	86.9
Reactive Power (MVAr)	MVAr	-0.9	679.2	1,008.5	47.3	926.8	1,209.9

SOURCE: KETRACO

Table 5-2: Long Term System Summary (Generation, Load & Losses)

ZONE		2035			2040			2043		
		Generation	Load	Losses	Generation	Load	Losses	Generation	Load	Losses
Nairobi	MW	248.6	2176.3	41.3	175.5	2,886.6	137.5	203.3	3,454.8	114.8
	MVAr	51.0	440.4	419.6	41.5	436.3	1,005.6	21.1	440.4	1,143.6
Coast	MW	520.0	738.2	20.2	1412.5	967.2	33.6	1,787.5	1,134.3	26
	MVAr	-78.8	155.2	158.5	-280.6	155.2	300.7	-173.3	169.7	223.6
Mt. Kenya	MW	1,085.4	477.8	24.3	1,049.8	642.8	19.4	946.7	763.7	43.3
	MVAr	-86.2	96.9	203.3	-31.3	96.9	233.0	-104.5	96.9	314.4
Central Rift	MW	1,368.6	367.2	19.6	1,652.6	491.2	36.3	1,851.6	603.2	40
	MVAr	-45.1	74.6	236	-63.1	74.6	250.4	-179.9	81.6	399.2

ZONE		2035			2040			2043		
		Generation	Load	Losses	Generation	Load	Losses	Generation	Load	Losses
Western Region	MW	184.3	324.5	10.1	207.0	438.8	9.9	242.0	337.7	24.2
	MVAr	3.6	65.2	62.2	21.4	65.2	59.7	-9.0	41.0	184.5
North Rift	MW	630.0	210.6	10.4	1,080.0	283.9	18.0	1,680.0	510.5	23.6
	MVAr	52.0	41.0	129.6	-123.7	41.0	222.6	-160.9	65.2	252.9
Ethiopia	MW	600.7	0	10.8	600.7	0	10.8	600.7	0	10.8
	MVAr	-244.6	0	471.7	-244.6	0	455.0	-251.2	0	487.1
Tanzania	MW	0	200.0	0.8	0	200.0	0.8	0	200.0	0.5
	MVAr	0	90.0	8.4	0	90.0	8.3	0	90.0	5.4
Uganda	MW	0	0	0	0	0	0	0	0	0
	MVAr	0	0	0	0	0	0	0	0	0
Active Power	MW	4,637.6	4,494.6	141.2	6,178.1	5,910.5	266.3	7,311.8	7,004.4	305.5
Reactive Power	MVAr	-452.2	963.3	1,704.8	-680.4	959.2	2537.2	-857.7	984.8	3,235.1

SOURCE: KETRACO

ANNEX 6: LOAD DISTRIBUTION BY REGIONS

Table 6-1: Load Distribution by Regions

REGION	2025		2026		2027		2028		2029	
	LOAD IN MW		LOAD IN MW		LOAD IN MW		LOAD IN MW		LOAD IN MW	
	OFF PEAK	PEAK	OFF PEAK	PEAK	OFF PEAK	PEAK	OFF PEAK	PEAK	OFF PEAK	PEAK
NAIROBI	413.5	1057.4	421.3	1116.3	517.2	1167.6	615.9	1235	640.3	1305.5
COAST	170	347.4	201.4	372.2	195.2	394.3	225.4	414.9	236.1	443
MT KENYA	87.7	225.1	89.3	237.7	109.8	248.7	130.9	263	135.1	276.1
C RIFT	84.4	203.1	85.8	214	98.1	211.1	115.2	222.8	119.5	235.1
W REGION	81.2	200.3	83.2	209.6	97.7	219.9	110.5	226.5	115.3	238.1
N RIFT	34.7	89.2	35.4	94.2	43.5	98.5	51.9	104.2	55.3	113.1
TOTALS	871.5	2122.5	916.4	2244	1061.5	2340.1	1249.8	2466.4	1301.6	2610.9

SOURCE: KETRACO

ANNEX 7: SIMULATION FINDINGS

Table 7-1: Year 2025 Three Phase Short Circuit Current

YEAR 2025 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (kA)	Breaker Capacity (kA)	% of Breaker Capacity
LOIY1	220	17.98	40	44.94
LOIY2	220	17.98	40	44.94
SUS1	220	4.52	40	11.31
SUS2	220	4.52	40	11.31
7FORKS_SLR	132	10.61	31.5	26.54
ULU11	132	2.98	31.5	7.44
JUJA RD11	132	15.28	31.5	38.20
DANDORA11	132	15.70	31.5	39.24
SULTAN HA1	132	2.67	31.5	6.67
KIBOKO11	132	2.02	31.5	5.04
MTITO AND1	132	1.55	31.5	3.88
RUARAK TE1	132	12.88	31.5	32.21
RUARAKA11	132	12.69	31.5	31.72
MAKINDU	132	1.83	31.5	4.58
KONZA	132	3.05	31.5	7.63
MACHAKOS11	132	2.53	31.5	6.33
RUARAKAT12	132	12.88	31.5	32.21
NEW SULTAN	132	2.75	31.5	6.88
ISINYA	132	3.85	31.5	9.62
NAMANGA	132	1.43	31.5	3.58
MERUWESHI	132	1.43	31.5	3.57
LOITOKTOK	132	0.96	31.5	2.41
KONZANEW	132	7.59	31.5	18.98
UPLANDS	132	10.68	31.5	26.71
WOTE	132	2.50	31.5	6.26
NRB NORTH	220	11.65	31.5	29.13
DANDORA21	220	12.39	31.5	30.98
EMBAKASI21	220	11.27	31.5	28.17
ISINYA21	220	11.17	31.5	27.92
MALAA220	220	5.53	31.5	13.84
KIMUKA 220	220	9.50	31.5	23.74
ATHI RIVER	220	10.92	31.5	27.31
CABLE-OHL	220	10.78	31.5	26.96
CBD	220	10.50	31.5	26.26
KIPETO 220	220	8.78	31.5	21.94
THIKA RD21	220	11.30	31.5	28.25

YEAR 2025 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (kA)	Breaker Capacity (kA)	% of Breaker Capacity
ISINYA41	400	5.88	40	14.71
SUSWA	400	7.16	40	17.91
KONZA4	400	5.15	40	12.88
KIMUKA	400	6.21	40	15.51
NAMANGA	400	4.55	40	11.37
MAKINDU400	400	4.71	40	11.77
KIPEVU11	132	7.14	31.5	17.84
MANYANI11	132	1.57	31.5	3.92
SAMBURU11	132	2.81	31.5	7.02
KOKOTONI11	132	6.53	31.5	16.33
RABAI11	132	7.74	31.5	19.34
KILIFI11	132	2.72	31.5	6.81
BAMBURI11	132	5.16	31.5	12.91
VOI11	132	1.68	31.5	4.21
MAUNGU11	132	1.88	31.5	4.69
MARIAKANI1	132	4.68	31.5	11.69
GALU11	132	2.47	31.5	6.17
RABAITRF11	132	7.74	31.5	19.34
RABTRF12	132	7.74	31.5	19.34
VIPINGO31	132	3.64	31.5	9.10
MSCEMTEE31	132	3.28	31.5	8.20
MSACEM31	132	3.18	31.5	7.96
MSACEMTEE3	132	3.11	31.5	7.78
TITANIUM11	132	2.07	31.5	5.17
JOMVU	132	6.61	31.5	16.53
TEE OFF	132	6.77	31.5	16.92
BAMB TEE	132	4.95	31.5	12.38
RABAITR 13	132	7.74	31.5	19.34
NEW KILIFI	132	3.00	31.5	7.50
TOP STEEL	132	4.15	31.5	10.38
NEWMAUNGU	132	1.97	31.5	4.93
WAPA TEE	132	4.13	31.5	10.34
WPA TEE2	132	4.13	31.5	10.34
DEVK SMBUR	132	3.24	31.5	8.10
RABAI21	220	5.34	31.5	13.36
MALINDI21	220	1.92	31.5	4.79
GARSEN21	220	1.12	31.5	2.80
LAMU21	220	0.81	31.5	2.03
MARIAKANI2	220	5.67	31.5	14.18
WERU	220	2.22	31.5	5.54
MLDI SOLAR	220	2.22	31.5	5.54

YEAR 2025 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (kA)	Breaker Capacity (kA)	% of Breaker Capacity
MARIAKANI4	400	3.48	40	8.69
KINDARUMA1	132	8.57	31.5	21.43
GITARU11	132	12.58	31.5	31.46
KAMBURU11	132	14.62	31.5	36.56
MASINGA11	132	6.71	31.5	16.78
NANYUKI11	132	2.27	31.5	5.67
KYENI11	132	3.43	31.5	8.57
ISHIARA11	132	4.75	31.5	11.88
MERU11	132	2.15	31.5	5.37
GITHAMBO11	132	1.97	31.5	4.91
KIGANJO11	132	2.08	31.5	5.19
KAMBTRF11	132	14.62	31.5	36.56
KUTUS11	132	2.43	31.5	6.07
KUTUSTEE1	132	2.21	31.5	5.53
TEE 2	132	2.81	31.5	7.02
THIKA NEW	132	5.43	31.5	13.59
MWALA	132	4.22	31.5	10.56
KAMBURU21	220	9.63	31.5	24.07
KIAMBERE21	220	7.33	31.5	18.31
GITARU21	220	7.94	31.5	19.85
MUTOMO	220	2.44	31.5	6.10
MUTOMO	220	2.44	31.5	6.10
_MUTOMO	220	2.44	31.5	6.10
GATUNDU11	132	2.56	31.5	6.39
MWINGI11	132	4.01	31.5	10.01
GARISSA11	132	0.75	31.5	1.88
ISIOLO11	132	2.04	31.5	5.10
KITUI11	132	2.98	31.5	7.44
THIKA11	132	6.26	31.5	15.65
THIKA12	132	6.23	31.5	15.58
GARISA PV1	132	0.73	31.5	1.83
OLKARIA1 1	132	12.40	31.5	31.01
NAIVASHA11	132	9.15	31.5	22.88
OLKARIAIAU	132	12.26	31.5	30.65
LANET11	132	5.43	31.5	13.58
SOILO11	132	4.70	31.5	11.75
OLKARIA II	132	12.20	31.5	30.49
KABARNET11	132	2.76	31.5	6.89
MAKUTANO11	132	3.60	31.5	9.00
NAROK11	132	2.19	31.5	5.47
MENENGA11	132	4.20	31.5	10.51

YEAR 2025 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (kA)	Breaker Capacity (kA)	% of Breaker Capacity
RUMURUTI11	132	1.98	31.5	4.95
WELLHED37-	132	10.81	31.5	27.02
RONGAI_NC	132	3.81	31.5	9.52
RONGAI 132	132	4.03	31.5	10.07
TE NC	132	3.81	31.5	9.52
TEE	132	4.29	31.5	10.74
TEE_MDF	132	3.86	31.5	9.66
F	132	3.86	31.5	9.66
TEE	132	4.34	31.5	10.86
CHEMOSIT11	132	2.24	31.5	5.60
BOMET11	132	1.30	31.5	3.25
OLKARIAIAU	220	17.31	31.5	43.27
OLK V	220	13.66	31.5	34.14
OLKARIA II	220	17.40	31.5	43.50
SUSWA21	220	17.98	31.5	44.94
OLKARIA IV	220	14.24	31.5	35.61
OLK III	220	13.71	31.5	34.28
MUHORONI11	132	3.62	31.5	9.06
KISUMU 132	132	3.82	31.5	9.55
WEBUYE11	132	3.29	31.5	8.23
MUSAGA11	132	4.91	31.5	12.26
MUMIAS11	132	2.84	31.5	7.09
SONDU11	132	2.75	31.5	6.87
SANGORO11	132	2.61	31.5	6.52
KISII11	132	1.31	31.5	3.29
SOTIK	132	1.66	31.5	4.14
AWENDO11	132	0.99	31.5	2.48
RANGALA11	132	1.91	31.5	4.77
ONGENG	132	0.85	31.5	2.12
MASABA	132	0.78	31.5	1.94
MUSAGATEE	132	4.91	31.5	12.26
KIBOS 132	132	3.80	31.5	9.49
ANGA TEE1	132	3.84	31.5	9.59
ANGA TEE2	132	3.75	31.5	9.38
KIBOS 220	220	2.45	31.5	6.13
ELDORET11	132	3.81	31.5	9.53
LESSOS11	132	7.71	31.5	19.28
KITALE11	132	2.63	31.5	6.58
LESSTRF11	132	7.71	31.5	19.28
KOPERE	132	4.54	31.5	11.34
RITA	132	3.85	31.5	9.62

YEAR 2025 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (kA)	Breaker Capacity (kA)	% of Breaker Capacity
TURKWEL21	220	2.39	31.5	5.97
KITALE	220	1.77	31.5	4.42
ORTUM21	220	1.99	31.5	4.98
LESSOS	220	4.63	31.5	11.57
LOYAN	220	4.52	31.5	11.31
KAINUK21	220	2.38	31.5	5.95
TEE SLR	220	3.72	31.5	9.31
SLR PARK	220	3.68	31.5	9.20
LESSOS TEE	220	4.63	31.5	11.57
LESSOS TEE	220	2.96	31.5	7.40
TARUSHA41	400	3.57	40	8.93
TORO11	132	4.76	31.5	11.89

Table 0-2: Year 2044 Three-Phase Short Circuit Current

YEAR 2044 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (KA)	Breaker Capacity (KA)	% of Breaker Capacity
SUSWA21	220	32.4064	31.5	102.88
SUSWA21	220	30.4352	31.5	96.62
DONGO_KU	220	27.6505	31.5	87.78
SUSWA GEN	220	26.8056	31.5	85.1
DONGO_KU	220	26.715	31.5	84.81
SUSWA GEN	220	25.1629	31.5	79.88
ISINYA21	220	24.5363	31.5	77.89
JUJA RD11	132	24.4312	31.5	77.56
OLKARIA II	220	30.516	40	76.29
DANDORA11	132	24.0122	31.5	76.23
OLKARIAIAU	220	30.335	40	75.84
MALAA220	220	23.5127	31.5	74.64
BARINGO21	220	23.0256	31.5	73.1
RUARAKA11	132	22.5184	31.5	71.49
OLKII EXT	220	27.9928	40	69.98
GT_COAST1	220	21.9577	31.5	69.71

YEAR 2044 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (KA)	Breaker Capacity (KA)	% of Breaker Capacity
RUARAK TE1	132	21.7301	31.5	68.98
RUARAKAT12	132	21.7301	31.5	68.98
OLK V	220	27.1535	40	67.88
GILGIL 220	220	20.6238	31.5	65.47
OLKARIA IV	220	26.1758	40	65.44
KWALE TEE	220	20.4145	31.5	64.81
OLK VIII	220	25.207	40	63.02
LONGONOT	220	19.7374	31.5	62.66
MARIAKANI2	220	18.8778	31.5	59.93
GILGIL	400	23.4325	40	58.58
THIKA RD21	220	18.3867	31.5	58.37
MENENGAI11	132	18.3387	31.5	58.22
THIKA 220	220	18.2684	31.5	57.99
SOILO11	132	17.6097	31.5	55.9
MENE_NEW	132	17.5378	31.5	55.68
KAMBURU11	132	16.8844	31.5	53.6
KAMBTRF11	132	16.8844	31.5	53.6
NIP 220	220	16.7914	31.5	53.31
RONGAI 132	132	16.7715	31.5	53.24
DANDORA21	220	16.5418	31.5	52.51
ATHI RIVER	220	16.4024	31.5	52.07
GIL-THIKA	400	20.3898	40	50.97
LONGONOT	400	20.3898	40	50.97
SUSWA	400	20.0799	40	50.2
SUSWA	400	20.0799	40	50.2
LESSOS	220	15.7488	31.5	50
LESSOS TEE	220	15.7488	31.5	50
LESSOS TEE	220	15.7488	31.5	50
RONGAI220	220	15.4697	31.5	49.11
RONGAI 400	400	19.5384	40	48.85

YEAR 2044 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (KA)	Breaker Capacity (KA)	% of Breaker Capacity
WELLHED37-	132	15.252	31.5	48.42
LESSOS11	132	15.2516	31.5	48.42
LESSTRF11	132	15.2516	31.5	48.42
RUARAKA21	220	15.1492	31.5	48.09
OLKARIA1 1	132	19.2022	40	48.01
THIKA 400	400	19.1888	40	47.97
OLKARIAIAU	132	19.1039	40	47.76
MALAA 400	400	18.9775	40	47.44
KIPETO 220	220	14.9178	31.5	47.36
GIL-THIKA	400	18.7282	40	46.82
ISINYA41	400	18.642	40	46.61
BSS_EMBA	220	14.6648	31.5	46.55
EMBAKASI21	220	14.6648	31.5	46.55
RABAI11	132	14.3848	31.5	45.67
RABAITRF11	132	14.3848	31.5	45.67
RABTRF12	132	14.3848	31.5	45.67
RABAITR 13	132	14.3848	31.5	45.67
THIKA NEW	132	14.3575	31.5	45.58
MAKINDU	132	14.3333	31.5	45.5
KIMUKA	400	18.0533	40	45.13
CABLE-OHL2	220	14.2008	31.5	45.08
CABLE-OHL	220	14.2008	31.5	45.08
KAMBURU21	220	14.1016	31.5	44.77
NEW KILIFI	132	14.0566	31.5	44.62
OLK III	220	17.7372	40	44.34
NAIVASHA11	132	13.8451	31.5	43.95
OLKARIA II	132	17.5534	40	43.88
KONZA4	400	17.5379	40	43.84
BARINGO	400	17.3224	40	43.31
MARALAL11	132	13.6342	31.5	43.28

YEAR 2044 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (KA)	Breaker Capacity (KA)	% of Breaker Capacity
GITARU11	132	13.6211	31.5	43.24
MENENGAI40	400	17.188	40	42.97
KIMUKA 220	220	13.5127	31.5	42.9
CBD	220	13.4376	31.5	42.66
THIKA11	132	13.1929	31.5	41.88
MAHI MAHIU	132	13.1392	31.5	41.71
OLK VII	220	16.1832	40	40.46
NRB NORTH	220	12.6691	31.5	40.22
LESSOS 400	400	16.0554	40	40.14
MARAL/LOOS	400	16.0142	40	40.04
KIAMBERE21	220	12.4782	31.5	39.61
EMBU	220	12.4691	31.5	39.58
LANET11	132	12.4649	31.5	39.57
RABAI21	220	12.4449	31.5	39.51
AGIL 220	220	12.3823	31.5	39.31
NEW_VOI	132	12.3168	31.5	39.1
7FORKS_SLR	132	12.2328	31.5	38.83
MARIAKANI4	400	15.2335	40	38.08
KONZANEW	132	11.6312	31.5	36.92
KILGORS132	132	11.5172	31.5	36.56
TEE OFF	132	11.2968	31.5	35.86
KIPEVU11	132	11.2065	31.5	35.58
MUSAGA11	132	11.094	31.5	35.22
MUSAGATEE	132	11.094	31.5	35.22
KOKOTONI11	132	10.8101	31.5	34.32
RONGAI_NC	132	10.7662	31.5	34.18
DONGO KUND	400	13.5709	40	33.93
KILIFI NPP	400	13.425	40	33.56
MBARAKI	132	10.5688	31.5	33.55
JOMVU	132	10.5334	31.5	33.44

YEAR 2044 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (KA)	Breaker Capacity (KA)	% of Breaker Capacity
FERTILIZER	220	10.3121	31.5	32.74
HG FALL 40	400	13.0509	40	32.63
GITARU21	220	10.1002	31.5	32.06
LOYAN	220	9.7598	31.5	30.98
MAKINDU400	400	12.3248	40	30.81
EMBU13	132	9.6878	31.5	30.75
T_2_KARURA	220	9.6266	31.5	30.56
KUTUS11	132	9.583	31.5	30.42
KILIFI11	132	9.5698	31.5	30.38
OLK IX	220	12.042	40	30.11
ISIOLO11	132	9.3922	31.5	29.82
KIBOS 132	132	9.3681	31.5	29.74
ISIOLO NEW	132	9.2785	31.5	29.46
KARURA	220	9.2692	31.5	29.43
TOTAL SLR	132	9.2076	31.5	29.23
KITALE11	132	9.1235	31.5	28.96
WEBUYE11	132	9.1109	31.5	28.92
VOI 400	400	11.4656	40	28.66
OLKALOU132	132	11.3961	40	28.49
RUMURUTI11	132	8.9449	31.5	28.4
KENERGY	132	8.9384	31.5	28.38
CHEMOSIT11	132	8.8931	31.5	28.23
KISUMU 132	132	8.8911	31.5	28.23
SOTIK	132	8.8699	31.5	28.16
KINDARUMA1	132	8.4535	31.5	26.84
TI_KARURA	220	8.3745	31.5	26.59
KIBOS 220	220	8.3034	31.5	26.36
MASINGA11	132	8.1723	31.5	25.94
TEE	220	8.1118	31.5	25.75
SLR PARK	220	7.9011	31.5	25.08

YEAR 2044 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (KA)	Breaker Capacity (KA)	% of Breaker Capacity
ORTUM21	220	7.6843	31.5	24.39
NAMANGA	400	9.7203	40	24.3
MUHORONI11	132	7.5987	31.5	24.12
BAMBURI11	132	7.4644	31.5	23.7
BAMB TEE	132	7.4033	31.5	23.5
MSACEMTEE3	132	7.1887	31.5	22.82
MAKINDUSLR	132	7.1654	31.5	22.75
KIBOKO11	132	7.1654	31.5	22.75
MYANGA	132	7.0391	31.5	22.35
MYANGA T 1	132	7.0391	31.5	22.35
MYANGA T 2	132	7.0391	31.5	22.35
KIBUYUNI2	220	7.0207	31.5	22.29
KERINGET20	220	7.0103	31.5	22.25
NRB N PST1	220	6.9919	31.5	22.2
NRB N PST2	220	6.9653	31.5	22.11
KOPERE	132	6.9653	31.5	22.11
MARIAKANI1	132	6.9283	31.5	21.99
MSACEM31	132	6.6404	31.5	21.08
KAKMEGA220	220	6.5377	31.5	20.75
LOYAN 400	400	8.2713	40	20.68
VOI11	132	6.4536	31.5	20.49
KIBUYUNI	132	6.3795	31.5	20.25
ISHIARA11	132	6.3605	31.5	20.19
MTWAPA	132	6.2947	31.5	19.98
MTWAPA TEE	132	6.2947	31.5	19.98
MTWPA TEE2	132	6.2947	31.5	19.98
MSCEMTEE31	132	6.2394	31.5	19.81
ELDORET11	132	6.1448	31.5	19.51
MERU11	132	6.1416	31.5	19.5
CHEMOSIT 2	220	6.0701	31.5	19.27

YEAR 2044 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (KA)	Breaker Capacity (KA)	% of Breaker Capacity
KIPEVUDIII1	132	6.0608	31.5	19.24
TOP STEEL	132	6.0596	31.5	19.24
MAUA11	132	6.0523	31.5	19.21
TEE 2	132	6.0513	31.5	19.21
ISIOLO 220	220	6.0364	31.5	19.16
MUSAGA220	220	6.0293	31.5	19.14
KUTUSTEE1	132	5.9921	31.5	19.02
VIPINGO31	132	5.9242	31.5	18.81
MARSABIT	220	5.88	31.5	18.67
WERU	220	5.7062	31.5	18.11
MLDI SOLAR	220	5.7062	31.5	18.11
BUSIA	132	5.6814	31.5	18.04
MAKUTANO11	132	5.6698	31.5	18
TORO11	132	5.615	31.5	17.83
KIGANJO11	132	5.5893	31.5	17.74
TARITA	132	5.5678	31.5	17.68
NANYUKI11	132	5.5431	31.5	17.6
KILIFI	220	5.5257	31.5	17.54
KAINUK21	220	5.4188	31.5	17.2
TURKWEL21	220	5.4087	31.5	17.17
MUTOMO	132	5.3776	31.5	17.07
KITALE	220	5.3744	31.5	17.06
MAUA 220	220	5.2938	31.5	16.81
KWALE SC	132	5.2924	31.5	16.8
SULTAN HA1	132	5.2222	31.5	16.58
NEW SULTAN	132	5.1934	31.5	16.49
KILGORIS	400	6.475	40	16.19
MUMIAS11	132	5.0849	31.5	16.14
MAGADI	220	5.0469	31.5	16.02
KISIII1	132	5.0437	31.5	16.01

YEAR 2044 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (KA)	Breaker Capacity (KA)	% of Breaker Capacity
MALINDI21	220	5.0152	31.5	15.92
TARUSHA41	400	6.2949	40	15.74
BOMET11	132	4.9188	31.5	15.62
GALU11	132	4.8641	31.5	15.44
MWALA	132	4.8411	31.5	15.37
MWINGI11	132	4.8383	31.5	15.36
DEVK SMBUR	132	4.7891	31.5	15.2
SONDU11	132	4.7824	31.5	15.18
GITHAMBO11	132	4.7255	31.5	15
ISINYA	132	4.6314	31.5	14.7
TITANIUM11	132	4.6294	31.5	14.7
KYENI11	132	4.5799	31.5	14.54
AWENDO11	132	4.557	31.5	14.47
TORORO21	220	4.5134	31.5	14.33
MAUNGU11	132	4.2914	31.5	13.62
SANGORO11	132	4.2913	31.5	13.62
KABARNET11	132	4.2869	31.5	13.61
RANGALA11	132	4.2772	31.5	13.58
SAMBURU11	132	4.2725	31.5	13.56
NAROK11	132	4.2372	31.5	13.45
KONZA	132	4.195	31.5	13.32
OTHAYA	132	4.1894	31.5	13.3
ULU11	132	4.1829	31.5	13.28
NEWMAUNGU	132	4.0499	31.5	12.86
MASABA	132	3.9837	31.5	12.65
KABARNET11	132	3.914	31.5	12.43
MANYANI11	132	3.8348	31.5	12.17
MUTOMO	220	3.7342	31.5	11.85
T1 MUTOMO	220	3.7342	31.5	11.85
_MUTOMO	220	3.7342	31.5	11.85

YEAR 2044 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (KA)	Breaker Capacity (KA)	% of Breaker Capacity
GATUNDU11	132	3.702	31.5	11.75
ONGENG	132	3.6837	31.5	11.69
KITUI11	132	3.6568	31.5	11.61
WOTE	132	3.6455	31.5	11.57
MTITO AND1	132	3.5603	31.5	11.3
CHOGORIA	132	3.5597	31.5	11.3
SUNPOWER	132	3.5542	31.5	11.28
MANYANI11	132	3.4909	31.5	11.08
MACHAKOS11	132	3.2999	31.5	10.48
GARBATULA	220	3.1332	31.5	9.95
TEST BUS	220	3.1072	31.5	9.86
MACHAKOS11	132	3.0038	31.5	9.54
LOKICHAR	220	2.9073	31.5	9.23
GARISSA11	132	2.7044	31.5	8.59
GARISSA	220	2.6874	31.5	8.53
GARSEN21	220	2.6139	31.5	8.3
GARISA PV1	132	2.4463	31.5	7.77
BONDO	132	2.312	31.5	7.34
MTWAPA	220	2.2852	31.5	7.25
LODWAR	220	2.2131	31.5	7.03
GARISA PV1	132	2.2117	31.5	7.02
HOLA	220	2.209	31.5	7.01
BURA	220	2.1379	31.5	6.79
MERUWESHI	132	1.9001	31.5	6.03
MAGUNGA	132	1.8184	31.5	5.77
KENSEN	220	1.8149	31.5	5.76
NAMANGA	132	1.5758	31.5	5
LAMU21	220	1.3997	31.5	4.44
MOYALE	220	1.3977	31.5	4.44
LOITOKTOK	132	1.1742	31.5	3.73

YEAR 2044 THREE PHASE SHORT CIRCUIT CURRENT				
Bus Name	Voltage Level (kV)	Maximum Fault Current (KA)	Breaker Capacity (KA)	% of Breaker Capacity
HABASWEIN	220	0.9337	31.5	2.96
WAJIR	220	0.7038	31.5	2.23
MANDERA	220	0.4524	31.5	1.44

ANNEX 8: CLIMATE RISK MATRIX

Table 8-1: Climate Risk Matrix

No.	Risk Description	Cause	Impact	Risk Rating	Proposed Mitigation / Action Plan
1	Substation damage due to flooding	Heavy rainfall, river overflow	Equipment failure, power outages, prolonged downtime	High	- Site substations on higher ground or use raised platforms - Install flood barriers and drainage systems - Climate risk screening in design stage
2	Tower collapse due to high winds	Storms, cyclones	Structural failure, transmission line outage	High	- Use wind resistant tower designs - Strengthen foundations - GIS wind hazard mapping during planning
3	Wildfire damage to transmission lines	Drought, high temperatures, bushfires	Weakening of components, collapse of towers, service interruption	Medium	- Use fire resistant structures - Maintain firebreaks around ROWs - Monitor fire risks seasonally as per the fire calendar - Ensure regular vegetation management
4	Heat stress on equipment	Extreme heat	Reduced equipment efficiency, increased maintenance costs, reduced ampacity	Medium	- Use heat rated equipment - Improve ventilation and cooling in substations - Use conductors resistant to extreme heat
5	Soil erosion around towers	Intense rainfall, poor land cover	Tower instability, risk of collapse	High	- Reinforce tower bases - Use vegetation or geotextile erosion control - Implement catchment restoration near ROWs
6	Accessibility challenges during disasters	Flooding or landslides on access roads	Delay in maintenance or emergency response	Medium	- Climate proof critical access roads - Maintain emergency response kits for rapid fault detection - Collaborate with agencies with rapid response such as Kenya Police and DoD
7	Lightning damage to lines and substations	Increased storm frequency	Equipment burnout, blackouts	Medium	- Install advanced surge arrestors and grounding systems - Upgrade lightning protection systems

No.	Risk Description	Cause	Impact	Risk Rating	Proposed Mitigation / Action Plan
8	Reduced system reliability due to climate uncertainty	Unpredictable weather patterns	Difficulty planning load and maintenance schedules	Medium	- Integrate climate risk assessment early project panning - Invest in digital monitoring and adaptive protection systems to enhance early warning

SOURCE: KETRACO

ANNEX 9: CLIMATE FINANCE AND CARBON MARKET POTENTIAL FOR KEY TRANSMISSION PROJECTS

Table 9-1: Climate Finance and Carbon Market Potential For Key Transmission Projects

Project	Climate Rationale	Carbon Project Potential	Climate Finance Type
400kV Loiyangalani/Suswa LILO – Loosuk	Evacuation of Geothermal and wind energy to western Kenya; Reinforcement of the grid	High – Wind integration	Mitigation+ Adaptation
Rabai and Suswa Substations STATCOMs	Enables stable integration of large-scale wind and geothermal power by providing dynamic voltage control at a key national grid hub. Enhances voltage stability and reactive power support in the coastal network, improving power quality for critical industrial and port infrastructure.	High – Enhanced system Efficiency and RE Integration	Mitigation + adaptation
132kV Menengai – Olkalou – Rumuruti	Geothermal evacuation from Menengai	High – Renewable energy	Mitigation
145km 220kV Kiambere – Maua – Isiolo 220kV	Evacuation of hydropower from Kiambere and enhancing system stability	High – Renewable + resilience	Mitigation + adaptation
220kV Garissa – Habaswein – Dadaab	Enhanced access in Northern Kenya; enables thermal phase-out	High – Clean access	Mitigation + adaptation
132kV Wajir – Mandera / Link to Ethiopia	Enhances clean power access; reduces diesel reliance	High – Clean access	Mitigation + adaptation
Olkaria IX – Longonot 220kV	Geothermal evacuation	High – Renewable integration	Mitigation+ Adaptation

Project	Climate Rationale	Carbon Project Potential	Climate Finance Type
Agil 220kV Evacuation	Evacuation of new geothermal resource	High – Renewable integration	Mitigation
Agil – Olkaria IX 220kV	Strengthens geothermal transmission corridor	High – Renewable integration	Mitigation
Rongai – Kilgoris 400kV	Lake Victoria Ring; regional system efficiency and interconnectivity	High – Efficiency and resilience	Mitigation + adaptation
NPP TI 1 and 2	Evacuation of nuclear power; system baseload enhancement	High – Clean integration	Mitigation + adaptation
220kV Kisumu (Kibos) – Kakamega (Musaga)	Transmission efficiency in Western Kenya; reduces losses; reinforcement of grid	Moderate	Mitigation+ adaptatoin
220kV Rongai – Keringet – Chemosit	Transmission efficiency; supports low-emission development	Moderate	Mitigation
Conductor Stringing on KPTSIP Lines	Enhances redundancy; reduces losses	Moderate – Efficiency	Mitigation
220kV Marsabit – Moyale	Improved access and thermal reliance reduction	Moderate	Mitigation+ Adaptation
Longonot Substation + Gilgil LILO	Improves power flow and stability	Moderate – Efficiency	Mitigation+ Adaptation
Rangala – Bondo 132kV	Strengthens regional grid reliability	Moderate – Efficiency	Mitigation+ adaptation
Mariakani – DongoKundu 400kV	Enhances coastal grid reliability and resilience	Moderate – Efficiency	Mitigation+ Adaptation
Kwale Sugar – Titanium Reconductoring	Increases power flow to industrial loads	Moderate – Efficiency	Mitigation+ Adaptation

Project	Climate Rationale	Carbon Project Potential	Climate Finance Type
Webuye – Musaga Reconductoring	Enhances capacity in Western region grid	Moderate – Efficiency	Mitigation+ adaptation
Rangala – Busia 132kV	Improves border connectivity and supports regional trade	Moderate – Efficiency	Mitigation+ adaptation
220kV Isiolo – Garbatula – Garissa	Enhances reliability and resilience of northern region	Moderate – Resilience	Adaptation + mitigation
132kV Meru – Maua (35km)	Power quality improvement in underserved Eastern region	Moderate – Efficiency	Mitigation
New Thika – Ruaraka 220kV UG Cable	System reliability improvement in Nairobi	Moderate – Efficiency	Mitigation
Ngong (Kimuka) – Magadi 220kV	Reinforces grid in climate-sensitive region	Moderate – Resilience	Adaptation + mitigation

SOURCE: KETRACO

ANNEX 10: RISK AND MITIGATION MATRIX

Table 10-1: Risk and Mitigation Matrix

NO.	Risk Description	Cause	Impact	Risk Rating	Proposed Mitigation/Action Plan	Risk Owner
1	Governance Risks Risk of potential threats or challenges that arises from deficiencies or weaknesses in governance structures, processes, or practices.	Changes in the company governance structure Political instability, economic downturns and shifting government priorities which affect the implementation of the plan. Geopolitical tensions.	- Delays in projects implementation and cost over runs - Compromised project quality. - Reputational damage - Supply chain disruptions. - Security threats to the transmission infrastructure	High	- Continuous stakeholder engagement. - Strengthening oversight controls to closely monitor implementation of the plan. - Close monitoring of geopolitical developments. Continuous engagement with CIPU to enhance power infrastructure security.	CS, GM-LEGAL SERVICES
2.	Operational Risks Risk of failures or disruptions in information technology systems or transmission infrastructure. Risk of deficiencies in internal processes and procedures	Supply chain Disruptions resulting to delays or shortages affecting project timelines. Grid instability due to inadequate transmission capacity of some of the transmission lines.	- Project implementation delays and cost overruns. - Reduced grid reliability and stability as a result of delay in transmission and	High	Leverage on technical expertise by collaborations to explore emerging technologies, best practices and innovative solutions for optimizing the transmission infrastructure. Maintain buffer stocks for critical materials.	ALL HODs

NO.	Risk Description	Cause	Impact	Risk Rating	Proposed Mitigation/Action Plan	Risk Owner
		Theft and Vandalism of Transmission infrastructure. Equipment failure due to unexpected malfunctions resulting to network disruptions. Extreme weather events such as flash floods, river floods and strong winds hindering maintenance activities. Relate the risk of internal processes and procedures with a cause.	transformation implementation. • Possible loss of transmission network • Loss of revenue and unplanned costs of spares. • Reputation damage •		Conduct a risk assessment and implement disaster management framework. Enhance security system and operations •	
3.	Project Risks Inability to complete projects within the required scope, time and quality.	Delays in acquisition of right of way Expansion and Design changes from the original plan within the life of the projects. Communication challenges between new and existing equipment due to differences/changes in technology. Lengthy procurement processes and contracts non-performance. Inadequate risk assessments exposing the projects to unforeseen risks and uncertainties.	• Increased project costs and delays in project completion. • Unrealised Wheeling Revenue. • Lack of access to project sites. • Legal suits and costs • Reputational damage •	High	• Monitor procurement performance, delivery timelines and contractual obligations to mitigate procurement risks. • Ensure the standards and specifications for the new or upgrade equipment are compatible with the existing equipment. • Develop and implement a project management framework. • Evaluate project resource availability, skills and expertise requirements and develop contingency plans for resource shortages. • Effective communication, collaboration and	GM-D&C

NO.	Risk Description	Cause	Impact	Risk Rating	Proposed Mitigation/Action Plan	Risk Owner
		Stakeholder resistance or conflicts affecting project alignment and execution due to diverging interest, expectations and insufficient stakeholder involvement. Under-performance of contractors.			engagement between all the project stakeholders throughout the project lifecycle.	
4.	Financial Risks Financial Resilience - It encompasses all risks financial in nature including but not limited to Liquidity and cashflow risks. Risk arising out of financial operations.	Overreliance on exchequer funding Overreliance on uncertain donor financing Inadequate funding for projects. Exchange rate fluctuations Budget Constraints Delayed disbursement of funds from National Treasury. Misalignment between budgetary allocation and disbursement	- Incomplete projects/Delays in project implementation. - Unexpected increases in project costs affecting financial viability. - Reputational damage.	High	- Continuous engagement with the NT for early disbursements of funds. - Consider hedging strategies to cushion the company on adverse FX fluctuations. - Explore revenue diversification sources to reduce over reliance on exchequer. - Implement a monitoring and evaluation system that helps in providing realtime reports on actual disbursements and budgeted allocations.	GM-FINANCE
5.	Technology Risks These are technologically oriented risk and refers to all issues of information and Communication technology	Obsolescence of equipment due to new emerging technologies, exposing the network to potential attacks (Technical Vulnerabilities) Cyber security threats compromising systems	- Service disruptions due to unauthorized access and data breaches. - Increased maintenance costs and costly upgrades.	High	- Conduct regular technology audits and vulnerability tests to identify outdated systems and potential vulnerabilities. - Update Business Continuity plans, ICT Disaster Recovery plans and testing.	GM-SRC

NO.	Risk Description	Cause	Impact	Risk Rating	Proposed Mitigation/Action Plan	Risk Owner
		integrity and data security. Lack of a fully featured test environment and documentation of the recovery and continuity processes. Lack of systems replication or offsite backup to offer failover Lack of integration between systems.	• Incompatibility between different systems resulting to inefficiencies. •		• Implement robust cyber security measures to safeguard the systems against cyber threats and data breaches. • Develop comprehensive backup and recovery strategies to minimize data loss in case of system failures. • Training and capacity building for all staff to ensure efficient system operations. • Collaboration with technical experts for guidance on emerging trends and best practices.	
6.	Legal and Compliance Risks • Noncompliance to existing laws/regulations and other statutory requirements • Inadequacies in contract management/Breach of Contract by third parties • Inability to effectively acquire land and right of way for projects.	Complexities in Land acquisition and right of way for transmission infrastructure Inadequate contract management processes. Contractual ambiguity and non-performance by contractors. Knowledge gaps in application of financial standards and regulations (IFRS, PFM Act, IPSAS, NT Circulars, etc)	• Legal Disputes and increased litigation costs. • Delays in Project implementation. • Cost overruns • Reputational damage • Increases in contingent liabilities	High	• Monitor performance metrics, milestones and remedies for non-performance to ensure accountability and project continuity. • Training project staff on contracts management. • Monitoring of contract implementation during the project lifecycle. • Regular assessment on project staff knowledge of financial standards through regular simulations and assessments.	CS, GM-LEGAL SERVICES GM-SRC

NO.	Risk Description	Cause	Impact	Risk Rating	Proposed Mitigation/Action Plan	Risk Owner
7.	Health and Safety Risks Potential hazards to staff/contractors and the public by accidents or incidents involving high voltage transmission installations.	Non-Compliance to safety standards and contract provisions. Inadequate enforcement of Contractual obligations. Inadequate safety equipment. Excessive Workload	- Public opposition to transmission projects due to safety concerns may derail or delay the project implementation. - Injuries, illnesses and fatalities among employees and contractors. - Increased insurance costs for the company and potential legal liabilities.	High	- Routine project site audits and routine risk assessments to identify potential hazards and implement corrective actions proactively. - Regularly review and update the safety policies and procedures to ensure compliance with industry standards and regulations. - Implement emergency response plans and train staff and contractors to ensure a prompt response in case of emergencies. - Activate the incident management plan. - Community engagement and outreach with local communities to raise awareness on health and safety risks associated with the transmission infrastructure.	GM-SOPM
8.	New and Emerging Risks (Reword the risk description) A risk that is evolving in areas and ways where the body of available knowledge is weak.	- Climate Change impacts leading to extreme weather events and grid vulnerabilities. - Disruptive Technologies: Rapid advancements	Damage of transmission lines, towers and substations resulting to power outages and disruptions.	High Risk	- Climate Resilience planning by conducting vulnerability assessments and developing adaptation strategies. - Developing emergency response plans and contingency measures to mitigate the impact of climate related disasters on	All HoDs

NO.	Risk Description	Cause	Impact	Risk Rating	Proposed Mitigation/Action Plan	Risk Owner
		in AI, blockchain, and other technologies. • Geopolitical Instability: Political unrest and changes in international relations • Supply chain disruptions			the transmission infrastructure. • Collaborating with sector stakeholders and local communities to raise awareness and implement climate resilient practices. • Horizon scanning- Regularly monitor global trends and developments to identify potential risks early. •	

ANNEX 11: LOG FRAME FOR MONITORING EVALUATION ACCOUNTABILITY AND LEARNING (MEAL)

Table 11-1: Log Frame for MEAL

PDO Level Results Indicators	Data Source/ Methodology	Means of Verification	Risks/ Assumptions
Impact indicator one % rate of improved access rate	KETRACO & KPLC	KPLC annual reports, National Electrification Database	Assumes increased grid capacity translates to wider household and industrial access
Impact Indicator two Number of upcoming county and national development plans indicating increased power demand	County & national development plans	Official county plans, MoEP updates, CIDPs	Assumes timely review of plans; power access recognized as a planning priority
Impact indicator three Number of new middle and large power consumers	KPLC consumer registry, County Trade departments	KPLC customer database, signed service agreements, county investment records	Assuming economic conditions support industrial expansion
Impact indicator four % increase in the capacity expansion among middle and large power consumers	KPLC consumption data, industry self-reports	KPLC metering data, plant capacity declarations	Assumes reliable reporting and stable demand growth.
Outcome indicator one Reduction in frequency of power outages	Reports from KPLC Control Centre, consumer feedback	SCADA logs, outage analytics reports, feedback logs from consumers	Assumes full operationalization of new lines and accurate data logging
Outcome inductor two Reduction in duration of power outages	Reports from KPLC Control Centre, consumer feedback	System downtime logs, Consumer complaints data	Assumes improved maintenance and fault response
Outcome indicator three Reduction in diesel fuel use	Energy cost and fuel use reports from consumers	Purchase receipts, plant logs, cost tracking forms	Assumes truthful reporting and willingness of industries to share data

Outcome indicator four Increased electricity consumption	Reports from National Control Centre (KPLC) & large power consumers KPLC load profiles, billing data	Smart meter readings, National Energy audit reports	Assuming demand increase is attributable to grid improvements
Output indicator five length (km) of transmission lines constructed	Reports from KETRACO, REA & KPLC	Completion certificates, inspection reports	Assuming timely construction and reporting
% share of lines completed annually	Annual implementation reports	Progress tracking sheets, MTP reports	Assumes annual planning and construction are synchronized
Output indicator one Number of new substations constructed and transformation capacity (MVA)	Reports from KETRACO & KPLC	Commissioning reports, GIS data	Assuming availability of funding and equipment
Output indicator two MW capacity of green energy added	Reports from KETRACO, KenGen & GDC	Interconnection agreements, dispatch records	Assumes timely generation project completion
Input indicator three Finances disbursed for constructions	KETRACO finance systems	Financial disbursement reports, audit records	Assuming transparent financial management

ANNEX 12: SUMMARY TRANSMISSION LINES PROJECT AS AT JUNE 2025

Table 12-1: Summary of Planned Transmission Projects

YEA R	TRANSMISSION LINE		VOLTA GE (KV)	LINE LENG TH (KM)	DESCRIPTION/REM ARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
YEAR 2025						
2025	MARIAKANI	ISINYA	400	-	Part of Mombasa-Nairobi; Energization/Operation at 400kV. Construction of 400/220kV substation at Mariakani 4x200MVA 400/220kV transformers. Relocation of 2x100MVAr reactors each to Isinya (from Embakasi) and to Mariakani (from Rabai)	Increase transmission capacity between Mombasa and Nairobi to boost power supply in the interconnected system through supply of thermal power generated at the coast
2025	KITUI	WOTE	132	66	66km 132kV Kitui-Wote TL. 1x23 MVA 132/33kV substations at Kitui and Wote	Extend transmission and reinforce distribution network - improve national access to electricity, upgrade voltage to improve supply quality, reduce system losses and increase system reliability.

YE R	TRANSMISSION LINE		VOLTA GE (KV)	LINE LENG TH (KM)	DESCRIPTION/REMA RKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
2025	NANYUKI	RUMURUTI	132	79	79km 132kV Nanyuki-Rumuruti TL, 132/33kV 1x23MVA SS at Rumuruti and 132kV bay extension at Nanyuki.	Extend transmission and reinforce distribution network - improve national access to electricity, upgrade voltage to improve supply quality, reduce system losses and increase system reliability.
2025	NANYUKI	ISIOLO	132	70	70km 132kV Nanyuki-Isiolo TL, 132/33kV SS at Rumuruti and 132kV bay extension at Nanyuki. Part of the scope is 5 km UG cable.	Extend transmission and reinforce transmission network - system reliability and security.
2025	ISINYA	KONZA	400	45	Isinya-Konza 45km of 400KV D/circuit transmission line and bay extension at Konza and Isinya substations including step down to 66kV and 132kV intertie between Konza 400/132kV and Konza 132/33kV.	Part of 400kV ring - Improve reliability and ensure security of supply in the 400kV backbone.
2025	RABAI	NEW BAMBURI	132	17	17km, 132kV double circuit line with 132kV bay extension at Rabai, New Bamburi.	Improve reliability and security of supply. Increase access, and connectivity

YEA R	TRANSMISSION LINE		VOLTA GE (KV)	LINE LENG TH (KM)	DESCRIPTION/REM ARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
					Converting the sections of the existing TL currently on wooden poles to steel lattice tower.	through reinforcement of transmission grid.
2025	NEW BAMBURI	BOMANI	132	11	10km, 132kV double circuit line (Converting the sections of the existing TL currently on wooden poles to steel lattice tower) With new 132/33kV 2x23MVA substation at Bamburi Cement.	Improve reliability and security of supply. Increase access, and connectivity through reinforcement of transmission grid.
2025	BOMANI	KILIFI	132	29	29km, 132kV double circuit line (Converting the sections of the existing TL currently on wooden poles to steel lattice tower) with 132kV bay extension at Kilifi	Improve reliability and security of supply. Increase access, and connectivity through reinforcement of transmission grid
2025	NANYUKI-RUMURUTI UG CABLE		132	14.5	14.5km of UG Cable along the Nanyuki-Rumuruti transmission line.	Extend transmission and reinforce distribution network - improve national access to electricity, upgrade voltage to improve supply quality, reduce system losses and increase system reliability.

YEA R	TRANSMISSION LINE		VOLTA GE (KV)	LINE LENG TH (KM)	DESCRIPTION/REM ARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
2025	NANYUKI-ISIOLO UG CABLE		132	5	5km of UG Cable along the Nanyuki-Isiolo transmission line.	Extend transmission and reinforce distribution network - improve national access to electricity, upgrade voltage to improve supply quality, reduce system losses and increase system reliability.
YEAR 2026						
2026	KAMBURU	EMBU	220	150	150km 220kV d/c Kamburu-Embu transmission line with bay extension at Kamburu and Embu 220/132 2x90MVA substation.	Improve reliability in system and provide alternative source to supply Mt Kenya Region.
2026	LESSOS	KABARNET	132	65	65km 132kV Lessos-Kabarnet TL, 132/33kV 1x23 MVA SS at Kabarnet and 132kV bay extension at Lessos.	Extend transmission and reinforce distribution network - improve national access to electricity, upgrade voltage to improve supply quality, reduce system losses and increase system reliability.
2026	UPLANDS	JUJA RD/NAIVASHA TEE	132	1.5	1.5km 132kV line and Establishment	Increase energy access and

YEA R	TRANSMISSION LINE		VOLTA GE (KV)	LINE LENG TH (KM)	DESCRIPTION/REM ARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
					(Introduction) of 2x60 MVA 132/66kV substation at Uplands	connectivity through reinforcement of transmission and distribution grid
2026	ONGENG (HOMABAY/NDHIWA)	SONDU	132	69	Approx. 69km of 132kV s/c line, 132kV bay extension at Sondu and new 132/33kV SS at Thurdibuoro (Sondu Annex)	Increase Reliability of the system and improve security of supply.
2026	MAKINDU	MAKINDU LILO	400	1	LILO and establish Makindu substation 400/132kV 2x90MVA	Increase energy access and connectivity through reinforcement of transmission and distribution grid
2026	BARINGO	LESSOS/LOSUK LILO	400	1	400/220kV SS at Baringo and LILO to Loosuk/Lessos line. Baringo 400/220kV 2x400MVA	Increase energy access and connectivity through reinforcement of transmission and distribution grid
2026	KABARNET	RUMURUTI	132	111	111km 132kV D/circuit line and 132kV Bay extension at Kabarnet and Rumuruti	Increase energy access and connectivity through reinforcement of transmission and distribution grid
2026	RONGAI SUBSTATION	-	132	1.5	Rongai 132/33 2x45MVA	Increase energy access and

YEA R	TRANSMISSION LINE		VOLTA GE (KV)	LINE LENG TH (KM)	DESCRIPTION/REM ARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
						connectivity through reinforcement of transmission and distribution grid
2026	KIPEVU	MBARAKI	132	6.5	Construction of 6.5km 132kV s/c Line and 2x45MVA 132/33kV Sub-station at Mbaraki.	Increase energy access and connectivity through reinforcement of transmission and distribution grid
2026	WERU	KILIFI	220	48.5	48.5km of 220kV d/c line with new 2x150MVA 220/132kV substation at Kilifi and 220kV bay extension at Weru.	Alternative supply to Kilifi substations and other substations downstream and improve system reliability and power quality e.g., voltages in Kilifi, Mtwapa and Bamburi.
2026	MALINDI	WERU	220	22	22km of 220kV s/c line with 220kV bay extension at Malindi. (Second two)	Improve system adequacy and increase transfer capacity from proposed RE based generation.
2026	TX UPGRADE OLKARIA I				Olkaria I 1x45/60MVA (Unit 1 and 2) and Olkaria I 1x45/60MVA (Unit 3)	Improve system adequacy and increase transfer capacity from

YEA R	TRANSMISSION LINE		VOLTA GE (KV)	LINE LENG TH (KM)	DESCRIPTION/REM ARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
						geothermal generation.
2026	OLKARIA II EXT	OLKARIA VII - FERTILIZER PLANT	220	45	45km 220kV transmission line and a new fertilizer plant	Supply Fertilizer Plant Substation
2026	OLKARIA II	OLKARIA II EXTENSION	220	2	Relocation of Olkaria III to Olkaria II extension	Improve system adequacy and increase transfer capacity from geothermal generation.
2026	OLKARIA 1 AU	OLKARIA IV /V	220	8	8km 220kV transmission line from Olkaria 1 AU to Olkaria IV /V	Improve system adequacy and increase transfer capacity from geothermal generation.
2026	NAROK	BOMET	132	88	Approx. 88km of 132kV double circuit line and 132kV bay extensions at Narok and Bomet Substations.	Extend transmission and improve national access to least cost electricity supply, to improve supply quality, reduce system losses and providing alternative supply paths to West Kenya.
2026	INSTALLATION OF PHASE SHIFTING TRANSFORMERS (PST) AT SUSWA		--	-		Increasing power flows through Suswa-Isinya 400kV and deload

YEAR	TRANSMISSION LINE		VOLTAGE (KV)	LINE LENGTH (KM)	DESCRIPTION/REMARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
						220kV Suswa-NN line.
YEAR 2027						
2027	MARIAKANI	DONGO KUNDU	220	55	Construction of 55km 220kV transmission line and 220kV bay extension at Mariakani 400/220kV substation including new 2x75MVA 220/33kV substation at Dongo Kundu.	Supply Dongo Kundu Special Economic Zone at Dongo Kundu
2027	GARSEN	HOLA	220	102	100km 220kV s/c Line, 1x23VA 220/33kV substation at Hola and 220kV bay extension at Garsen	Extend transmission grid - Increase access and connectivity through reinforcement of transmission and distribution grid. Additional evacuation path for Garissa solar PV (REA) and Lamu Coal PP
2027	HOLA	BURA	220	45	45km 220kv d/c Line, 1x23MVA 220/33kV substation at Bura	Increase access and connectivity through reinforcement of transmission and distribution grid

YEAR	TRANSMISSION LINE		VOLTAGE (KV)	LINE LENGTH (KM)	DESCRIPTION/REMARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
2027	BURA	GARISSA	220	100	100km 220kv d/c Line, New 220kV switchyard with 1x60MVA 220/132kV substation at Garissa.132kV bay extension at 132/33 132/11kV Garissa	Increase access and connectivity through reinforcement of transmission and distribution grid
2027	KWALE LILO (Mariakani/Dongo Kundu)	KIBUYUNI	220	77	220kV transmission line, new 220/132/33kV substation at Shimoni/Kibuyuni or 220kV LILO on both circuits of Mariakani - Dongo Kundu, 220kV Switch station at Kwale and 220kV double circuit transmission line from the Switch station to Kibuyuni, new 220/132/33kV substation at Kibuyuni.	Increase access and connectivity through reinforcement of transmission and distribution grid
2027	KIBOS	KAKAMEGA	220	50	50 km, 220kV d/c line with 2x150MVA 220/132 and 2x45MVA 132/33kV substation at Kakamega and bay extensions at 220kV Kisumu (Kibos)	Reliability and system reinforcement. Increase access and connectivity through reinforcement of transmission and distribution grid

YEA R	TRANSMISSION LINE		VOLTA GE (KV)	LINE LENG TH (KM)	DESCRIPTION/REM ARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
2027	KAKAMEGA	MUSAGA	220	23	23 km, 220kV d/c line (initially operated at 132kV) with 220kV bay extensions at Kakamega and 132kV bay extension at Musaga.	Reliability and system reinforcement. Increase access and connectivity through reinforcement of transmission and distribution grid
2027	KILGORIS	SOTIK	132	50	50km 132kV double circuit line from Sotik to Kilgoris.132kV bay extension at Sotik and new 2x23MVA 132/33kV substation at Kilgoris.	Extend the transmission grid for Increased access and connectivity through reinforcement of distribution grid.
2027	LESSOS	LOOSUK	400	179	179km 400kV double circuit line from Loosuk to Lessos, 400kV Bay extension at Lessos and new 400kV switch station at Loosuk (LILO on Loiyangalani-Suswa line).	Increase system reliability and provide alternative evacuation path for North Kenya generation.
2027	WEBUYE	KITALE	132	75	75km 132kV double circuit line, 132kV bay extension at Webuye and Kitale.	Improve system reliability and security
2027	KITALE	KIMILILI	132	50	50km 132kV single circuit line and 132kV bay extension at Kimilili and Kitale	Improve system reliability and security

YEAR	TRANSMISSION LINE		VOLTAGE (KV)	LINE LENGTH (KM)	DESCRIPTION/REMARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
2027	MUSAGA	WEBUYE	132	18	18km 132kV single circuit line _ rehabilitation and conversion from wooden to steel structures.	Improve system reliability and security
2027	RUARAKA	JUJA RD 132	132	6.5	6.5km 132kV double circuit line _ rehabilitation and conversion from wooden to steel structures.	Improve system reliability and security
YEAR 2028						
2028	MALAA	THIKA	400	57	Approximately 57km of 400kV double circuit transmission line 400kV bay extension at Nairobi East (Malaa) and Thika.	Part of the 400kV outer ring for Increased system reliability and adequacy (establishment of 400kV Backbone)
2028	THIKA 400	GILGIL	400	140	Approximately 140km of 400kV double circuit transmission line new 2x200MVA 400/220kV substation at Thika and 400kV bay extension at Gilgil.	Part of the 400kV outer ring for Increased system reliability and adequacy (establishment of 400kV Backbone)
2028	THIKA 400/220	THIKA 220/132	220	1	220kV intertie between Thika 400/220 and Thika 220/132kV at Mangu if at different locations	Voltage support and system strengthening

YEA R	TRANSMISSION LINE		VOLTA GE (KV)	LINE LENG TH (KM)	DESCRIPTION/REM ARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
2028	KONZA4	MALAA 400	400	40	Approximately 40km of 400kV double circuit line and 400/132kV 2x150MVA substation at Konza and 400kV bay extension at Malaa (Nairobi East).	Part of 400kV ring - Improve reliability and ensure security of supply in the 400kV backbone.
2028	MARSABIT	LOIYANGALANI	220	136	136km 220kV double circuit line with a new 220kV switchyard at Loiyangalani and 220/33kV Substation at Marsabit.	Alternative evacuation of proposed Marsabit, LTWP Wind PP. Increase access and connectivity through reinforcement of transmission and distribution grid.
2028	RONGAI 400/220 LILO		400	2	2km 400kV LILO and establishment of Rongai 400/220 2x200MVA	Increase energy access and connectivity through reinforcement of transmission and distribution grid
2028	RONGAI 220/132 LILO		220	2	2km 220kV LILO and establishment of Rongai 220/132 2x90MVA	Increase energy access and connectivity through reinforcement of transmission and distribution grid
2028	MERU	MAUA	132	35	35km 132kV s/c line, 1x23MVA 132/33kV substation in Maua and	Increase access and connectivity through

YEA R	TRANSMISSION LINE		VOLTA GE (KV)	LINE LENG TH (KM)	DESCRIPTION/REM ARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
					132kV bay extension at Meru substation	reinforcement of transmission and distribution grid
2028	BONDO	KIBOS	132	61	Approx. 61km 132kV d/c line with 4no 132kV bay extension at Rangala and Kibos.	Increase system reliability and security of supply
2028	KIENI	CHOGORIA	132	23	23km 132kV s/c Line, 1x23 MVA 132/33kV substation at Chogoria and 132kV bay extension at Kieni.	Extend the transmission grid to increase access and connectivity through reinforcement of transmission and distribution grid.
2028	RUMURUTI	MARALAL/LOOSUK	132	148	148km 132kV d/c line, 2x23MVA 132/33kV Sub-station at Maralal and 132kV bay extension at Rumuruti	Extend the transmission grid to increase access and connectivity through reinforcement of transmission and distribution grid
2028	RONGAI	KERINGET	132	43	43km 220kV double circuit line from Rongai to Keringet. Establishment of New 2x60MVA 220/33kV substation at Keringet and a bay extension at Rongai	Increase access and connectivity through reinforcement of transmission and distribution grid.

YEAR	TRANSMISSION LINE		VOLTAGE (KV)	LINE LENGTH (KM)	DESCRIPTION/REMARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
2028	KERINGET	CHEMOSIT	220	73	Approx. 73km 220kV d/c line a New 2x150MVA 220/132KV Substation at Chemosit and a bay extension at Keringet	Improve system reliability and security of supply in West Kenya and southern parts of Central Rift
2028	RUMURUTI	OLKALOU	132	49	Approximately 45km of 132kV and establishment of new 2x60MVA 132/33kV substation at Olkalou and 132kV, bay extensions at Rumuruti	System strengthening and Additional evacuation path for power from the Menengai Geo Complex.
2028	MENENGAI	OLKALOU	132	41	Approximately 25km of and establishment 132kV bay extensions at Menengai and Olkalou	System strengthening and Additional evacuation path for power from the Menengai Geo Complex.
2028	MYANGA	BUSIA	132	27	27km 132kV double circuit line, new switch station at Myanga (LILO off Musaga-Tororo) and new 2x23MVA 132/33kV Substation at Busia	Extend transmission grid, Increase access and connectivity through reinforcement of transmission and distribution grid.
2028	ONGENG (HOMABAY/NDHIWA)	SINDO /KARUNGO (MAGUNGA)	132	50	23km 132kV single circuit line, new 1x23MVA 132/33kV Substation at Magunga, 132kV bay extension at Ongeng.	Extend transmission grid for increased access, connectivity and reinforcement of

YEAR	TRANSMISSION LINE		VOLTAGE (KV)	LINE LENGTH (KM)	DESCRIPTION/REMARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
						distribution system.
2028	ISIOLO 220	MARSABIT	220	240	240km 220kV double circuit line with a new 2x23MVA 220/33kV substation at Marsabit and 220kV bay extension at Isiolo.	Increase access and connectivity through reinforcement of transmission and distribution grid. Evacuation of proposed Marsabit Wind PP
YEAR 2029						
2029	Kiambere/Rabai LILO	MUTOMO	220	1.5	LILO Kiambere/Rabai 220kV transmission and establishment of 220/132kV 2x90MVA substation at Mutomo.	Increase access and connectivity through reinforcement of transmission and distribution grid.
2029	MAKINDU	MUTOMO	132	69	69km, 132kV d/c line with bay extensions at Kitui and establishment of 1x23MVA 132/33kV substations at Mutomo.	Increase access and connectivity through reinforcement of transmission and distribution grid
2029	TURKWEL	LODWAR	220	120	120km 220kV double circuit line through Lokichar with new 1x60MVA 220/33kV substations in Lokichar and Lodwar.	Extend transmission grid for increased access, connectivity, and reinforcement of distribution system. Ensure adequate supply for

YEAR	TRANSMISSION LINE		VOLTAGE (KV)	LINE LENGTH (KM)	DESCRIPTION/REMARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
						Oil Exploration and Production in Turkana County.
2029	KIAMBERE	MAUA	220	100	100 km, 220kV d/c line with 220kV bay extensions at Kiambere and establishment of new 1x90MVA 220/132kV substations at Maua	Reliability and system reinforcement and probable evacuation of power (Isiolo/Meru Wind and Solar PV Power)
2029	NAKURU WEST	LANET	132	1.5	Implementation of LiLo on second circuit of the Juja –Lessos line at Nakuru West/Soilo. Approx. 1.5km 132kV line, 132kV bay extension at Nakuru West/Soilo.	To increase capacity of evacuation of power from Menengai (initial 107MW) in case development of Menengai-Rongai is delayed.
YEAR 2030						
2030	MACHAKOS	MWALA	132	80	Approx. 80km 132kV double circuit line from Machakos to Mwala - LILO on Kindaruma-Mangu 132kV line. 132kV Bay extension at Machakos and new 1x23MVA Substation at Mwala	Increase system reliability for increased electricity access/connectivity through reinforcement of distribution grid.

YEAR	TRANSMISSION LINE		VOLTAGE (KV)	LINE LENGTH (KM)	DESCRIPTION/REMARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
2030	GITHAMBO	OTHAYA	132	34	34 km 132kV single circuit line substation at new 1x23MVA 132/33kV substation at Othaya and 132kV bay extension at Githambo	Increase access and connectivity through reinforcement of transmission and distribution grid. Additional supply path for improved reliability.
2030	KIGANJO	OTHAYA	132	38	38km 132kV single circuit line 132kV bay extension at Othaya and Kiganjo.	Increase access and connectivity through reinforcement of transmission and distribution grid. Additional supply path for improved reliability.
2030	VOI	MARIAKANI	400	1.5	LILO on Mombasa - Nairobi 400kV line with a new 2x150MVA 400/132KV substation at Voi.	Increase energy access and connectivity through reinforcement of transmission and distribution grid - Reinforce 132kV Juja Rabai Line
2030	GARISSA	HABASWEIN 220	220	224	224km 220kV s/c Line, new 1x23MVA 220/33kV Sub-station at both Habaswein and Dadaab 220kV including 220kV bay extension at Garissa	Extend transmission grid for increased access and connectivity in Wajir County.

YEAR	TRANSMISSION LINE		VOLTAGE (KV)	LINE LENGTH (KM)	DESCRIPTION/REMARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
2030	WAJIR	HABASWEIN 220	220	105.6	105.6km 220kV d/c Line, new 1x23MVA 220/33kV Sub-station at Wajir and 220kV bay extension at Habaswein	Extend transmission grid for increased access and connectivity in Wajir County.
2030	GARISSA	GARBATULA	220	170	170km 220kV double circuit line with a new 2x60MVA substation at Garbatula and 1x110MVA 220kV bay extension at Garissa	Increase access and connectivity through reinforcement of transmission and distribution grid.
2030	ISIOLO 220	GARBATULA	220	150	150km 220kV double circuit line with 220kV bay extension at Isiolo	Increase access and connectivity through reinforcement of transmission and distribution grid.
2030	THIKA RD 220	MALAA	220	30	30km 220kV double circuit line with bay extensions at Thika Rd and Malaa substation.	Increase system reliability.
2030	THIKA/MALAA 400	HG FALL 400	400	200	Approx. 200km 400kV d/c line with bay extension at Thika and establishment of new 400kV SS at HG Falls	Evacuation of new hydro power resource at High Grand Falls.
2030	KIAMBERE 220	KARURA 220	220	20	20km 220kV D/circuit line	Evacuate about 90MW from proposed Karura Power Plant
YEAR 2031						

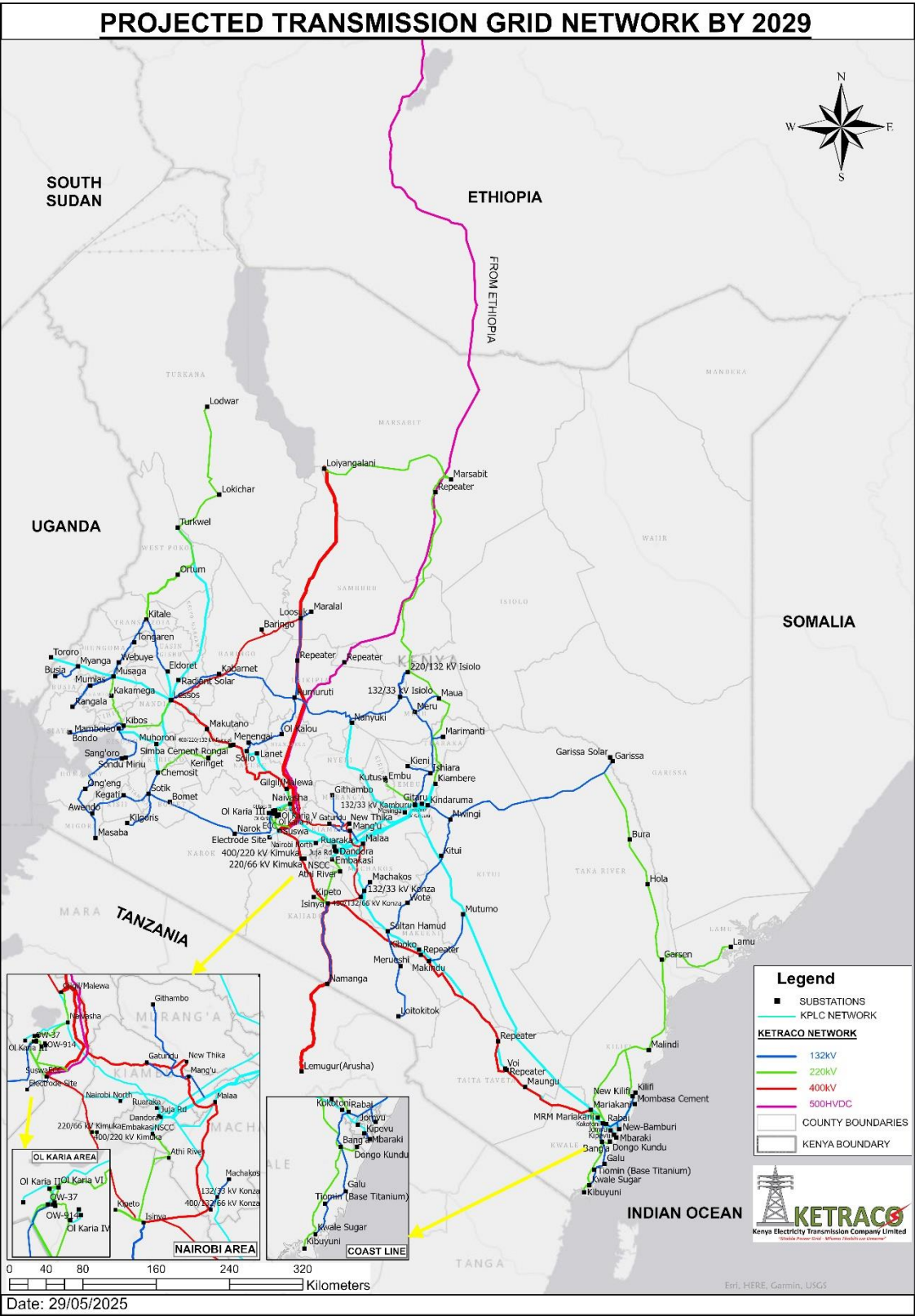
YEAR	TRANSMISSION LINE		VOLTAGE (KV)	LINE LENGTH (KM)	DESCRIPTION/REMARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
2031	WAJIR	MANDERA	220	250	250km 220KV double circuit line, new 220/33Kv 1x23MVA substation at Mandera and 220kV bay extension at Wajir.	Extend the transmission grid for Increased access and connectivity through reinforcement of distribution grid.
YEAR 2032						
2032	MOYALE	MARSABIT	220	180	180km 220KV double circuit line, new 220/33Kv 1x23MVA substation at Moyale and 220kV bay extension at Marsabit.	Extend the transmission grid for Increased access and connectivity through reinforcement of distribution grid.
2032	VOI	TAVETA	132	110	110km, 132kV s/c line, 1x23MVA 132/33kV substation at Taveta and 1x23MVA 132/33kV substation at Voi.	Increase access and connectivity through reinforcement of transmission and distribution grid
YEAR 2033						
2033	MENENGAI	RONGAI 400	400	45	45 km 400kV double circuit line with new 400/220kV Substations at Menengai and 400kV bay extension at Rongai	Evacuation adequacy for power generated from Menengai Geo Complex.
YEAR 2035						
2035	NPP TL1				Div 1 SS 3x350MVA	Evacuation of power.

YEAR	TRANSMISSION LINE		VOLTAGE (KV)	LINE LENGTH (KM)	DESCRIPTION/REMARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
2035	NPP TL2				Div 2 SS 3x350MVA	Evacuation of power.
2035	KILGORIS	MASABA (KIHANCH/ISEBANIA)	132	40	40km 132kV double circuit line from Kilgoris to Kehancha. 132kV bay extension at Kilgoris and new 132/33kV substation at Kehancha / Isebania	Extend the transmission grid for Increased access and connectivity through reinforcement of distribution grid.
2035	THIKA/GILGIL	LONFGONOT	400	10	LILLO on the Thika/Gilgil TL. New 4x200MVA 400/220kV substation at Longonot.	Part of 400kV ring - Improve reliability and ensure security of supply in the 400kV backbone.
2035	LONGONOT	OLKARIA IX	220	20	Approx. 20km 220kV d/c line with bay extension at Longonot and establishment of new 220kV SS Olkaria IX	Evacuate about 140MW from proposed Olkaria IX Geo PP
YEAR 2036						
2036	RANGALA 132	BONDO	132	30	30km 132kV single circuit line. New 2x23MVA 132/33kV Substation at Bondo and 132kV Bay extension at Rangala	Extend transmission grid, Increase access and connectivity through reinforcement of transmission and distribution grid.
YEAR 2038						

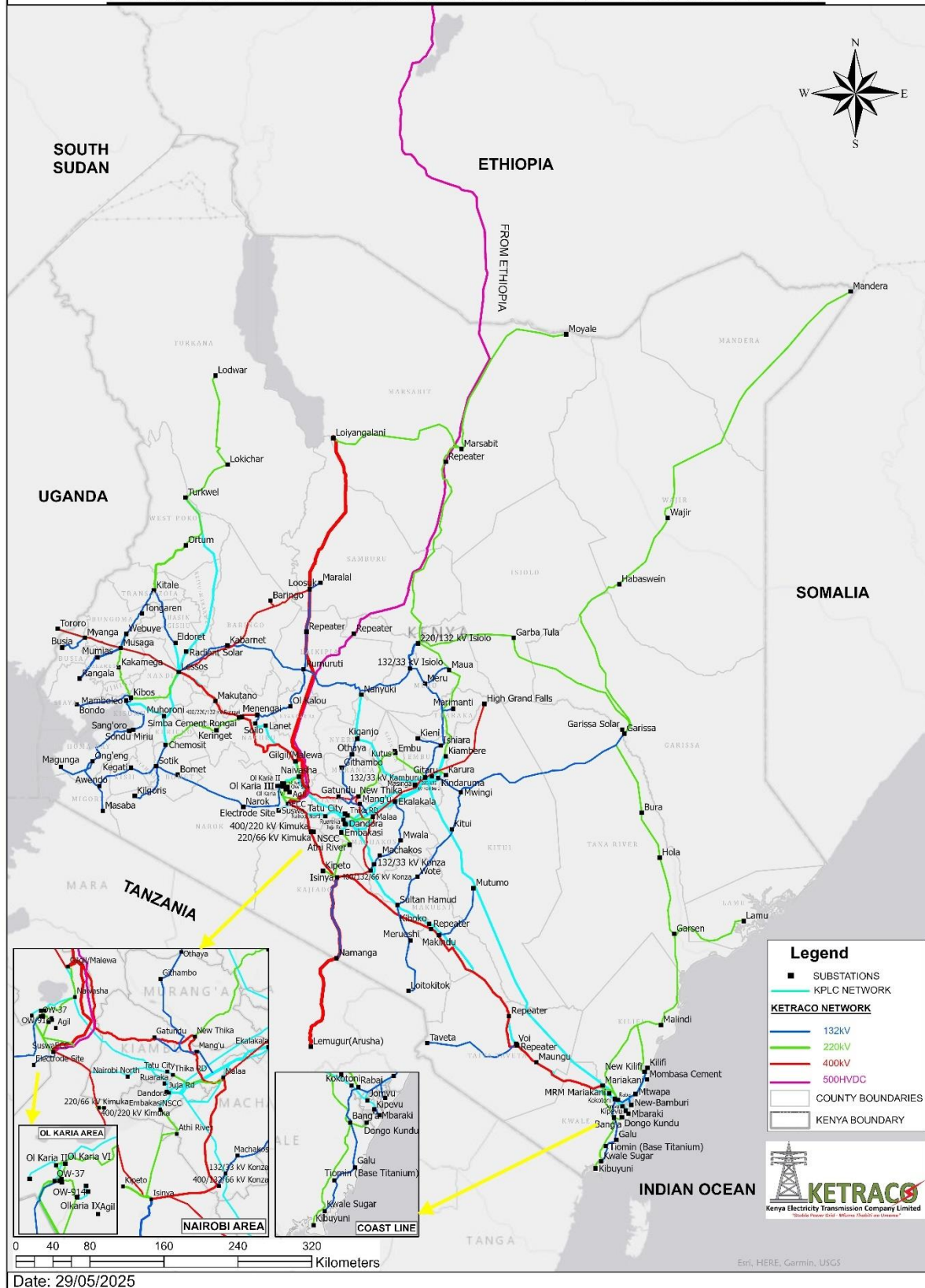
YEA R	TRANSMISSION LINE		VOLTA GE (KV)	LINE LENG TH (KM)	DESCRIPTION/REM ARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
2038	MARIAKANI	DONGO KUNDU	400	60	60km 400kV Mariakani-DongoKundu and bay extension at Mariakani SS and Dongo Kundu 400/220kV 4x200MVA	Evacuate from proposed LNG power plants.
YEAR 2040						
2040	RECONDUCTORING KWALE SUGAR-TITANIUM		132	31.5	Reconductoring 31.5km of 132kV Kwale Sugar-Titanium transmission line.	Increase access and connectivity through reinforcement of transmission and distribution grid.
2040	RECONDUCTORING WEBUYE-MUSAGA		132	18	Reconductoring 18km of 132kV Webuye-Musaga transmission line.	Increase access and connectivity through reinforcement of transmission and distribution grid.
YEAR 2041						
2041	SUSWA	NAIVASHA SEZ	220	18	18km 220kV transmission line from Suswa SS to new 220kV SEZ SS.	Increase access and connectivity through reinforcement of transmission and distribution grid to supply SEZ.
2041	RONGAI 400	KILGORIS	400	235	235 km 400kV double circuit line and new 2x150MVA 400/132kV SS at Kilgoris.	Increase system reliability and (establishment/extending of 400kV Backbone). Part of Lake Victoria Ring

YEA R	TRANSMISSION LINE		VOLTA GE (KV)	LINE LENG TH (KM)	DESCRIPTION/REM ARKS	OBJECTIVE OF THE PROJECT
	FROM	TO				
2041	NGONG/KIMUKA	MAGADI	220	88	88km 220kV double circuit line, New 220/66kV 1x60MVA substation at Magadi and 220kV bay extension at Kimuka	Increase access and connectivity through reinforcement of transmission and distribution grid.
2041	RANGALA	BUSIA	132	34	34km 132kV double circuit line and substation extension at Busia and Rangala.	Improve reliability and Increase access and connectivity through reinforcement of transmission and distribution grid.

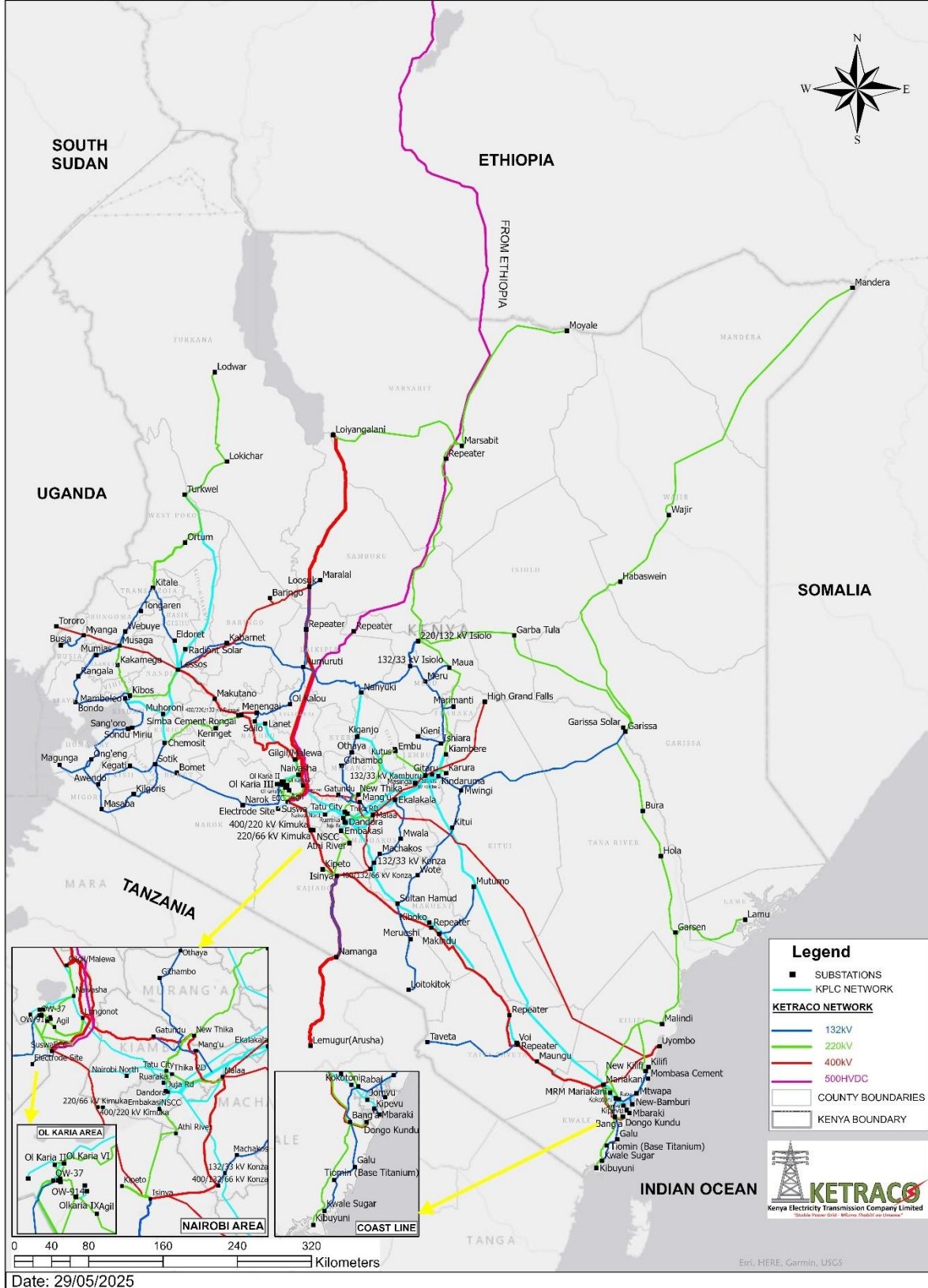
ANNEX 13: TRANSMISSION GRID NETWORK



PROJECTED TRANSMISSION GRID NETWORK BY 2034



PROJECTED TRANSMISSION GRID NETWORK BY 2039





Kenya Electricity Transmission Company Limited
P. O. Box 34942 - 00100
Nairobi, Kenya.
Kawi Complex, Block B,
Popo Lane, Off Red Cross Road, South C ,
Nairobi, Kenya.
info@ketraco.co.ke



<https://ketraco.co.ke>